2020 Urban Water Management Plan

PREPARED FOR

City of Napa

PREPARED BY

West Yost
2020 Urban Water Management Plan

Prepared for

City of Napa

Project No. 424-60-21-23

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EXECUTIVE SUMMARY

INTRODUCTION

An Urban Water Management Plan (UWMP, plan) helps water suppliers assess the availability of their water supplies with current and projected water use to help ensure reliable water service under different conditions. This water supply planning is especially critical for California as climate change alters rainfall and snowfall patterns (impacting water supply availability) and development continues to occur statewide (increasing the need for reliable water supplies). The Urban Water Management Planning Act (Act) requires larger water suppliers that provide water to urban users (whether directly or indirectly) to develop UWMPs every five years. UWMPs evaluate conditions for the next 20 to 25 years, so these regular updates ensure continued, long-term water supply planning.

The City of Napa (City) sells and distributes treated water to individual water users (e.g., residences and businesses). Because the City provides water to more than 3,000 customers, it is required to prepare a UWMP.

This Executive Summary serves as a Lay Description of the City of Napa’s 2020 UWMP, as required by California Water Code Section 10630.5.

CALIFORNIA WATER CODE REQUIREMENTS

The California Water Code (CWC) documents specific requirements for California water suppliers. The Act is included in the CWC and specifies the required elements of a UWMP, including discussing an agency’s water system and facilities, calculating how much water its customers use (i.e., water demand) and how much it can supply, and detailing how it would respond during a drought or other water supply shortage. Also, a UWMP must describe what specific coordination steps were taken to prepare, review, and adopt the plan.

The Act has been revised over the years. The Water Conservation Act of 2009 (also known as SB X7-7) required retail water agencies to establish water use targets for 2015 and 2020 that would result in statewide water savings of 20 percent by 2020. In their 2020 UWMPs, retail water agencies are required to report on their compliance with SB X7-7.

The 2012 to 2016 drought led to further revisions to the Act to improve water supply planning for long-term reliability and resilience to drought and climate change. These revisions were formalized in the 2018 Water Conservation Legislation and include:

- Five Consecutive Dry-Year Water Reliability Assessment: Analyze water supply reliability for five consecutive dry years over the planning period of this plan (see Chapter 7).
- Drought Risk Assessment: Assess water supply reliability from 2021 to 2025 assuming they are dry years (see Chapter 7).
- Seismic Risk: Identify the seismic risk to the agency’s water facilities and have a plan to address identified risks (see Chapter 8).
- Energy Use Information: If data are available, include reporting on the amount of electricity used to obtain, treat, and distribute water (see Chapter 6).
Executive Summary

- Water Shortage Contingency Plan (WSCP): Update the agency’s plan to include an annual process for assessing potential gaps between planned water supply and demands; conform with the State’s standard water shortage levels (including a shortage level greater than 50 percent) for consistent messaging and reporting; and provide water shortage responses that are locally appropriate (see Chapter 8).

- Lay Description: Provide a lay description of the findings of the UWMP; this Executive Summary serves as the “Lay Description” for this plan.

Major components and findings of the City’s 2020 UWMP are summarized below.

CITY WATER SYSTEM

The City serves drinking water to an area encompassing much of the lower Napa Valley and extending up to the foothills on the east and west sides of the valley as shown on Figure ES-1. In addition, the City exports water to the City of American Canyon, the City of St. Helena, the City of Calistoga, the Town of Yountville, and the California Veterans Home. Because deliveries to the City of American Canyon and City of Calistoga do not directly impact the City’s water supply, they are excluded from the water service reliability (supply vs. demand) analyses of this plan.

The Water Division of the City Utilities Department is responsible for the operation, maintenance, and improvement of the municipal drinking water system owned by the City. The City’s municipal drinking water system consists of 3 water treatment plants, 12 storage tanks, 9 pump stations, and 360 miles of pipelines.

WATER USE BY CITY CUSTOMERS

The City anticipates moderate growth in the next 25 years, which would increase its demand for water. Thorough and accurate accounting of current and future water demands is critical for the City’s planning efforts. To continue delivering safe and reliable drinking water, the City must know how much water its customers currently use and how much they expect to use in the future.

The City reviewed development and planning documents to estimate water demands through the year 2045. Overall, the City’s drinking water demand could potentially increase by approximately 10 percent (from 2020 levels) by 2045.

Some of the potential growth in drinking water demand is offset by increased recycled water use and improved overall water use efficiency. Recycled water is municipal wastewater that has been treated to a specified quality that allows for re-use. Napa Sanitation District provides recycled water within the City’s water service area, mainly for irrigation. Although recycled water use was only about 4 percent of the City’s total water use in 2020, the City expects the volume of recycled water use to nearly double by 2045.
Figure ES-1. City of Napa Water Service Area
Executive Summary

CITY WATER SUPPLIES

The City’s water supplies consist of local surface water (Lake Hennessey and Milliken Reservoir) and imported water from the State Water Project (SWP), which diverts water from the Sacramento-San Joaquin Delta and conveys it to Napa and Solano counties via the North Bay Aqueduct. In 2020, approximately 37 percent of the City’s drinking water supplies came from local sources (which include Lake Hennessey and Milliken Reservoir), with the remainder coming from the SWP.

The City’s potential future water supply projects include treatment plant improvements, purchasing storage in new reservoirs, and investigating using highly treated wastewater as drinking water (i.e., direct potable reuse). These projects are preliminary, so this plan does not quantify their impact. Therefore, the City’s projected future water supply sources remain the same: local supply from Lake Hennessey and Milliken Reservoir and imported water from the SWP. Beginning in 2035, this plan assumes a 10 percent reduction in average supplies from these sources due to climate change.

CONSERVATION TARGET COMPLIANCE

In its 2015 UWMP, the City documented meeting its interim water use target and confirmed its 2020 water use target based on 2010 Census data. The City was on track to meet its 2020 water use target, but the COVID-19 pandemic and dry conditions in 2020 increased water use slightly above the target. Although it narrowly missed the 2020 water use target, the City can remain eligible for State loans or grants if it includes in any applications details on achieving the required water use reductions.

CITY WATER SERVICE RELIABILITY

Under normal hydrological conditions, the City’s existing water supplies are sufficient to meet future projected demands. The CWC also asks agencies to evaluate their water service reliability by examining the impact of drought on their water supplies and comparing those reduced supplies to water demands. Specifically, agencies should calculate their water supplies during a single dry year and five consecutive dry years using historical records. For example, the City can estimate its supply during a single dry year by looking at how much local surface water was available during the driest year on record. If the historical “dry year” supply was reduced by 10 percent, then the City can conservatively assume a similar 10 percent reduction in its supplies during a future dry year.

The City is positioned to withstand the effects of a single dry year and a five-year drought. While the City is projected to experience supply shortfalls, these could be managed via demand reduction measures in the WSCP. For example, for five-year droughts beginning in 2035, 2040, and 2045 and single dry years in 2040 and 2045, it is assumed that water conservation efforts up to Stage 2 in the WSCP would be needed to reduce the City’s water demands to match available supplies.

Drought risk was also specifically assessed assuming 2021 through 2025 would be historically dry years. This assessment indicated that the City would experience a shortfall in supplies in the first four years (2021-2024). These deficits range from 3 percent to 23 percent. Implementing applicable stages of the WSCP would eliminate these deficits by reducing demand. By 2025, supplies are adequate to meet demand without the need for demand reduction.
Executive Summary

WATER SHORTAGE CONTINGENCY PLAN

A WSCP describes an agency’s plan for preparing for and responding to water shortages. The City updated its WSCP to include its process for assessing potential gaps between planned water supply and demands for the current year and the following (assumed dry) year. The City also aligned its water shortage levels with the State’s standard stages for consistent messaging and planned for locally appropriate water shortage responses. The WSCP may be used for foreseeable and unforeseeable events and is adopted concurrently with this plan by separate resolution to allow for updates as conditions change.

UWMP PREPARATION, REVIEW, AND ADOPTION

The City prepared this 2020 UWMP in coordination with the public. While preparing this plan, the City also notified other stakeholders (e.g., Napa County, City of American Canyon, Napa Sanitation District, etc.) of its preparation, its availability for review, and the public hearing prior to adoption. The City encouraged community participation in the development of the 2020 UWMP using newspaper advertisements, social media, and the City’s website. These public notices included the time and place of the public hearing, as well as where the plan would be available for public inspection.

The public hearing provided an opportunity for the City’s water users and the general public to become familiar with the 2020 UWMP and ask questions about the City’s plans for continuing to provide reliable, safe, high-quality water and mitigating potential water shortages. Following the public hearing, the Napa City Council adopted this 2020 UWMP and WSCP on December 21, 2021. A copy of the adopted UWMP was submitted to the Department of Water Resources and is available on the City’s website: www.cityofnapa.org/water.
CHAPTER 1
Introduction

This chapter provides an introduction and overview of the City of Napa’s (City) 2020 Urban Water Management Plan (UWMP, plan), including the importance and extent of the City’s water management planning efforts, changes since the preparation of the City’s 2015 UWMP, and the organization of this 2020 UWMP. This plan has been prepared jointly by City staff and West Yost.

1.1 INTRODUCTION

The Urban Water Management Planning Act (Act) was originally established by Assembly Bill (AB) 797 on September 21, 1983. In passing the Act, state legislators recognized that water is a limited resource and declared that efficient water use and conservation would be actively pursued throughout the State. The primary objective of the Act is to direct “urban water suppliers” to develop a UWMP that provides a framework for long-term water supply planning and documents how urban water suppliers are carrying out their long-term resource planning responsibilities to ensure adequate water supplies are available to meet existing and future water demands. A copy of the current version of the Act, as incorporated in Sections 10610 through 10657 of the California Water Code (CWC), is provided in Appendix A of this plan.

1.2 IMPORTANCE AND EXTENT OF CITY’S WATER MANAGEMENT PLANNING EFFORTS

The purpose of the UWMP is to provide a planning tool for the City to develop, manage, and deliver municipal water supplies to its water service area. To continue to meet the water needs of the community, the City carefully manages their available water resources. This plan provides the City with a comprehensive water management action plan for guidance as water supply and demand conditions change.

Further, changes to the Act since 2015 require updates to the City’s previously adopted Water Shortage Contingency Plan (WSCP). The WSCP is part of this UWMP and provides a plan for response to various water supply shortage conditions.

1.3 CHANGES FROM 2015 UWMP

The Act has been modified over the years in response to the State’s water shortages, droughts, and other factors. A significant amendment was made in 2009, after the 2007 to 2009 drought, and as a result of the Governor’s call for a statewide 20 percent reduction in urban water use by the year 2020. This was the Water Conservation Act of 2009, also known as Senate Bill Seven of the Senate’s Seventh Extraordinary Session of 2009 (SB X7-7). The Water Conservation Act of 2009 required agencies to establish water use targets for 2015 and 2020 that would result in statewide water savings of 20 percent by 2020. The 2012 to 2016 drought led to further amendments to the CWC to improve on water supply planning for long-term reliability and resilience to drought and climate change.
Summarized below are the major additions and changes to the CWC since the City’s 2015 UWMP was prepared:

- **Five Consecutive Dry-Year Water Reliability Assessment** [CWC Section 10635(a)]. The Legislature modified the dry-year water reliability planning from a “multi-year” time period to a “drought lasting five consecutive water years.” This statutory change requires the urban water supplier to analyze the reliability of its water supplies to meet its water use over an extended drought period. This requirement is addressed in the water use assessment in Chapter 4; the water supply analysis in Chapter 6; and the water service reliability determinations in Chapter 7 of this plan.

- **Drought Risk Assessment** [CWC Section 10635(b)]. The Legislature created a new UWMP requirement for drought planning because of the significant duration of recent California droughts and the predictions about hydrological variability attributable to climate change. The Drought Risk Assessment (DRA) requires the urban water supplier to assess water supply reliability over a five-year period from 2021 to 2025 that examines water supplies, water uses, and the resulting water supply reliability under a reasonable prediction for five consecutive dry years. The DRA is discussed in Chapter 7 based on the water use information in Chapter 4; the water supply analysis in Chapter 6; and the water service reliability determinations in Chapter 7 of this plan.

- **Seismic Risk** [CWC Section 10632.5]. The CWC now requires urban water suppliers to specifically address seismic risk to various water system facilities and to have a mitigation plan. Water supply infrastructure planning is correlated with the regional hazard mitigation plan associated with the urban water supplier. The City’s seismic risk is discussed in Chapter 8 of this plan.

- **Energy Use Information** [CWC Section 10631.2]. The CWC now requires urban water suppliers to include readily obtainable information on estimated amounts of energy for their water supply extraction, treatment, distribution, storage, conveyance, and other water uses. The reporting of this information was voluntary in 2015. The City’s energy use information is provided in Chapter 6 of this plan.

- **Water Loss Reporting for Five Years** [CWC Section 10608.34]. The CWC now requires urban water suppliers to include water loss reporting for the past five years. The City’s water loss reporting is provided in Chapter 4 of this plan.

- **Water Shortage Contingency Plan** [CWC Section 10632]. In 2018, the Legislature modified the UWMP laws to require a WSCP with specific elements. The WSCP provides the urban water supplier with an action plan for a drought or catastrophic water supply shortage. Although the new requirements are more prescriptive than previous versions, many of these elements have long been included in WSCPs, other sections of UWMPs, or as part of the urban water supplier’s standard procedures and response actions. Many of these actions were implemented by the urban water suppliers during the last drought to successfully meet changing local water supply challenges. The WSCP is used by the California Department of Water Resources (DWR), the State Water Resources Control Board (SWRCB), and the Legislature in addressing extreme drought conditions or statewide calamities that impact water supply availability. The City’s WSCP is summarized in Chapter 8 and provided in Appendix J of this plan.
• **Groundwater Supplies Coordination** [CWC Section 10631(b)(4)]. In 2014, the Legislature enacted the Sustainable Groundwater Management Act to address groundwater conditions throughout California. The CWC now requires 2020 UWMPs to be consistent with Groundwater Sustainability Plans in areas where those plans have been completed by Groundwater Sustainability Agencies. This requirement is addressed in Chapter 6 of this plan.

• **Lay Description** [CWC Section 10630.5]. The Legislature included a new statutory requirement for the urban water supplier to include a lay description of the fundamental determinations of the UWMP, especially regarding water service reliability, challenges ahead, and strategies for managing reliability risks. This section of the UWMP could be viewed as a go-to synopsis for new staff, new governing members, customers, and the media, and it can ensure a consistent representation of the urban water supplier’s detailed analysis. This requirement is addressed in the Executive Summary of this plan.

• **Water Loss Management** [CWC Section 10608.34(a) (1)]. The Legislature included a requirement for urban water suppliers to report on their plan to meet the water loss performance standards in their 2020 UWMPs. This requirement is addressed in the Demand Management Measures presented in Chapter 9 of this plan.

1.4 DEMONSTRATION OF CONSISTENCY WITH THE DELTA PLAN FOR PARTICIPANTS IN COVERED ACTIONS

Urban water suppliers that anticipate participating in or receiving water from a proposed project (i.e., “covered action”), such as a multi-year water transfer, conveyance facility, or new diversion that involves transferring water through, exporting water from, or using water in the Sacramento-San Joaquin Delta (Delta) should provide information in their 2015 and 2020 UWMPs that can then be used in the certification of consistency process to demonstrate consistency with Delta Plan Policy WR P1, Reduce Reliance on the Delta Through Improved Regional Water Self-Reliance (California Code of Regulations, Title 23, Section 5003).

To demonstrate reduced reliance on the Delta and improved regional self-reliance, urban water suppliers are to:

1. Complete a UWMP.
2. Identify, evaluate, and commence implementation of programs and projects included in the UWMP that are locally cost effective and technically feasible in reducing reliance on the Delta.
3. Include expected outcome for measurable reduction in Delta reliance and improvement in regional self-reliance in their UWMPs, commencing in their 2015 UWMPs and continuing in their subsequent UWMPs. Programs and projects identified above should reduce the amount or percentage of water used from the Delta watershed. For the purposes of reporting, water efficiency is considered a new source of water supply.

Since the City is a subcontractor of the State Water Project (SWP), it anticipates participating in a covered action and is therefore required to demonstrate reduced Delta reliance. Appendix B of this plan demonstrates the City’s consistency with Delta Plan Policy WR P1.
The City completed and adopted its 2015 UWMP in September 2017. This 2020 UWMP was completed and presented for adoption to the Napa City Council (City Council) on December 21, 2021. Chapter 6 of the City’s 2015 and 2020 UWMPs describes and evaluates existing and future projects whose implementation improves regional self-reliance. Chapter 9 of the City’s 2015 and 2020 UWMPs describes Demand Management Measures that the City has implemented as part of its water conservation program.

1.5 PLAN ORGANIZATION

This 2020 UWMP contains the appropriate sections and tables required per CWC Division 6, Part 2.6 (Act), included in Appendix A of this plan, and has been prepared based on guidance provided by DWR in their “Urban Water Management Plan Guidebook 2020” (DWR Guidebook).

This 2020 UWMP is organized into the following chapters:

- Chapter 1: Introduction
- Chapter 2: Plan Preparation
- Chapter 3: System Description
- Chapter 4: Water Use Characterization
- Chapter 5: SB X7-7 Baselines, Targets, and 2020 Compliance
- Chapter 6: Water Supply Characterization
- Chapter 7: Water Service Reliability and Drought Risk Assessment
- Chapter 8: Water Shortage Contingency Plan
- Chapter 9: Demand Management Measures
- Chapter 10: Plan Adoption, Submittal, and Implementation

This plan also contains the following appendices of supplemental information and data:

- Appendix A: Legislative Requirements
- Appendix B: Demonstration of Reduced Delta Reliance
- Appendix C: DWR 2020 Urban Water Management Plan Tables
- Appendix D: DWR 2020 Urban Water Management Plan Checklist
- Appendix E: Agency and Public Notices
- Appendix F: Distribution System Water Loss Audit
- Appendix G: 2020 SB X7-7 Compliance Form
- Appendix H: Recycled Water Sales Agreement
- Appendix I: Napa Sanitation District Recycled Water Policy (Resolution No. 11-004)
- Appendix J: Water Shortage Contingency Plan
- Appendix K: UWMP and WSCP Adoption Resolutions
Chapter 1
Introduction

Furthermore, this plan contains all the tables recommended in the DWR Guidebook, both embedded into each chapter where appropriate and included in Appendix C.

DWR’s Urban Water Management Plan Checklist, as provided in the DWR Guidebook, has been completed by West Yost to demonstrate the plan’s compliance with applicable requirements. A copy of the completed checklist is included in Appendix D.
CHAPTER 2
Plan Preparation

This chapter describes the preparation of the City’s 2020 UWMP and WSCP, including the basis for preparing the plan, individual or regional planning, fiscal or calendar year reporting, units of measure, and plan coordination and outreach.

2.1 BASIS FOR PREPARING A PLAN

The Act requires every “urban water supplier” to prepare and adopt a UWMP and review its plan at least once every five years to make any amendments or changes that are identified by the review. An urban water supplier is defined as a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water per year (AFY).

The City manages Public Water System CA2810003. As shown in Table 2-1, the City provided water to 25,264 customer connections and supplied 14,092 acre-feet (AF) of water in 2020. Therefore, the City is required to prepare a UWMP, as it meets the definition of an urban water supplier.

While the City treats and wheels water to the cities of American Canyon and Calistoga, it is not considered a wholesale supplier for UWMP purposes since the City provides less than 3,000 AFY of potable water at wholesale for municipal use. The City’s last UWMP, the 2015 UWMP, was adopted by the City Council on September 5, 2017.

<table>
<thead>
<tr>
<th>Public Water System Number</th>
<th>Public Water System Name</th>
<th>Number of Municipal Connections 2020</th>
<th>Volume of Water Supplied 2020 *</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA2810003</td>
<td>City of Napa</td>
<td>25,264</td>
<td>14,092</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>25,264</td>
<td>14,092</td>
</tr>
</tbody>
</table>

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

NOTES: Volumes are in acre-feet (AF). Excludes 591 AF treated & wheeled to the cities of American Canyon and Calistoga, as those agencies provide the source of supply.

2.2 REGIONAL PLANNING

As described in Section 2.3 below, the City has prepared this plan on an individual reporting basis, not part of a regional planning process.
2.3 INDIVIDUAL OR REGIONAL PLANNING AND COMPLIANCE

As shown in Table 2-2, this plan has been prepared on an individual reporting basis covering only the City’s water service area. The City does not participate in a regional alliance, and it has not prepared a Regional Urban Water Management Plan. As described in Section 2.5, the City has notified and coordinated planning and compliance with appropriate regional agencies and constituents.

Table 2-2. Plan Identification
(DWR Table 2-2)

<table>
<thead>
<tr>
<th>Select Only One</th>
<th>Type of Plan</th>
<th>Name of RUWMP or Regional Alliance if applicable (select from drop down list)</th>
</tr>
</thead>
<tbody>
<tr>
<td>☑</td>
<td>Individual UWMP</td>
<td></td>
</tr>
<tr>
<td>☐</td>
<td>Water Supplier is also a member of a RUWMP</td>
<td></td>
</tr>
<tr>
<td>☐</td>
<td>Water Supplier is also a member of a Regional Alliance</td>
<td></td>
</tr>
<tr>
<td>☐</td>
<td>Regional Urban Water Management Plan (RUWMP)</td>
<td></td>
</tr>
</tbody>
</table>

2.4 FISCAL OR CALENDAR YEAR AND UNITS OF MEASURE

The City is a water retailer and has prepared its 2020 UWMP on a calendar year basis, with the calendar year starting on January 1 and ending on December 31. Water use and planning data for the entire 2020 calendar year have been included. Water volumes in this plan are reported in units of AF.

The City’s reporting methods for this plan are summarized in Table 2-3.
Chapter 2
Plan Preparation

Table 2-3. Supplier Identification
(DWR Table 2-3)

<table>
<thead>
<tr>
<th>Type of Supplier (select one or both)</th>
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</thead>
<tbody>
<tr>
<td>Supplier is a wholesaler</td>
</tr>
<tr>
<td>Supplier is a retailer</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fiscal or Calendar Year (select one)</th>
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</thead>
<tbody>
<tr>
<td>UWMP Tables are in calendar years</td>
</tr>
<tr>
<td>UWMP Tables are in fiscal years</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Units of measure used in UWMP *</th>
</tr>
</thead>
<tbody>
<tr>
<td>(select from drop down)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>AF</td>
</tr>
</tbody>
</table>

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

2.5 COORDINATION AND OUTREACH

This section discusses the City’s inter-agency coordination and coordination with the public. The Act requires the City to coordinate the preparation of its plan with other appropriate agencies and departments within the City, including other water suppliers that share a common source, water management agencies, and relevant public agencies. These agencies, as well as the public, participated in the coordination and preparation of this plan and are summarized below.

2.5.1 Wholesale and Retail Coordination

The Napa County Flood Control and Water Conservation District (NCFCWCD) contracts directly with DWR for SWP supplies. The City receives its annual SWP entitlement through this contract as a SWP subcontractor. In this way, NCFCWCD is a “wholesaler” for the City, as shown in Table 2-4.

Table 2-4. Water Supplier Information Exchange
(DWR Table 2-4 Retail)

<table>
<thead>
<tr>
<th>Wholesale Water Supplier Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Napa County Flood Control and Water Conservation District (NCFCWCD)</td>
</tr>
</tbody>
</table>

NOTES: NCFCWCD is the direct local contractor with DWR for State Water Project (SWP) supplies. In this way, it acts as a wholesaler to the City, a SWP subcontractor.
2.5.2 Coordination with Other Agencies and the Community

The City coordinated the preparation of this plan with other departments within the City as well as other local agencies, including relevant public agencies that utilize the same water supplies. These agencies included:

- City of American Canyon
- Town of Yountville
- City of St. Helena
- City of Calistoga
- Napa Sanitation District
- Napa County

The City actively encourages community participation in water management activities and specific water-related projects. The City’s public participation program includes both active and passive means of obtaining input from the community, such as mailings, public meetings, and web-based communication. The City’s website describes ongoing projects and posts announcements of planned rate increases to fund these water projects.

As part of the 2020 UWMP and WSCP development, the City facilitated a public review period. Public noticing, pursuant to Section 6066 of the Government Code, was conducted prior to commencement of a public comment period. Public hearing notices are included in Appendix E of this plan. During the public comment period, the Draft UWMP was made available on the City’s website (www.cityofnapa.org/water) and at the Utilities Department building, the City Clerk’s office, and the Napa City-County Library.

The public hearings provided an opportunity for all City water users and the general public to become familiar with the 2020 UWMP and WSCP and ask questions about the City’s water supply and its continuing plans for providing reliable, safe, high-quality water.

2.5.3 Notice to Cities and Counties

CWC Section 10621(b) requires agencies to notify the cities and counties to which they serve water at least 60 days in advance of the public hearing that the plan is being updated and reviewed. In March and June 2021, notices of preparation were sent to these cities, Napa County (County), and other stakeholders to inform them of the UWMP and WSCP update process and schedule, and to solicit input for the 2020 UWMP and WSCP. The notifications to cities and counties, the public hearing notifications, and the public hearing and adoption are discussed in Chapter 10 of this plan.
This chapter describes the City’s water service area, system facilities, and staff. In addition, this chapter discusses the climate, population, demographics, and land use within the City’s service area.

### 3.1 GENERAL DESCRIPTION

The City is located at the northern end of San Pablo Bay, approximately 40 miles northeast of San Francisco, as shown on Figure 3-1. Incorporated in 1872, the City is the county seat for Napa County and the dynamic, vibrant hub of the idyllic Napa Valley. Famous for its wineries, Napa offers an incredible combination of suburban amenities, rural beauty, and the urban benefits of being only one hour from San Francisco and the Pacific Ocean. The City’s historic character, natural beauty, and unique attractions have enabled it to become a quality residential community, as well as one of the nation’s premier tourist destinations.

![Figure 3-1. City of Napa Vicinity](image)

### 3.2 SERVICE AREA DESCRIPTION

The City serves drinking water to an area encompassing much of the lower Napa Valley and extending up to the foothills on the east and west sides of the valley. As shown on Figure 3-2, the City’s water service area contains four boundaries of importance:

- Water Operational Boundary
- Sphere of Influence (SOI)
- Rural Urban Limit (RUL)
- City Limits
Figure 3-2. City of Napa Water Service Area
Chapter 3
System Description

The Water Operational Boundary encompasses the City’s water service area, including areas along transmission mains originating from the City’s Water Treatment Plants (WTP) (Hennessey, Milliken, and Edward I. Barwick Jamieson Canyon). The SOI is the boundary within which the Local Agency Formation Commission of Napa County (LAFCO) anticipates the City limits may be expanded and City water services may be extended with LAFCO’s approval. Currently, about 95 percent of the area within the SOI is within the City limits, and the remaining 5 percent is unincorporated land under the jurisdiction of the County.

While most of the City’s water supply is delivered to customers within the City limits, the City also serves water outside City limits and even outside the SOI, including customers in the Monticello Road/Silverado Resort community, the independent Congress Valley Water District (CVWD), the Carneros Mutual Water Company, and along the Conn Transmission Main. CVWD was originally scheduled to be dissolved in 2017, with its water system infrastructure wholly maintained by and transferred to the City; however, the current agreement was extended to 2022 to establish a water service transition plan. The City also serves the approximately 1,175 residents of Napa State Hospital located outside the City limits and SOI.

No significant changes impacting the City’s service area have occurred since the 2015 UWMP. The last significant change occurred in 2014, when the City Council approved the annexation of the 151-acre parcel known as the “Napa Pipe Property,” located at the south end of the City on the eastern bank of the Napa River.

The City also exports water to the City of American Canyon (American Canyon), the City of St. Helena (St. Helena), the City of Calistoga (Calistoga), the Town of Yountville (Yountville), and the California Veterans Home. American Canyon and Calistoga have contractual entitlements to SWP water from the North Bay Aqueduct (NBA), and the City treats their water at its Edward I. Barwick Jamieson Canyon (Jamieson Canyon) WTP and wheels it to them. Because deliveries to American Canyon and Calistoga do not directly impact the City’s supply, they are excluded from the water service reliability (supply vs. demand) analyses in Chapter 7 of this plan. St. Helena and Yountville are also “wholesale” customers of the City, as any City water they purchase is then sold to their own retail customers (i.e., end users). St. Helena is contractually obligated to purchase a minimum amount of water each year from the City. Yountville and the California Veterans Home rarely purchase water from the City due to their own sufficient local water supply sources.

3.3 WATER SYSTEM DESCRIPTION

Figure 3-3 shows the major components of the City’s potable water system, including the Conn Transmission Main and the Hennessey, Milliken, and Jamieson Canyon WTPs.

Hennessey WTP began operation in 1981 and has a nominal treatment capacity of 20 million gallons per day (MGD). Treating water from Lake Hennessey, the Hennessey WTP provides complete conventional treatment, including flash mixing, coagulation, flocculation, sedimentation, filtration, and disinfection. Treated water from the Hennessey WTP is conveyed into a buried, 5.0 million gallon (MG) concrete clearwell tank located on-site before delivery to the City’s distribution system through the 20-mile long, 36-inch diameter Conn Transmission Main. The Conn Transmission Main runs parallel to Conn Creek, Highway 128, and Highway 29, traveling along easements and rights-of-way before connecting to the City’s main distribution system in northwest Napa.
Chapter 3
System Description

Milliken WTP was constructed in 1976 and has a treatment capacity of 4 MGD. Raw water from Milliken Reservoir is released into Milliken Creek and then diverted to Milliken WTP, a direct filtration plant with a contact/reaction tank and four horizontal, dual-media pressure filters operated in parallel. Treated water is stored in a 2.0 MG clearwell tank located above the WTP site before delivery to the City’s distribution system through the three-mile long Milliken Transmission Main. The Milliken Transmission Main serves customers in the Silverado Resort/Hillcrest areas before connecting to the City’s main distribution system at the intersection of Silverado Trail and Monticello Road.

All SWP raw water is delivered to the Jamieson Canyon WTP, which was originally constructed in 1968 and upgraded in 1988 and 2011 to increase its treatment capacity to 20 MGD. Jamieson Canyon WTP includes pre- and intermediate-ozonation, along with more conventional surface water treatment steps: rapid mixing, flocculation, sedimentation with tube settlers, gravity filtration, and disinfection. Treated water is stored in a 5.0 MG clearwell tank located on-site before delivery to the City’s distribution system through the 42-inch diameter Jamieson Transmission Main. The Jamieson Transmission Main runs parallel to Jamieson Canyon Road to Highway 29, then splits into 36-inch and 24-inch diameter pipelines near the intersection of Highway 29 and Highway 221 as it joins the City’s main distribution system.

The City’s main water distribution system includes 12 storage tanks, nine pump stations, and 360 miles of pipelines.

3.4 WATER DIVISION

The Water Division (Division) of the City Utilities Department is responsible for the operation, maintenance, and improvement of the municipal drinking water system owned by the City. The City operates under a Council-Manager form of government by which the five-member City Council sets City policy and directly hires the City Manager to implement City policy. The City Manager directly hires all department heads, including the Utilities Director, and the Utilities Director hires and manages a Deputy Utilities Director to lead the Division. The mission of the Division is to provide an uninterrupted supply of high-quality and reasonably priced water to the community for consumption and fire protection.

Operating three WTPs, the Division delivers water meeting Federal and State drinking water regulations, invests in capital improvements, plans for future water supply needs, responds to emergency repairs, and maintains a proactive water conservation program. The Division operates financially as an enterprise fund, with costs paid by water rates, capacity fees, service charges, and related revenues.

As shown on Figure 3-4, the Division is organized into four sections: Administration, Water Treatment, Water Distribution, and Engineering. In 2020, there were the equivalent of 62 full-time employees working to meet the Division’s mission.
Figure 3-3. City of Napa Water Treatment and Distribution System
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System Description

Figure 3-4. City of Napa Water Division Organization
3.5 SERVICE AREA CLIMATE

The climate of the City’s service area is best described as Mediterranean, characterized by hot, dry summers and cool winters. This section describes the historical climate and potential effects of climate change.

3.5.1 Historical Climate

Water use is dependent on various climate factors such as temperature, precipitation, and evapotranspiration. Relevant climate data for the City are presented in Table 3-1, including reference evapotranspiration (ETo) and average rainfall and temperatures.

ETo includes plant transpiration and water lost through evaporation from the soil and surface-water bodies. The monthly ETo totals roughly represent the irrigation needs of standard cool-season turfgrass in the City. Approximately 64 percent of annual ETo occurs between May and September. Since these months have the lowest rainfall totals, the higher ETo drives the demand for supplemental irrigation.

<table>
<thead>
<tr>
<th>Month</th>
<th>Standard Monthly Average ETo(a), inches</th>
<th>Average Total Rainfall(b), inches</th>
<th>Average Temperature(b), degrees Fahrenheit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Maximum</td>
</tr>
<tr>
<td>January</td>
<td>1.31</td>
<td>5.14</td>
<td>57.0</td>
</tr>
<tr>
<td>February</td>
<td>1.82</td>
<td>4.38</td>
<td>61.5</td>
</tr>
<tr>
<td>March</td>
<td>3.30</td>
<td>3.35</td>
<td>65.0</td>
</tr>
<tr>
<td>April</td>
<td>4.71</td>
<td>1.65</td>
<td>69.6</td>
</tr>
<tr>
<td>May</td>
<td>5.92</td>
<td>0.68</td>
<td>74.6</td>
</tr>
<tr>
<td>June</td>
<td>6.66</td>
<td>0.21</td>
<td>79.8</td>
</tr>
<tr>
<td>July</td>
<td>7.08</td>
<td>0.02</td>
<td>81.9</td>
</tr>
<tr>
<td>August</td>
<td>6.31</td>
<td>0.06</td>
<td>81.7</td>
</tr>
<tr>
<td>September</td>
<td>4.92</td>
<td>0.31</td>
<td>82.1</td>
</tr>
<tr>
<td>October</td>
<td>3.49</td>
<td>1.36</td>
<td>76.5</td>
</tr>
<tr>
<td>November</td>
<td>1.76</td>
<td>2.98</td>
<td>65.9</td>
</tr>
<tr>
<td>December</td>
<td>1.21</td>
<td>4.50</td>
<td>57.6</td>
</tr>
<tr>
<td>Annual</td>
<td><strong>48.5</strong></td>
<td><strong>24.7</strong></td>
<td><strong>71.1</strong></td>
</tr>
</tbody>
</table>

(a) Source: California Irrigation Management Information System (CIMIS) data for Station #77: Oakville (downloaded April 26, 2021).
(b) Source: Western Regional Climate Center data for DWR for Napa State Hospital (period of record: 1893 to 2016).

There is considerable variation in precipitation from year to year. An annual total of less than 13 inches can be anticipated one year in twenty, while more than 36 inches can be expected with about the same frequency. Annual precipitation averages nearly 25 inches, but more than 80 percent of that total falls in the months of November through March, when ETo is lowest. Therefore, summer landscape irrigation is a significant component of the City’s overall water demand and has influenced the City’s water conservation efforts, which are described in Chapter 9 of this plan.
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Mild temperatures predominate in Napa, but highs above 100 degrees Fahrenheit (°F) have been observed in every month from May through October. Nights cool off quickly with the average minimum temperature during the summer months in the low 50s. Winter brings sub-freezing temperatures nearly every year. Historically, temperatures below 32°F have been recorded during each month from October through May.

3.5.2 Potential Effects of Climate Change

The CWC now requires urban water suppliers to account for the impacts of climate change on water supplies and supply reliability. A discussion of the effects of climate change on water demands, supplies, and reliability can be found in Chapter 4 (Water Use Characterization), Chapter 6 (Water Supply Characterization), and Chapter 7 (Water Service Reliability and Drought Risk Assessment) of this plan. This section summarizes those discussions.

In general, climate change is expected to increase water demand for irrigation and the year-to-year variability of demands. This is the result of increased temperatures (which increases ETo) and more variability in precipitation (which impacts supply availability and reliability). Also, natural disasters such as wildfires, droughts, and floods are expected to increase in both frequency and intensity.

Responding to climate change generally takes two forms: mitigation and adaptation. Mitigation is taking steps to reduce the contribution to the causes of climate change by reducing greenhouse gas (GHG) emissions. Adaptation is the process of responding to the effects of climate change by modifying systems and behaviors to function in a warmer climate.

In the water sector, climate change mitigation is generally achieved by reducing energy use, increasing energy efficiency, and/or replacing fossil fuel-based energy sources with renewable energy sources where feasible. Because water requires energy to move, treat, use, and discharge, water conservation also results in energy conservation. Adaptation initiatives may include diversification of the City’s water supply portfolio and expansion of recycled water use.

3.6 SERVICE AREA POPULATION AND DEMOGRAPHICS

3.6.1 Service Area Population

As shown in Table 3-2, the City’s 2020 service area population is estimated to be 86,906. For its 2020 population, the City used the California Department of Finance (DOF) estimate for the population within City limits and a persons-per-connection estimate for the population served outside City limits. Population projections for 2025 through 2045 are based on the City’s updated General Plan, which projects 17,900 additional residents and 7,800 new housing units by 2040. As long-range demographic and economic trends are difficult to predict, the full 17,900 increase has been extended out to 2045 for this plan.
Chapter 3
System Description

Table 3-2. Population - Current and Projected
(DWR Table 3-1 Retail)

<table>
<thead>
<tr>
<th>Year</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
<th>2035</th>
<th>2040</th>
<th>2045 (opt)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population Served</td>
<td>86,906</td>
<td>90,486</td>
<td>94,066</td>
<td>97,646</td>
<td>101,226</td>
<td>104,806</td>
</tr>
</tbody>
</table>

NOTES: 2020 calculated using California Department of Finance E-5 Estimates (May 2020) and persons-per-connection estimates. 2025-2045 projections use incremental 5-year increases derived from the City of Napa General Plan.

3.6.2 Other Social, Economic, and Demographic Factors

The CWC now requires the inclusion of service area socioeconomic information as part of the system description in UWMPs. However, differences in household water use across sociodemographic groups in the City has not been studied, nor does the City differentiate water management based on sociodemographic factors. Therefore, the following social, economic, and demographic information is being provided to comply with the new regulation. The information was derived from the US Census Bureau’s profile of Napa for 2015-2019.

- The average number of people per household was 2.77.
- The median household income was $84,043, while 8.0 percent of all people and 9.8 percent of people under the age of 18 had an income in the past 12 months below the poverty level.
- The average unemployment rate was 4.4 percent.
- The owner-occupied housing unit rate was 58.3 percent, with a median home value of $617,000.
- The median gross rent was $1,700 per month.
- The median age was 38.8 years.
- Of people 25 years or older, 84.2 percent had earned at least a high school diploma or equivalent, and 34.2 percent had earned a bachelor’s degree or higher.
- Of the civilian noninstitutionalized population, 11.0 percent had a disability, and 7.0 percent did not have health insurance.
- Almost 93 percent of households had a computer, and 88.5 percent had a broadband internet subscription.
- By race/ethnicity, 77.2 percent of people were White, 0.7 percent were Black, 1.0 percent were American Indian or Alaska Native, 3.2 percent were Asian, 0.2 percent were Hawaiian Native or Pacific Islander, 14.2 percent were some other race, and 3.6 percent were two or more races. Approximately 40.5 percent were Hispanic or Latino (of any race).
- Almost 21 percent of residents were foreign born, and 36.3 percent of people five years and older spoke a language other than English at home.

1 United States Census Bureau, American Community Survey, 2015-2019 ACS 5-Year Data Profile for Napa, California.
3.7 LANDUSES WITHIN SERVICE AREA

Existing and future land uses within the City’s water service area are specified in its General Plan\(^2\), which the City Council adopted in 1998. Also called Envision Napa 2020, the City’s General Plan guides land use and development through the year 2020. The City is currently updating its General Plan to account for development and progress since 1998, including changes to demographic, technological, economic, and transportation conditions. The General Plan Update will guide the City through the year 2040.

3.7.1 Current and Projected Land Uses

Residential development is the predominant land use in the City. Commercial and institutional customers are primarily confined to the downtown area and shopping complexes along several major streets. The City also serves 28 agricultural accounts located outside City limits, primarily along the Conn Transmission Main. By agreement, these are interruptible services that can be cut off during extreme water supply shortages.

Over the past decade and beyond, infill development within the SOI has reflected both the City’s housing obligations and the expansion of tourist accommodations to support the Napa Valley wine industry. New hotels have been recently constructed or are planned or under construction, both downtown and in the Napa Valley Commons, a 240-acre office and light manufacturing complex located in the southern part of the City.

Although the City is in the process of updating its General Plan, the City expects certain land use goals defined in the current General Plan to continue through 2040. For example, the City values its small-town character and qualities, including stable and friendly neighborhoods, a mix of housing types and sizes, and a traditional central downtown.

One of the City’s future land use goals is to continue the revitalization of Downtown Napa. In 2012, the City Council adopted the Downtown Specific Plan, which aims to establish Downtown Napa as a social hub for residents and visitors. This includes reviving the area as a job center and promoting it as a location for mixed-use development.

3.7.2 Long-Range Land Use Planning

This section discusses long-range land use planning that may affect water management. Long-range planning includes years beyond the time horizon of this plan but should be noted for consideration in future UWMP updates.

ABAG and the Metropolitan Transportation Commission (MTC) are preparing Plan Bay Area 2050, which provides long-range plans to guide the growth of the nine-county region. Plan Bay Area 2050 is expected to be completed in 2021 and integrates strategies for transportation, housing, the environment, and the economy. Following the City’s General Plan Update (which is planned to be complete in 2022), the City

\(^2\) [https://www.cityofnapa.org/259/General-Plan](https://www.cityofnapa.org/259/General-Plan)
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will update the Housing Element of the General Plan to plan for future housing development in the City and address the Regional Housing Needs Allocation (RHNA) by ABAG.3

Both Plan Bay Area and RHNA address the amount and location of new housing development in the region, but they are different types of planning processes. Plan Bay Area is a policy-driven land use and transportation framework that results in various projections of growth for different areas (i.e, a “ground up” model). RHNA, on the other hand, is a process whereby a pre-determined number of housing units is distributed among local jurisdictions, based on factors intended to result in an equitable distribution of those units. Another key difference is that Plan Bay Area covers an approximately 30-year planning horizon (2020-2050), whereas RHNA covers an 8-year period from 2022-2030. Despite these differences, by law, RHNA must be “consistent” with Plan Bay Area. ABAG has determined RHNA and Plan Bay Area to be consistent because the amount of housing growth from the 8-year RHNA would not exceed the 30-year growth level at the county and sub-county geographies used in Plan Bay Area.

ABAG published the Draft RHNA Methodology Release in December 2020 to support Plan Bay Area 2050; this methodology has been used to develop “illustrative” RHNA allocations for each city and county in the region. Allocations will be finalized in 2021 through the remaining steps of the RHNA process. The proposed allocation for the City, which may be subject to revision and refinement, is 1,958 housing units.4 Although the City’s RHNA allocation may not affect its long-term water demand projections, it may accelerate the rate at which demand increases in the near term.

ABAG is expected to approve a Final Methodology and issue Draft Allocations in spring 2021. After issuing the Draft Allocations, there will be an appeal period, with ABAG issuing Final Allocations by the end of 2021.

3 ABAG receives its regional housing needs determination from the California State Department of Housing and Community Development (HCD). The nine-county San Francisco Bay Area has been allocated a total of 441,176 units, which reflects a 2.3-fold increase over the previous Housing Element cycle.

4 Association of Bay Area Governments, December 2020, Release of ABAG Draft RHNA Methodology and Final Subregional Shares, Appendix 3.
This chapter describes and quantifies the City’s past, current, and projected water use. Water demand projections are based on the projected growth from new development within the City’s water service area, along with anticipated water use efficiency improvements. Accurately tracking and reporting current water demands allows the City to properly analyze water use and better forecast future demands.

4.1 NON-POTABLE VERSUS POTABLE WATER USE

Potable water is water that is safe to drink and typically has had various levels of treatment and disinfection. The City produces potable water from local surface water supplies and water imported from the SWP via the NBA.

Non-potable water is not safe to drink and includes both recycled water and raw water. Recycled water is municipal wastewater that has been treated to a specified quality that allows for re-use. Napa Sanitation District (NapaSan) provides recycled water within the City’s water service area. Raw water is untreated water that is used in its natural state or with minimal treatment. The City does not deliver raw water to any customers in its service area.

4.2 WATER USE BY SECTOR

This section describes the City’s past, current, and projected water use by sector through the year 2045. The following classifications were used to analyze current consumption patterns among various types of customers. The City uses the same definitions for each sector as outlined in the DWR Guidebook:

- **Single-family residential**: A single-family dwelling unit. A lot with a free-standing building containing one dwelling unit that may include a detached secondary dwelling.
- **Multi-family residential**: Multiple dwelling units contained within one building or several buildings within one complex.
- **Commercial**: A water user that provides or distributes a product or service (CWC Section 10608.12(d)).
- **Industrial**: A water user that is primarily a manufacturer or processor of materials as defined by the North American Industry Classification System (NAICS) code sectors 31 to 33, inclusive, or an entity that is a water user primarily engaged in research and development (CWC Section 10608.12(h)).
- **Institutional (and Governmental)**: A water user dedicated to public service. This type of user includes, among other users, higher education institutions, schools, courts, churches, hospitals, government facilities, and nonprofit research institutions (CWC Section 10608.12(i)).
- **Landscape**: Water connections supplying water solely for landscape irrigation. Such landscapes may be associated with multi-family, commercial, industrial, or institutional/governmental sites but are considered a separate water use sector if the connection is solely for landscape irrigation.
- **Sales to other agencies**: Water sales made to another agency. Projected sales may be based on projected water demand provided by the receiving agency. Since there is inherent uncertainty in future demand projections, any projected sales reported in this plan are for planning purposes only and are not considered a commitment on the part of the seller.
Chapter 4
Water Use Characterization

- **Groundwater recharge**: The managed and intentional replenishment of natural groundwater supplies using man-made conveyances such as filtration basins or injection wells. This includes water used for groundwater banking or storage.
- **Saline water intrusion barriers**: Injection of water into a freshwater aquifer to prevent the intrusion of saltwater.
- **Agricultural**: Water used for commercial agricultural irrigation.
- **Other**: Any other water demand that is not adequately described by the water sectors defined above.
- **Distribution System Losses**: The difference between the actual volume of water treated and delivered into the distribution system and the actual metered consumption.

### 4.2.1 Historical Water Use

The City’s past urban water use among water use sectors is reported in Table 4-1. These are the same values reported in the City’s 2010 and 2015 UWMPs.

<table>
<thead>
<tr>
<th>Water Use Sector</th>
<th>Actual Volume, AFY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2010</td>
</tr>
<tr>
<td>Single Family Residential</td>
<td>6,626</td>
</tr>
<tr>
<td>Multi-Family Residential</td>
<td>1,961</td>
</tr>
<tr>
<td>Commercial</td>
<td>2,640</td>
</tr>
<tr>
<td>Institutional/Governmental</td>
<td>193</td>
</tr>
<tr>
<td>Landscape</td>
<td>643</td>
</tr>
<tr>
<td>Agricultural Irrigation (a)</td>
<td>155</td>
</tr>
<tr>
<td>Sales/Transfers/Exchanges to other agencies (b)</td>
<td>280</td>
</tr>
<tr>
<td>Other (c)</td>
<td>79</td>
</tr>
<tr>
<td>Losses (d)</td>
<td>1,300</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>13,877</strong></td>
</tr>
</tbody>
</table>

(a) Interruptible-Surplus Agricultural Water Agreements with customers located outside the City limits. Annual use from these customers fluctuates based on weather conditions and the vineyards’ use of private wells and other alternative supply sources.

(b) Sales to the City of St. Helena, the Town of Yountville, and the California Veterans Home. Sales are driven primarily by Agreement No. 9381 between the City and St. Helena requiring St. Helena to purchase a minimum of 600 AFY at agreed-upon rates. Sales to Yountville and California Veterans Home are rare and generally limited to emergencies.

(c) Includes authorized unmetered uses (e.g., water main flushing, fire protection).

(d) Includes apparent and real losses.
4.2.2 Current Water Use

The City’s actual potable water demands for the 2020 calendar year are reported in Table 4-2. Losses are estimated based on production and billing data. SWP water treated and wheeled to American Canyon and Calistoga is not included, as these supplies are owned by these agencies and do not impact the City’s supplies. There are no existing water uses for saline barriers or groundwater recharge within the City’s water service area.

Table 4-2. Demands for Potable and Non-Potable Water – Actual
(DWR Table 4-1 Retail)

<table>
<thead>
<tr>
<th>Use Type</th>
<th>2020 Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drop down list</td>
<td>Additional Description (as needed)</td>
</tr>
<tr>
<td>Single Family</td>
<td>Drinking Water</td>
</tr>
<tr>
<td>Multi-Family</td>
<td>Drinking Water</td>
</tr>
<tr>
<td>Commercial</td>
<td>Commercial businesses, industrial, schools, non-City institutional</td>
</tr>
<tr>
<td>Institutional/Governmental</td>
<td>City of Napa municipal accounts</td>
</tr>
<tr>
<td>Landscape</td>
<td>Dedicated irrigation meters</td>
</tr>
<tr>
<td>Agricultural irrigation</td>
<td>Interruptible-Surplus Agreements outside City limits</td>
</tr>
<tr>
<td>Sales/Transfers/Exchanges to other Suppliers</td>
<td>City of St. Helena, Town of Yountville, California Veterans Home</td>
</tr>
<tr>
<td>Other</td>
<td>Hydrant flushing, firefighting (estimate)</td>
</tr>
<tr>
<td>Losses</td>
<td>Real and Apparent Losses (estimate)</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
</tr>
</tbody>
</table>

$^1$ Recycled water demands are NOT reported in this table. Recycled water demands are reported in Table 6-4.

$^2$ Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.

NOTES: Volumes are in AF. The City is a drinking water provider only and does not distribute raw water to customers.
4.2.3 Projected Water Use

This section presents water demand projections for the City’s water service area in five-year increments through 2045 (i.e., a 25-year planning horizon) and annually from 2021 through 2025. Water demand projections in this plan are based on population growth within the City’s water service area and incorporate new development projects contained in the City’s General Plan, including Napa Pipe, a large mixed-use development along the Napa River with more than 900 residential units. The projections also account for water use efficiency improvements with a gradual decrease in per capita water demand to 125 gallons per capita per day (GPCD) by 2045.

4.2.3.1 25-Year Planning Horizon

Table 4-3 reports the City’s projected potable water demands through the year 2045, while Table 4-4 summarizes the City’s actual demands and projected water use along with recycled water demands reported in Chapter 6. As noted above, the City does not directly distribute recycled water. In 1998, the City entered into an agreement with NapaSan to solicit and provide recycled water within the City’s water service area.

To calculate total water use, the City employs a per capita water use methodology and the 5-year incremental population numbers from Table 3-2 of this plan. The relative shares among use types (e.g., single family) are derived from 2020 data and expected changes due to development over the planning horizon. From 2025 to 2045, overall GPCD is estimated to decline gradually from 132 down to 125, as water-efficient technologies, codes, and practices have their impact, particularly due to the SB 606 and AB 1668 long-term water conservation legislation described in Chapter 9 of this plan.
Table 4-3. Use for Potable and Non-Potable Water – Projected
(DWR Table 4-2 Retail)

<table>
<thead>
<tr>
<th>Use Type</th>
<th>Additional Description (as needed)</th>
<th>Projected Water Use² Report To the Extent that Records are Available</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>2025</td>
</tr>
<tr>
<td>Single Family</td>
<td></td>
<td>6,500</td>
</tr>
<tr>
<td>Multi-Family</td>
<td></td>
<td>1,900</td>
</tr>
<tr>
<td>Commercial</td>
<td>Commercial businesses, industrial, schools, non-City institutional</td>
<td>3,100</td>
</tr>
<tr>
<td>Institutional/Governmental</td>
<td>City of Napa municipal accounts</td>
<td>200</td>
</tr>
<tr>
<td>Landscape</td>
<td>Dedicated irrigation meters</td>
<td>900</td>
</tr>
<tr>
<td>Agricultural irrigation</td>
<td>Interruptible-Surplus Agreements outside City limits</td>
<td>200</td>
</tr>
<tr>
<td>Sales/Transfers/Exchanges to other Suppliers</td>
<td>City of St. Helena, Town of Yountville, California Veterans Home</td>
<td>600</td>
</tr>
<tr>
<td>Other</td>
<td>Hydrant flushing, firefighting (estimate)</td>
<td>30</td>
</tr>
<tr>
<td>Losses</td>
<td>Real and Apparent Losses</td>
<td>800</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>TOTAL</strong></td>
</tr>
</tbody>
</table>

¹ Recycled water demands are NOT reported in this table. Recycled water demands are reported in Table 6-4.

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

NOTES: Volumes are in AF. Single-family tracks with population growth from 2019-2020 average water use. Multi-family and commercial track higher due to anticipated development pattern.
Chapter 4
Water Use Characterization

Table 4-4. Total Gross Water Use (Potable and Non-Potable) (DWR Table 4-3 Retail)

<table>
<thead>
<tr>
<th></th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
<th>2035</th>
<th>2040</th>
<th>2045 (opt)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potable Water, Raw, Other Non-potable</td>
<td>14,092</td>
<td>14,230</td>
<td>14,655</td>
<td>15,005</td>
<td>15,330</td>
<td>15,555</td>
</tr>
<tr>
<td>Recycled Water Demand 1</td>
<td>568</td>
<td>835</td>
<td>1,095</td>
<td>1,095</td>
<td>1,095</td>
<td>1,095</td>
</tr>
<tr>
<td>Optional Deduction of Recycled Water Put Into Long-Term Storage 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL WATER USE</td>
<td>14,660</td>
<td>15,065</td>
<td>15,750</td>
<td>16,100</td>
<td>16,425</td>
<td>16,650</td>
</tr>
</tbody>
</table>

1 Recycled water demand fields will be blank until Table 6-4 is complete
2 Long term storage means water placed into groundwater or surface storage that is not removed from storage in the same year. Supplier may deduct recycled water placed in long-term storage from their reported demand. This value is manually entered into Table 4-3.

NOTES: Volumes are in AF. Recycled water demands are met by the Napa Sanitation District.

4.2.3.2 Characteristic Five-Year Water Use

CWC Section 10635(b) requires urban suppliers to include a five-year Drought Risk Assessment (DRA) in their 2020 UWMP. A key component of the DRA is estimating demands for the next five years (2021-2025) without drought conditions (i.e., unconstrained demand). Chapter 7 details the DRA, but the five-year demand projections are summarized in Table 4-5. These projections include recycled water and were developed by linearly interpolating between actual 2020 demands and 2025 demand projections presented in Table 4-3 (potable water) and Chapter 6 of this plan (recycled water).

Table 4-5. Projected Water Demands for Drought Risk Assessment

<table>
<thead>
<tr>
<th>Demand Type</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
<th>2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potable Water</td>
<td>14,120</td>
<td>14,147</td>
<td>14,175</td>
<td>14,202</td>
<td>14,230</td>
</tr>
<tr>
<td>Recycled Water</td>
<td>621</td>
<td>675</td>
<td>728</td>
<td>782</td>
<td>835</td>
</tr>
<tr>
<td>Total (Potable and Recycled Water)</td>
<td>14,741</td>
<td>14,822</td>
<td>14,903</td>
<td>14,984</td>
<td>15,065</td>
</tr>
</tbody>
</table>

(a) Demand projections for 2021-2024 are based on linear interpolation of actual 2020 demands presented in Table 4-2 and 2025 demand projections presented in Table 4-3 (potable water) and Chapter 6 of this plan (recycled water).
4.3 DISTRIBUTION SYSTEM WATER LOSSES

System losses are the difference between the actual volume of water delivered into the distribution system and the actual metered consumption. Such apparent and real losses are always present in a water system due to pipe leaks, unauthorized use, faulty meters, unmetered services (e.g., fire protection and street cleaning), and system flushing.

The City uses the American Water Works Association (AWWA) method to annually evaluate its distribution system losses. Since the City is currently working on its water audit for the 2020 calendar year, water losses for the 2020 calendar year were estimated based on production and billing data. In 2020, the City’s water losses were estimated to be approximately 809 AF, or 5.7 percent of its total water production. A copy of the City’s most recent (2019) Water Loss Audit worksheet is provided in Appendix F.

New regulations require retail water suppliers to include potable distribution system water losses for the preceding five years (to the extent records are available). Table 4-6 summarizes system losses for the previous five calendar years (2016 through 2020). At the time of preparation of this plan, DWR and the SWRCB are in the process of adopting water loss standards, which are discussed further in Chapter 9 of this plan.

<table>
<thead>
<tr>
<th>Reporting Period Start Date (mm/yyyy)</th>
<th>Volume of Water Loss 1,2</th>
</tr>
</thead>
<tbody>
<tr>
<td>01/2016</td>
<td>878</td>
</tr>
<tr>
<td>01/2017</td>
<td>1,147</td>
</tr>
<tr>
<td>01/2018</td>
<td>643</td>
</tr>
<tr>
<td>01/2019</td>
<td>1,034</td>
</tr>
<tr>
<td>01/2020</td>
<td>809</td>
</tr>
</tbody>
</table>

1 Taken from the field “Water Losses” (a combination of apparent losses and real losses) from the AWWA worksheet.
2 Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.

NOTES: Volumes are in AF. Since the 2020 water loss audit is in progress, 2020 losses are estimated based on supply and billing data.

4.4 ESTIMATING FUTURE WATER SAVINGS

Water savings from codes, standards, ordinances, or transportation and land use plans can decrease the water use for new and future customers. The City will benefit from some “passive savings” associated with an enhanced building code, the State Model Water Efficient Landscape Ordinance (MWELO), a local water offset program for new development (detailed in Chapter 9 of this plan), and supporting expanded use of recycled water (detailed in Chapter 6 of this plan). The enhanced building code and MWELO are described further below.
Chapter 4  
Water Use Characterization

To ensure that new construction is extremely water-efficient, the City has adopted local High-Performance Building Regulations that are more stringent than the California Green Building Standards Code (CALGreen). In Napa Municipal Code (NMC) Chapter 15.04, the City makes several of CALGreen’s voluntary provisions mandatory, including lower kitchen faucet flow rates, Energy Star appliance requirements, and lower maximum water pressure for residential projects. For non-residential projects, the City requires an additional 12 percent indoor savings, tighter specifications for clothes washers, dishwashers, ice makers, and food steamers, and the same lower maximum water pressure as residential projects. To minimize outdoor water use for new development, the City will continue to enforce the MWELO as it evolves.

Table 4-7 indicates that some passive water savings are included in the City’s projected future water demands. Lower income residential demands are also included in water use projections, as shown in Table 4-7 and detailed in Section 4.5.

<table>
<thead>
<tr>
<th>Are Future Water Savings Included in Projections?</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Refer to Appendix K of UWMP Guidebook)</td>
</tr>
<tr>
<td>Drop down list (y/n)</td>
</tr>
<tr>
<td>Are Lower Income Residential Demands Included In Projections?</td>
</tr>
<tr>
<td>Drop down list (y/n)</td>
</tr>
</tbody>
</table>

Yes

If "Yes" to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, or otherwise are utilized in demand projections are found.

Section 4.4

4.5 WATER USE FOR LOWER INCOME HOUSEHOLDS

SB 1087 (2006) requires that water providers develop written policies prioritizing development that includes affordable housing to low-income households (Government Code Section 65589.7). The projected water demands shown in Table 4-4 include water use for single family and multi-family residential housing needed for low-income households, as identified in the City’s Housing Element. A lower income household is defined as a household that has an income below 80 percent of the area median income, adjusted for family size. According to the City’s Housing Element (2015-2023), approximately 44 percent of the City’s households had incomes below 80 percent of the area median income.

Therefore, it is estimated that approximately 44 percent of the City’s residential water demands are attributed to low-income households. Table 4-8 presents the projected water demands for low income single-family and multi-family residential households.
Table 4-8. Projected Water Demands for Lower Income Households

<table>
<thead>
<tr>
<th>Water Use Sector</th>
<th>Water Demands for Low Income Households(a), AFY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2025</td>
</tr>
<tr>
<td>Single Family Residential</td>
<td>2,831</td>
</tr>
<tr>
<td>Multi-Family Residential</td>
<td>828</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>3,659</td>
</tr>
</tbody>
</table>

(a) Based on data from the City's Housing Element indicating that 43.56 percent of households in the City's water service area are classified as low income.

### 4.6 CLIMATE CHANGE CONSIDERATIONS

The City’s future water demand and use patterns may be impacted by climate change. Warmer temperatures are expected to increase landscaping and irrigation demand and lengthen the growing season. In addition, climate change may increase the frequency and intensity of wildfires, which would increase the fire industry’s water demands. Expanded use of recycled water could mitigate some of the effects of climate change on water demands.

The potential impacts of climate change on the City’s water supplies are described in Chapter 6.
CHAPTER 5
SB X7-7 Baselines, Targets, and 2020 Compliance

In November 2009, SB X7-7 was signed into law as part of a comprehensive water legislation package that addressed both urban and agricultural water conservation. The legislation set a goal of achieving a 20 percent statewide reduction in urban per capita water use by December 31, 2020 (i.e., “20 by 2020”). To meet the urban water use target requirement, each retail supplier was required to determine its baseline water use, as well as its target water use for the year 2020. Water use is measured in gallons per capita per day (GPCD).

This chapter provides a review of the methodology the City used to calculate its 2020 Urban Water Use Target (2020 Target), its baseline, and how the baseline was calculated. The City calculated baselines and targets on an individual reporting basis in accordance with SB X7-7 legislation requirements and DWR’s Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use (2016) (DWR’s Methodologies).

This chapter demonstrates that the City has just missed its 2020 Target by approximately four percent (i.e., 5 GPCD). In 2019, the City was on track to meet its 2020 Target, but pandemic-related increases in residential demand and a historically dry year in 2020 increased per capita water use above the 2020 Target. Compliance with the urban water use target requirement is presented in the SB X7-7 Compliance Form, which is included as Appendix G in this plan.

5.1 OVERVIEW AND BACKGROUND

The City’s compliance with SB X7-7 was first addressed in the City’s 2010 UWMP, in which the City determined its baseline per capita water use and established and adopted its urban water use targets for 2015 and 2020. Actual water use data and California DOF population and persons-per-household estimates were used to calculate GPCD water use.

SB X7-7 included a provision that an urban water supplier may update its 2020 Target in its 2015 UWMP and may use a different target method than was used in 2010. Also, the SB X7-7 methodologies developed by DWR in 2011 noted that water suppliers may revise population estimates for baseline years when the 2010 Census information became available.

The 2010 Census data was not finalized until 2012. In its 2015 UWMP, the City updated its population, baselines, and targets to reflect 2010 Census data. The City demonstrated that it successfully achieved its 2015 interim target and confirmed its 2020 Target in its 2015 UWMP.

5.2 GENERAL REQUIREMENTS FOR BASELINE AND TARGETS

SB X7-7 required each urban water retailer to determine its baseline daily per capita water use over a 10- or 15-year baseline period. The 10-year baseline period is defined as a continuous 10-year period ending no earlier than December 31, 2004 and no later than December 31, 2010. SB X7-7 also defined that urban water retailers that met at least 10 percent of their 2008 water demand using recycled water could extend the baseline GPCD calculation for a maximum of a continuous 15-year baseline period, ending no earlier than December 31, 2004 and no later than December 31, 2010. Since recycled water met less than 10 percent of the City’s water demand in 2008, the City’s baseline GPCD was calculated over a 10-year period. In its 2015 UWMP, the 10-year baseline period that the City selected was 1995 through 2004. This is the same 10-year baseline period reported in the City’s 2010 UWMP.
Chapter 5
SB X7-7 Baselines, Targets, and 2020 Compliance

SB X7-7 and DWR provided four different methods for calculation of an urban water retailer’s 2020 Target. Three of these methods are defined in CWC Section 10608.20(a)(1), and the fourth method was developed by DWR. The 2020 Target may be calculated using one of the following four methods:

- **Method 1**: 80 percent of the City’s base daily per capita water use;
- **Method 2**: Per capita daily water use estimated using the sum of performance standards applied to indoor residential use; landscaped area water use; and commercial, industrial, and institutional uses;
- **Method 3**: 95 percent of the applicable State hydrologic region target as stated in the State’s April 30, 2009, draft 20x2020 Water Conservation Plan; or
- **Method 4**: An approach that considers the water conservation potential from: 1) indoor residential savings, 2) metering savings, 3) commercial, industrial and institutional savings, and 4) landscape and water loss savings.

The City selected Method 1 to calculate its 2020 Target in its 2015 UWMP.

Daily average water use is divided by the service area population to obtain baseline and target GPCD. In 2015, the City adjusted its baseline and target GPCD to reflect its updated population estimates based on 2010 Census data results. To calculate the City’s compliance year GPCD and compare it to the 2020 Target, the 2020 service area population must be estimated.

Details of determining 2020 service area population and gross water use are provided in Sections 5.3 and 5.4, respectively. The City’s baselines and targets are summarized in Section 5.5, while the City’s 2020 compliance water use is provided in Section 5.6.

### 5.3 SERVICE AREA POPULATION

To calculate its compliance year GPCD, the City must determine the population that it served in 2020. When preparing this plan, the 2020 Census results were unavailable. However, the potential difference between the estimates provided here and the eventual final 2020 Census results is not believed to impact the fundamental conclusions of meeting SB X7-7 requirements.

Table 5-1 shows the methods used to estimate the City’s 2020 service area population. The City used the DOF data to estimate the 2020 population within City limits. DOF estimates are based on U.S. Census data, changes in the housing stock, estimated occupancy of housing units, and the number of persons per household. Outside City limits, the City estimated population using the number of dwelling units and the population density (i.e., persons per connection) for the unincorporated County. It should be noted that the resident population of Napa State Hospital is served by the City and is also added in separately to the City’s service area population as allowed by DWR’s Methodologies. The Napa State Hospital population is assumed constant at 1,175 across all years based on previous reporting from the Executive Director’s office at the Napa State Hospital. The City’s estimated 2020 water service area population is shown in Table 5-2.
Chapter 5
SB X7-7 Baselines, Targets, and 2020 Compliance

Table 5-1. Method for 2020 Population Estimate
(SB X7-7 Table 2)

<table>
<thead>
<tr>
<th>Method Used to Determine 2020 Population (may check more than one)</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔ 1. Department of Finance (DOF) or American Community Survey (ACS)</td>
</tr>
<tr>
<td>✔ 2. Persons-per-Connection Method</td>
</tr>
<tr>
<td>□ 3. DWR Population Tool</td>
</tr>
<tr>
<td>□ 4. Other</td>
</tr>
<tr>
<td>DWR recommends pre-review</td>
</tr>
</tbody>
</table>

Table 5-2. 2020 Service Area Population
(SB X7-7 Table 3)

<table>
<thead>
<tr>
<th>2020 Compliance Year Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
</tr>
</tbody>
</table>

5.4 GROSS WATER USE

Annual gross water use, as defined in CWC Section 10608.12(h), is the water that enters the City’s distribution system over a 12-month period (calendar year) with certain exclusions. This section discusses the City’s annual gross water use in 2020, in accordance with DWR’s Methodologies. Annual gross water use for the baseline periods are provided in the City’s 2015 UWMP.

The City’s gross water use equals the metered production at the Hennessey, Milliken, and Jamieson Canyon WTPs, less deliveries to other agencies (American Canyon, Yountville, St. Helena, Calistoga, and California Veterans Home) and Agricultural customers. In 2020, the City’s actual gross water use was 13,332 AF.

5.5 BASELINES AND TARGETS SUMMARY

Annual gross water use is divided by annual service area population to calculate the annual per capita water use for each year in the baseline periods. As discussed in Section 5.1, in its 2015 UWMP, the City updated its population data, adjusted its baseline, and confirmed its 2020 Target. The City’s 10-year base daily per capita water use is 166 GPCD. Using Method 1 for 2020 Target calculation as described in Section 5.2, the City’s confirmed 2020 compliance target is 132 GPCD. The City’s baseline and 2020 Target are summarized in Table 5-3.
5.6 2020 COMPLIANCE DAILY PER CAPITA WATER USE

Sections 5.3 and 5.4 present the City’s 2020 population and gross water use, respectively. The City calculated its actual daily per capita water use for the 2020 calendar year in accordance with DWR’s Methodologies. As shown in Table 5-4, urban per capita water use in 2020 was 137 GPCD, which is slightly above the 2020 Target of 132 GPCD. Therefore, the City has not met its 2020 final water use target.

Table 5-4. 2020 Compliance
(DWR Table 5-2 Retail)

<table>
<thead>
<tr>
<th>2020 GPCD</th>
<th>Did Supplier Achieve Targeted Reduction for 2020? Y/N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual 2020 GPCD*</td>
<td>137</td>
</tr>
<tr>
<td>2020 TOTAL Adjustments*</td>
<td>0</td>
</tr>
<tr>
<td>Adjusted 2020 GPCD* (Adjusted if applicable)</td>
<td>137</td>
</tr>
<tr>
<td>2020 Confirmed Target GPCD*</td>
<td>132</td>
</tr>
</tbody>
</table>

*All cells in this table should be populated manually from the supplier’s SBX7-7 2020 Compliance Form and reported in Gallons per Capita per Day (GPCD)

NOTES: While GPCD was just 128 in 2019, pandemic-related increases in residential demand and a historically dry calendar year 2020 resulted in an uptick to 137 GPCD, just exceeding the target.

Compared to baseline years, water use in the City’s service area has generally been reduced due to continued water conservation efforts by the City and its customers as shown by the per capita water use of 128 GPCD in 2019. However, the COVID-19 pandemic and dry conditions in 2020 increased per capita water use above the 2020 Target. The complete set of SB X7-7 compliance tables is included in Appendix G.
Chapter 5
SB X7-7 Baselines, Targets, and 2020 Compliance

DWR’s Methodologies and CWC Section 10608.24 allow agencies to adjust their gross water use in 2020 for unusual weather, land use changes, or extraordinary institutional water use. West Yost has contacted DWR regarding the weather normalization adjustment for the City, and DWR indicated that an extensive data collection effort would be required to proceed with the adjustment. Therefore, the City has elected to not proceed with the weather normalization adjustment at this time due to the additional effort required and uncertainty if the adjustment would actually reduce the City’s 2020 per capita water use. However, DWR staff noted that the City can still be eligible for a State loan or grant if it submits details on achieving its per capita reductions for DWR approval per CWC Section 10608.56(c).

5.7 REGIONAL ALLIANCE

The City has chosen to comply with the requirements of SB X7-7 on an individual basis. The City has elected not to participate in a regional alliance.
CHAPTER 6
Water Supply Characterization

This chapter describes and reviews the sources of water that may be available to the City. Projected future water supplies and the potential use of stormwater, desalinated water, and exchanges or transfers are also described in this chapter. The origin of the City’s water supply and its quantity, as well as the anticipated actions to meet future demands for each water source are discussed.

6.1 OVERVIEW

The City’s existing water supply sources include SWP imports (delivered through the NBA) and local surface water from Milliken Reservoir and Lake Hennessey. The NCFCWCD contracts directly with DWR for SWP supplies, and the City receives its annual SWP entitlement through this contract as a SWP subcontractor. Milliken Reservoir and Lake Hennessey are two local surface water reservoirs along tributaries of the Napa River. NapaSan also delivers recycled water to customers within the City’s service area.

All SWP water is delivered to the Edward I. Barwick Jamieson Canyon WTP, which was constructed in 1968. Milliken WTP was constructed in 1976 and treats water diverted from Milliken Creek that was released from Milliken Reservoir. Hennessey WTP began operation in 1981 and treats water from Lake Hennessey.

The following sections discuss the management and anticipated availability of the City’s water supplies under normal water years. The availability of the City’s water supplies under dry conditions, including a single dry year and a drought lasting five years, is detailed in Chapter 7 of this plan.

6.2 IMPORTED WATER: STATE WATER PROJECT

In 1966, 20 years after the addition of Lake Hennessey and more than 40 years after the creation of Milliken Reservoir, the City added a third source of supply by sub-contracting with NCFCWCD for imported surface water from the SWP. The NCFCWCD acts as the SWP contract administrator on behalf of municipalities in the County. The SWP diverts water from the Delta at the Barker Slough Pumping Plant east of Vacaville and conveys it approximately 21 miles via the NBA to Cordelia Forebay to serve contractors in Napa and Solano counties. From there, SWP water is pumped an additional six miles to the NBA Terminal Reservoirs (two 5 MG raw water storage tanks installed by DWR in 2008 to replace the original 7 MG tank built in 1968). Most of this water represents SWP entitlements for the City and Calistoga, both of which are treated at the Jamieson Canyon WTP. The remainder is American Canyon’s SWP entitlement, which is either conveyed to the adjacent American Canyon WTP or delivered as raw water to American Canyon irrigation customers.

The original 1966 agreement with NCFCWCD provided the City with gradually increasing annual allotments of SWP water, known as “Table A” entitlements, reaching a maximum of 12,500 AFY by 1990. The agreement was modified in 1982 following DWR efforts to encourage water conservation. The modified agreement reduced the City’s short-term Table A entitlement but increased its final overall entitlement to 18,800 AFY by 2021. In 2009, the SWP contract was amended to accelerate the entitlement schedule, with the City granted its full entitlement of 18,800 AFY beginning in 2010.

In 2000, the City obtained an additional 1,000 AFY of SWP water in a transfer agreement between NCFCWCD and the Kern County Water Agency (KCWA). Negotiated on behalf of five cities in the County, the agreement established terms for the permanent purchase of 4,025 AFY of SWP entitlement from KCWA. The City and St. Helena purchased the largest shares of this total (1,000 AFY each), while the
remaining agencies purchased lesser shares (ranging from 500 to 925 AFY). In 2006, the City purchased St. Helena’s 1,000 AFY KCWA entitlement. This SWP entitlement transfer agreement requires that St. Helena purchase a minimum of 600 AFY from the City.

In 2009, the City signed a water transfer agreement with Yountville to obtain Yountville’s total SWP Table A entitlement of 1,100 AFY and its NBA conveyance capacity. This agreement requires the City to sell up to 25 AFY to Yountville at retail rates for non-drought emergency and fire flow needs only. There is no minimum sales requirement as there is for the St. Helena agreement. These more recent SWP Table A purchases from other County agencies help provide adequate supplies for City customers during droughts.

Table 6-1 summarizes the City’s current Table A entitlements. These amounts represent the absolute maximum annual yields of Table A water. Actual deliveries are determined annually by DWR depending on hydrologic conditions. A full (i.e., 100 percent) Table A entitlement (21,900 AFY) would typically be available only during very wet years. In the Final State Water Project Delivery Capability Report 2019, DWR estimates that 58 percent of SWP contractor’s entitlements would be available for delivery in a normal (average) year. For the City, this equates to a normal year Table A delivery of 12,702 AFY. The current SWP contract is due to expire in 2035, with extension to 2085 anticipated.

<table>
<thead>
<tr>
<th>Source</th>
<th>Table A Entitlement, AFY</th>
</tr>
</thead>
<tbody>
<tr>
<td>NCFCWCD Agreement</td>
<td>18,800</td>
</tr>
<tr>
<td>KCWA Purchase (2000)</td>
<td>1,000</td>
</tr>
<tr>
<td>St. Helena Purchase (2006)</td>
<td>1,000</td>
</tr>
<tr>
<td>Yountville Purchase (2009)</td>
<td>1,100</td>
</tr>
<tr>
<td>Total</td>
<td>21,900</td>
</tr>
</tbody>
</table>

There are other types of SWP water (besides Table A entitlements) available to the City, including carryover, North of Delta (NOD) Allocation, Advanced Table A, Article 21, and Dry Year water. These categories are described in the following sections. However, because the following supplies from the SWP are either highly variable or not considered additional supply, they are not included as additional supply in the City’s supply projections for normal years.

### 6.2.1 Carryover Water

Carryover water is surplus water from a previous year’s entitlement that was stored for use in subsequent years. Stored in San Luis Reservoir, carryover water is considered the first water to be lost if San Luis Reservoir spills. The City typically uses carryover water in the first few months of the year and will continue to do so. Over the long term, this is not considered new supply but simply taking better advantage of existing SWP entitlements.

---

6.2.2 North of Delta Allocation

Following a 2013 legal settlement resolving Solano County Water Agency et. al. v. Department of Water Resources (“Area of Origin” settlement), the City’s actual Table A deliveries have been bolstered by the NOD Allocation. Each year, DWR calculates a separate SWP Table A allocation for NOD contractors in Solano, Napa, and Butte counties and Yuba City. The NOD Allocation is expected to be 5 to 25 percent higher than the standard Table A allocation each year, depending on hydrologic conditions and regulatory and operational constraints applicable to only the North Delta. It will not be impacted by restrictions that affect South of Delta exports. Starting in 2015, the NOD Allocation ranged from 5 percent to 15 percent higher than standard Table A in its first five years of implementation. No additional NOD increment was granted in 2020.

6.2.3 Advanced Table A Program

Another outcome from the Area of Origin settlement, the Advanced Table A Program, consists of additional SWP water that becomes available from a credit account once all available Table A supplies are exhausted, including any carried over from previous years. This credit account can provide the City with an additional 3,772 AFY when the standard (south of Delta) allocation is less than or equal to 20 percent. When the standard allocation is greater than 20 percent, the City may borrow up to 5,659 AFY. An additional amount may be requested if Solano County Water Agency and Yuba City do not use their maximum Advanced Table A Program entitlements. The cumulative balance in the Advanced Table A Program account must not exceed 21,900 AF, and it resets to zero whenever Lake Oroville spills.

6.2.4 Article 21 Water

Article 21 water is an interruptible surplus SWP supply. Article 21 of the SWP contract allows for the purchase of surplus water beyond Table A entitlements, provided that the contractor can take delivery during the wet season when excess water is available in the Delta without affecting Table A deliveries to other contractors. NCFCWCD uses an annual delivery schedule that maximizes the City’s use of Article 21 water prior to consumption of carryover water.

6.2.5 Dry Year Water

In dry years, DWR decides whether to operate a Dry Year Water Purchase Program based on Article 56 of the SWP contract. Also pursuant to Article 56, a “Turn-Back Pool” may be established with water from agencies not using their full Table A entitlement, which can be distributed to other agencies requesting additional supplies. NCFCWCD has purchased water through the program and will continue to do so, but it is not considered a reliable supply source due to its variability. In 2008, with local reservoir levels low and an initial SWP allocation of just 25 percent, the City participated in the Yuba Accord Dry Year Water Purchase Program to supplement available supplies and reduce the need for mandatory drought restrictions for its customers.
Chapter 6
Water Supply Characterization

6.3 LOCAL SURFACE WATER

This section discusses the City’s two local surface water supply sources: Milliken Reservoir and Lake Hennessey.

6.3.1 Milliken Reservoir

The City began offering water service in 1923 after purchasing the privately-owned Municipal Water Works. This purchase coincided with the construction of Milliken Dam, which allowed storage of water from Milliken Creek, a tributary of the Napa River. The resulting Milliken Reservoir served as the City’s sole water supply source until 1946, when Conn Dam was constructed (creating Lake Hennessey). Located approximately five miles northeast of the City, Milliken Reservoir is now only a seasonal source of supply used in the high-demand summer period when turbidity levels in the reservoir can be effectively treated at the Milliken WTP.

Raw water is currently not taken directly from Milliken Reservoir but is instead released into Milliken Creek by a manually operated valve system located at the base of the Milliken Dam. About two miles downstream, a diversion dam directs water into a 16-inch diameter above ground raw water pipeline, which runs approximately one mile down to the Milliken WTP.

The City’s water rights to Milliken Reservoir, which is fed by an approximately 6,000-acre watershed, are secured through a license with the SWRCB that authorizes the City to divert and store up to 2,350 AFY from Milliken Creek for beneficial use. Milliken Reservoir has an approximate storage capacity of 1,390 AF, much smaller than its average annual inflow of 3,656 AFY.\(^6\) The storage capacity of Milliken Reservoir is limited to 1,390 AF due to seismic stability concerns from the State Division of Safety of Dams that necessitated lowering the reservoir storage elevation. Similar to the 2015 UWMP, this plan assumes an average yield for Milliken Reservoir of 700 AFY. The firm yield of Milliken Reservoir is 400 AFY.

It should be noted that the City also holds a permit for direct diversion of 7.74 cubic feet per second (cfs) from Milliken Creek for the period of November through March. However, due to limitations at the Milliken WTP this water is unable to be treated in the winter due to high turbidity levels.

6.3.2 Lake Hennessey

Located approximately 13 miles north of the City, Lake Hennessey is the major local water supply source for the City’s water system. By the 1940s, subdivision development was taxing the Milliken Reservoir, which had served as the City’s single water supply source for more than two decades. To provide additional water supplies, the City constructed Conn Dam, allowing storage of water from Conn Creek, an up-valley tributary of the Napa River. The resulting reservoir, Lake Hennessey, was formed in 1946 and became the City’s primary water supply source until the late 1960s, when it was supplemented by SWP entitlements.

The City’s water rights to Lake Hennessey are secured through a permit with the SWRCB. The permit authorizes the City to divert and store up to 30,500 AFY from Conn Creek for beneficial use. Lake Hennessey’s tributary watershed area is approximately 35,000 acres, and it has an approximate storage capacity of 6,900 AF.

\(^6\) Source: 2050 Napa Valley Water Resources Study.
storage capacity of 31,000 AF. Storage capacity represents the static volume of the reservoir at spillway elevation assuming no inflow or outflow and is indicative of the absolute maximum yield in a wet year. While the average inflow to Lake Hennessey is 19,692 AFY, its average yield is 17,500 AFY. The reliable and firm yields of Lake Hennessey are 4,800 AFY and 2,000 AFY, respectively.

### 6.4 GROUNDWATER

As confirmed in Table 6-2, the City does not pump groundwater for municipal supply. The 2050 Napa Valley Water Resources Study (2050 Study), a county-wide water supply planning effort completed in 2005, identified several potential groundwater options that the City may consider in the future. Potential groundwater projects include storing excess SWP entitlements in the groundwater basin along the NBA in Solano County and using new or existing wells in the local groundwater basin for dry year or emergency supplies or as non-potable water for schools and parks. While the City may consider these options, groundwater is not considered part of the City’s water supply portfolio for the 2020 UWMP planning period.

#### Table 6-2. Groundwater Volume Pumped (DWR Table 6-1 Retail)

<table>
<thead>
<tr>
<th>Groundwater Type</th>
<th>Location or Basin Name</th>
<th>2016*</th>
<th>2017*</th>
<th>2018*</th>
<th>2019*</th>
<th>2020*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supplier does not pump groundwater. The supplier will not complete the table below.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All or part of the groundwater described below is desalinated.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

### 6.5 STORMWATER

The City does not currently use stormwater as a water supply source and does not have any specific plans to use stormwater to increase its water supplies. While some agencies use stormwater for groundwater recharge, this would not significantly increase the City’s water supply since the City currently does not use groundwater as a municipal supply source. Future water supply studies will review all potential water supplies, with a focus on local resources and consideration of long-term policies such as the California Water Action Plan.

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7 Source: 2050 Napa Valley Water Resources Study.
Chapter 6
Water Supply Characterization

6.6 WASTEWATER AND RECYCLED WATER

Recycled water is municipal wastewater that has been treated to a specified quality, allowing it to be used beneficially. This non-potable water supply is typically distributed to large irrigation users such as golf courses, vineyards, parks, and commercial businesses.

The City is a drinking water supplier only and does not produce or distribute recycled water. Within the City’s service area, recycled water treatment and distribution is managed by NapaSan. Wastewater from the City and surrounding unincorporated areas is treated by NapaSan at their Soscol Water Recycling Facility (WRF), and recycled water produced there is sold to customers located both inside and outside the City’s service area.

6.6.1 Recycled Water Coordination

In 1998, the City and NapaSan entered into an agreement that permits NapaSan to solicit and provide recycled water service within a specified portion of the City’s service area. A copy of the agreement is attached as Appendix H. The agreement originally defined the recycled service area as lands east of the Napa River, south of Imola Avenue, west of Highway 221, and north of American Canyon, along with other specified areas. Generally, this means NapaSan recycled water can be made available to Napa State Hospital, Stanly Ranch, Napa Valley Commons, South Napa Marketplace, and other nearby sites. A more recent amendment has enabled additional sites such as Tulocay Cemetery to receive recycled water. The agreement includes a “make whole” calculation to ensure that City’s water revenues are not adversely affected by existing customers converting to recycled water.

The first City customer to switch to NapaSan recycled water for irrigation was the Napa Municipal Golf Course in 2003. As of 2020, an additional 17 customers have followed, saving hundreds of AFY in potable water. The City recognizes the value of recycled water as a locally produced, reliable supply source and continues to work with NapaSan to further expand its use to meet non-potable demands within the City’s service area. When a City customer switches to NapaSan recycled water for their irrigation needs, demands on the City’s water system are reduced, which helps the City meet its conservation goals.

6.6.2 Wastewater Collection, Treatment, and Disposal

NapaSan collects, treats, and disposes of wastewater generated within the City’s service area. The NapaSan wastewater and City drinking water customer populations have nearly complete overlap. NapaSan’s Soscol WRF is located at the most southern part of the Napa Valley and discharges treated wastewater to the Napa River.

6.6.2.1 Wastewater Collected Within Service Area

As shown in Table 6-3, the Soscol WRF received 6,683 AF of wastewater in 2020 from the City’s service area.
### 6.6.2.2 Wastewater Treatment and Discharge Within Service Area

The Soscol WRF is a secondary/tertiary treatment facility that treats a mixture of domestic and industrial wastewater and has a dry weather design capacity of 15.4 MGD. From November through April (wet season), treated wastewater is discharged to the Napa River. From May through October (dry season), wastewater is treated and used as recycled water. Currently, the Soscol WRF produces about 3,000 AFY of recycled water that meets the Title 22 California Code of Regulations (Title 22) standards for disinfected tertiary water.

Prior to entering the recycling process, preliminary and primary treatment are used to remove solids and organic matter from the wastewater. For secondary treatment, a portion of the flow enters an activated sludge system consisting of two aeration basins, two secondary clarifiers, four return activated sludge pumps, and two waste activated sludge pumps. Large oxidation ponds provide both storage and secondary treatment for the portion of flow that bypasses the activated sludge system. The ponds promote the growth of algae to oxidize the organic matter in the wastewater.

The recycled water treatment process at the Soscol WRF begins with the withdrawal of the effluent from the oxidation ponds and consists of:

- **Secondary Effluent Pump Station**: Effluent from the activated sludge system secondary clarifiers and clarified oxidation pond effluent both flow to the secondary effluent pump station where they are lifted to the filters. Three 100-horsepower (hp) pumps, each capable of pumping 10 MGD, are used.

- **Continuous Backwash Filters**: Prior to filtration, more polymers are added, and the water passes through three-stage flocculation. This step conditions the remaining solids so they can then be readily removed through filtration. In the filters, water passes through about six feet of sand, removing the remaining algae solids. To keep the filters clean, air is used to continuously lift, agitate, and wash the sand.

#### Table 6-3. Wastewater Collected Within Service Area in 2020 (DWR Table 6-2 Retail)

<table>
<thead>
<tr>
<th>Wastewater Collection</th>
<th>Recipient of Collected Wastewater</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of Wastewater Collection Agency</td>
<td>Wastewater Volume Metered or Estimated? Drop Down List</td>
</tr>
<tr>
<td>Napa Sanitation District</td>
<td>Metered</td>
</tr>
</tbody>
</table>

**Total Wastewater Collected from Service Area in 2020:** 6,683

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

**NOTES**: Volumes are in AF. Plant influent data obtained from NapaSan staff in May 2021.
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- **Disinfectant Rapid Mixing**: Sodium hypochlorite disinfectant is added to the filtered water to destroy harmful bacteria. This liquid chemical is a stronger version of common laundry bleach. Rapid mixing ensures that the chemical is fully and efficiently blended with the filtered water.

- **Chlorine Contact Basins**: The chlorinated water sits for two hours in chlorine contact basins to ensure maximum bacteria reduction. Because chlorine can be harmful to plants and aquatic life, residual chlorine can be reduced or removed by adding sodium bisulfite for dechlorination prior to discharge in the Napa River.

- **Recycled Water Storage Reservoirs**: Tertiary-treated recycled water is stored in reservoirs for a short time prior to distribution.

- **Recycled Water Pump Station**: The recycled water pump station delivers the water to customers throughout the southern portions of Napa Valley. The pump station uses three 600-hp pumps to distribute the water at pressures of up to 150 pounds per square inch (psi).

Figure 6-1 shows NapaSan’s existing recycled water system pipelines, including the most recently completed extensions to the Los Carneros Water District (LCWD) and Milliken-Sarco-Tulocay (MST) areas.

Table 6-4 presents the volumes of wastewater treated, discharged, and recycled at the Soscol WRF in 2020. While 3,607 AF of wastewater was treated to a secondary level, only about 69 percent of that (2,487 AF) was discharged to the Napa River due to evaporative loss from oxidation ponds. In Table 6-4, tertiary-treated and recycled water volumes include only wastewater generated from the City’s service area. Approximately 18 percent (568 AF) of the total tertiary-treated water generated from the City’s service area was recycled within the City’s service area. The remaining 82 percent (2,508 AF) was delivered outside of the City’s service area to vineyards, ranchlands, golf courses, and commercial sites located primarily south and east of the City.

Table 6-4. Wastewater Treatment and Discharge Within Service Area in 2020 (DWR Table 6-3 Retail)

<table>
<thead>
<tr>
<th>Wastewater Treatment Plant Name</th>
<th>Discharge Location Name or Identifier</th>
<th>Discharge Location Description</th>
<th>Method of Disposal</th>
<th>Does This Plant Treat Wastewater Generated Outside the Service Area?</th>
<th>Treatment Level</th>
<th>2020 volumes ¹</th>
<th>Instream Flow Permit Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soscol Water Recycling Facility</td>
<td>Napa River</td>
<td>38° 14’09” N 122° 17’10” W</td>
<td>River or creek outfall</td>
<td>Yes</td>
<td>Secondary, Disinfected - 23</td>
<td>3,607 2,487 0 0</td>
<td>0</td>
</tr>
<tr>
<td>Soscol Water Recycling Facility</td>
<td>N/A</td>
<td>Other</td>
<td>Yes</td>
<td>Tertiary</td>
<td></td>
<td>3,076 0 568 2,508</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6,683 2,487 568 2,508</td>
<td>0</td>
</tr>
</tbody>
</table>

¹ Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.

² If the Wastewater Discharge ID Number is not available to the UWMP preparer, access the SWRCB CIWQS regulated facility website at https://ciwqs.waterboards.ca.gov/ciwqs/readOnly/CiwqsReportServlet?inCommand=reset&reportName=RegulatedFacility

NOTES: Volumes are in AF. Total wastewater treated and recycled water breakdown obtained from NapaSan staff in May 2021. Difference between secondary treated and discharged is evaporative loss from oxidation ponds. Table does include recycled volumes that were outside of the City’s drinking water service area. As shown, 568 AF was recycled within the City’s service area in 2020. Future projections for that category are shown in DWR Table 6-4 R.
Figure 6-1. Napa Sanitation District Recycled Water Pipelines

Source: Napa Sanitation District
6.6.3 Potential, Current, and Projected Recycled Water Uses

As shown in Table 6-4, 568 AF of tertiary recycled water produced at NapaSan’s Soscol WRF was delivered to customers within the City’s service area in 2020. This volume was purchased by 18 customers that would otherwise use City drinking water to irrigate their landscapes and vineyards. Along with the Napa Golf Course at Kennedy Park, other prominent recycled water users include Napa Valley Memorial Park Cemetery, Napa Valley College, Meritage Resort, and the Napa Valley Commons business park. Extension of NapaSan’s recycled water system to the MST area brought recycled water to the Napa State Hospital, the City’s largest potable water customer. However, the hospital must complete a major internal irrigation system renovation before it can use recycled water.

Current and projected recycled water uses within the City’s service area are shown in Table 6-5 and consist of agricultural, landscape, and golf course irrigation. These uses are consistent with NapaSan’s 2011 Recycled Water Policy (NapaSan Board of Directors Resolution No. 11-004, included as Appendix I) and subsequent recycled water system pipeline extensions. Recycled water use is projected to increase to approximately 1,100 AFY in 2030, with most of the growth occurring in landscape irrigation.

Table 6-6 compares the 2020 projected estimates of recycled water use from the City’s 2015 UWMP to the actual 2020 recycled water use. Actual recycled water use in 2020 was below projections from the City’s 2015 UWMP due to lower use at Stanly Ranch Vineyards and slower than expected conversions of commercial landscapes.

Table 6-5. Recycled Water Direct Beneficial Uses Within Service Area (DWR Table 6-4 Retail)

<table>
<thead>
<tr>
<th>Beneficial Use Type</th>
<th>Potential Beneficial Uses of Recycled Water (Quantity)</th>
<th>Amount of Potential Uses of Recycled Water (Quantity) Include volume units¹</th>
<th>General Description of 2020 Uses</th>
<th>Level of Treatment</th>
<th>2020²</th>
<th>2025³</th>
<th>2030⁴</th>
<th>2035⁵</th>
<th>2040⁶</th>
<th>2045⁷ (opt)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural irrigation</td>
<td>Vineyard Irrigation 150 AF</td>
<td>Vineyard Irrigation</td>
<td>Tertiary</td>
<td>62 / 100</td>
<td>120</td>
<td>120</td>
<td>120</td>
<td>120</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>Golf course irrigation</td>
<td>Napa Municipal Golf Course at Kennedy Park 250 AF</td>
<td>Napa Municipal Golf Course at Kennedy Park</td>
<td>Tertiary</td>
<td>241 / 220</td>
<td>220</td>
<td>220</td>
<td>220</td>
<td>220</td>
<td>220</td>
<td></td>
</tr>
<tr>
<td>Commercial use</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industrial use</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geothermal and other energy production</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seawater intrusion barrier</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recreational impoundment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetlands or wildlife habitat</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Groundwater recharge (PFR)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reservoir water augmentation (IPR)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct potable reuse</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (Description Required)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Total: 568</th>
<th>835</th>
<th>1,095</th>
<th>1,095</th>
<th>1,095</th>
</tr>
</thead>
</table>

¹ Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.

² Values in 2020 are per Table 6-4 Retail.

³ Values in 2025 are per Table 6-4 Retail.

⁴ Values in 2030 are per Table 6-4 Retail.

⁵ Values in 2035 are per Table 6-4 Retail.

⁶ Values in 2040 are per Table 6-4 Retail.

⁷ Values in 2045 (opt) are per Table 6-4 Retail.

NOTES: Volumes are in AF. While no additional golf courses exist in the City service area and that recycled use type will remain steady, vineyard irrigation and commercial/institutional landscaping uses are projected to expand based on NapaSan policy.
Table 6-6. 2015 UWMP Recycled Water Use Projection Compared to 2020 Actual (DWR Table 6-5 Retail)

<table>
<thead>
<tr>
<th>Beneficial Use Type</th>
<th>2015 Projection for 2020</th>
<th>2020 Actual Use¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural irrigation</td>
<td>100</td>
<td>62</td>
</tr>
<tr>
<td>Landscape irrigation (exc golf courses)</td>
<td>350</td>
<td>265</td>
</tr>
<tr>
<td>Golf course irrigation</td>
<td>200</td>
<td>241</td>
</tr>
<tr>
<td>Commercial use</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industrial use</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geothermal and other energy production</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seawater intrusion barrier</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recreational impoundment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetlands or wildlife habitat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Groundwater recharge (IPR)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reservoir water augmentation (IPR)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct potable reuse</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (Description Required)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>650</strong></td>
<td><strong>568</strong></td>
</tr>
</tbody>
</table>

¹ Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.

NOTE: Volumes are in AF. 2015 UWMP overestimated agricultural usage for Stanly Ranch Vineyards and the rate at which commercial landscapes in South Napa would be switched to recycled water.

### 6.6.4 Actions to Encourage and Optimize Future Recycled Water Use

The City’s primary method for expanding future recycled water use is to add new users. As shown in Table 6-7, significant opportunities remain for infill connections along the existing recycled water distribution system. The City will continue to work closely with NapaSan to expand recycled water use within the City’s service area.
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Table 6-7. Methods to Expand Future Recycled Water Use (DWR Table 6-6 Retail)

<table>
<thead>
<tr>
<th>Name of Action</th>
<th>Description</th>
<th>Planned Implementation Year</th>
<th>Expected Increase in Recycled Water Use *</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Napa Infill</td>
<td>Connect commercial landscapes in Imola Avenue development</td>
<td>2022</td>
<td>105</td>
</tr>
<tr>
<td>Vineyards in Stanly Lane area</td>
<td>Connect remaining unconnected vineyards in southwest Napa</td>
<td>2022</td>
<td>40</td>
</tr>
<tr>
<td>Stanly Ranch Resort</td>
<td>Connect landscape and vineyard irrigation at new resort and housing complex</td>
<td>2023</td>
<td>60</td>
</tr>
<tr>
<td>Gasser Infill</td>
<td>Connect landscape irrigation for Gasser Foundation land development projects</td>
<td>2024</td>
<td>105</td>
</tr>
<tr>
<td>Napa Pipe</td>
<td>Full connection of all common area landscaping in Napa Pipe project</td>
<td>2026</td>
<td>130</td>
</tr>
<tr>
<td>Napa State Hospital</td>
<td>Full connection for entire facility landscape irrigation</td>
<td>2027</td>
<td>110</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>550</strong></td>
</tr>
</tbody>
</table>

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

NOTES: Volumes are in AF. Table represents actions within City of Napa drinking water service area only.

6.7 DESALINATED WATER

The City does not currently have a desalination program, nor does it plan to implement one.

6.8 EXCHANGES AND TRANSFERS

The City has considered and will continue to consider opportunities for water exchanges or transfers with water right holders if opportunities arise with acceptable terms and conditions. These potential opportunities could include, but would not be limited to, one-time transfers from farmers who choose to fallow fields and auction off their water. The 2050 Study recommended that County agencies take advantage of NBA conveyance capacity by importing dry year supplies from outside the County. Known as the “Fill the Pipe” option, this would require negotiation of a long-term transfer agreement for reliable dry year supplies from agencies such as Butte County, the City of Vallejo, and Sacramento River users.

In late 2016, with extra SWP carryover water available, the City was able to make an exchange to provide 7,000 AF to the Santa Clara Valley Water District (now known as Valley Water), receiving funds for a Water Rate Stabilization Reserve Account and favorable terms, including the eventual return of 3,500 AF from Valley Water. Similar arrangements were made in 2018 and 2020 with Kern County Water Agency and Zone 7 Water Agency.
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6.9 FUTURE WATER PROJECTS

This section discusses the City’s potential future water supply projects, including WTP improvements and options to increase future water supplies. Since efforts to evaluate these projects are preliminary, their supplies are not quantified nor are they included in Table 6-8. As future water projects are finalized or agreements made, their supply contributions will be quantified in future UWMPs.

Table 6-8. Expected Future Water Supply Projects or Programs (DWR Table 6-7 Retail)

<table>
<thead>
<tr>
<th>Information</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Submittal Table 6-7 Retail: Expected Future Water Supply Projects or Programs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No expected future water supply projects or programs that provide a quantifiable increase to the agency’s water supply. Supplier will not complete the table below.</td>
</tr>
<tr>
<td></td>
<td>Some or all of the supplier’s future water supply projects or programs are not compatible with this table and are described in a narrative format.</td>
</tr>
<tr>
<td>6-13 and 6-14</td>
<td>Provide page location of narrative in the UWMP</td>
</tr>
<tr>
<td>Name of Future Projects or Programs</td>
<td></td>
</tr>
<tr>
<td>Joint Project with other suppliers?</td>
<td></td>
</tr>
<tr>
<td>Description (if needed)</td>
<td></td>
</tr>
<tr>
<td>Planned Implementation Year</td>
<td></td>
</tr>
<tr>
<td>Planned for Use in Year Type</td>
<td></td>
</tr>
<tr>
<td>Expected Increase in Water Supply to Supplier*</td>
<td></td>
</tr>
</tbody>
</table>

*Units of measure [AF, CCF, MG] must remain consistent throughout the UWMP as reported in Table 2-3. |

NOTES:

6.9.1 Treatment Plant Projects

Improvements to the Jamieson Canyon WTP were completed in 2011, increasing the treatment capacity from 12 MGD to approximately 20 MGD. The ultimate capacity of the Jamieson Canyon WTP is expected to reach 24 MGD, which will help the City treat all of its entitled water supplies from the SWP. While not actually creating new supply, the proposed treatment capacity expansion essentially has the same effect, allowing the City to maximize supplies to which it is entitled. By using more water from the SWP in select years, the City can preserve its local reservoirs for dry years to provide additional reliability.

The City may consider modifications to the Milliken WTP so that Milliken Reservoir could be used as a year-round supply. The City continues to evaluate the cost of other water supplies relative to the cost and capabilities of packaged treatment plants to upgrade Milliken WTP.

Improvements to the Hennessey WTP are slated in the 2022 Capital Improvement Master Plan. Planned improvements will remove treatment production limitations implemented to avoid seasonal taste and odor challenges. Improved operational flexibility allows Hennessey WTP to provide high-quality, aesthetically pleasing water for longer periods throughout the year and use water supply during spill conditions, which has historically been avoided for aesthetic reasons. As future projects related to local dam, spillway, and bypass facilities are assessed, the City will consider a range of options that will optimize seasonal flows and increase storage quantities.
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6.9.2 Garden Bar Water and Power Project

The City participated in a feasibility study for a new reservoir under consideration by the South Sutter Water District, the Garden Bar Water and Power Project, which would construct a new dam and reservoir on the Bear River. If approved and implemented, the project would provide substantial water supply and hydroelectric power generation benefits. This project has been the subject of several feasibility studies since the 1970s. The City could potentially purchase a share of this non-SWP water supply, which would supplement supplies in years of low SWP allocations. However, this project has been on hold since 2017.

6.9.3 Sites Reservoir

The City is involved in the Napa Valley Drought Contingency Plan (DCP) currently being prepared for approval by the U.S. Bureau of Reclamation. This effort, in cooperation with other local agencies, may lead to financing opportunities for supply enhancement. One of the potential projects being evaluated include purchasing storage at the Sites Reservoir in the Sacramento Valley, with deliveries to the City via the NBA. Sites Reservoir will be an off-stream reservoir capturing excess water from major storms and storing it for use during dry years. It is targeted for completion by 2030, with financing set by 2023 or 2024.

6.9.4 Advanced Water Purification

Another project in the Napa Valley DCP is a feasibility study and potential pilot facility that would take treated effluent from the Soscol WRF and purify it through a multi-barrier treatment process to determine an approach for full-scale implementation. Ultimately, this could lead to direct potable reuse of thousands of AF during winter at the Jamieson Canyon WTP in lieu of SWP supplies. It is anticipated that direct potable reuse regulations will be approved by the State of California in late 2023.

6.10 SUMMARY OF EXISTING AND PLANNED SOURCES OF WATER

Table 6-9 shows the actual sources and volumes used to meet City water demands in 2020, including recycled water supplied within the City’s service area by NapaSan. Most of the City’s water supply in 2020 came from the SWP, with the remainder coming from Lake Hennessey. Milliken Reservoir was not used for water supply in 2020 due to damage to the raw water supply line caused by the 2017 Atlas Fire.
Projected supplies that are reasonably available in normal water years through 2045 are shown in Table 6-10. The City’s water supply sources are projected to have a combined 30,902 AFY available in 2025. Climate change impacts are assumed to reduce water supplies by 10 percent (to 27,812 AFY) beginning in 2035. NapaSan’s recycled water supplies are expected to match growing demands and increase from 835 AFY in 2025 to 1,095 AFY in 2030 and beyond.

### Table 6-10. Water Supplies – Projected (DWR Table 6-9 Retail)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply from Storage</td>
<td>17,500 AFY</td>
<td>17,500 AFY</td>
<td>15,750 AFY</td>
<td>15,750 AFY</td>
<td>15,750 AFY</td>
</tr>
<tr>
<td>Lake Hennessey</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supply from Storage</td>
<td>700 AFY</td>
<td>700 AFY</td>
<td>630 AFY</td>
<td>630 AFY</td>
<td>630 AFY</td>
</tr>
<tr>
<td>Milliken Reservoir</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purchased or Imported Water</td>
<td>12,702 AFY</td>
<td>12,702 AFY</td>
<td>11,432 AFY</td>
<td>11,432 AFY</td>
<td>11,432 AFY</td>
</tr>
<tr>
<td>State Water Project</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recycled Water</td>
<td>835 AFY</td>
<td>1,095 AFY</td>
<td>1,095 AFY</td>
<td>1,095 AFY</td>
<td>1,095 AFY</td>
</tr>
<tr>
<td>Napa Sanitation District</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>31,737 AFY</td>
<td>31,997 AFY</td>
<td>28,907 AFY</td>
<td>28,907 AFY</td>
<td>28,907 AFY</td>
</tr>
</tbody>
</table>

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

NOTES: Volumes are in AF and are estimates based on a normal (average) water year. State Water Project supplies are 58 percent of Table A, with no Carryover, Article 21, or North of Delta allocation assumed (derived from The Final State Water Project Delivery Capability Report 2019, DWR, August 26, 2020). 2035 and beyond incorporate a 10 percent reduction in average supplies due to assumed climate change impacts. Recycled water volumes are from DWR Table 6-4 R.
6.11 CLIMATE CHANGE IMPACTS

There are concerns that a warming trend that occurred during the latter part of the 20th century will likely continue through the 21st century. Numerous studies have been conducted to evaluate the potential impacts of climate change to water resources. Based on these studies, climate change could impact California’s water resources in the following ways:

- Reductions in the average annual snowpack due to a rise in the snowline and a shallower snowpack at low and medium elevations and a shift in snowmelt runoff to earlier in the year
- Changes in the timing, intensity, and variability of precipitation, and an increased amount of precipitation falling as rain instead of as snow
- Long-term changes in watershed vegetation and increased incidence of wildfires that could affect water quality
- Sea level rise and an increase in saltwater intrusion
- Increased water temperatures with accompanying potential adverse effects on some fisheries and water quality
- Increased evaporation and irrigation need
- Changes in urban and agricultural water demand

Since the SWP is a significant source of the City’s water supplies, climate change impacts on the Delta are especially concerning. The potential impacts of climate change to water supply operations in the Delta are provided below:

- The operation of storage reservoirs could be impacted by shifting runoff and snowmelt patterns.
  - Requiring a greater volume of flood control storage
  - Making it more difficult to refill reservoir flood control storage during late spring or early summer
  - Potentially reducing the volume of surface water available for use during the summer/fall season
- Levee breaks, either as a result of the impacts of rising sea levels, lack of maintenance, earthquake, or some combination, could have adverse effects on Delta water quality (due to the intrusion of salt water) and water system operations. Major levee breaks could take months or years to repair and will impact the availability of water supplies from the Delta.
- More intense storms and increased runoff could impact Delta water quality by increasing sediment load and/or contaminants (from increased urban and agricultural runoff).

These impacts from climate change have been incorporated into the City’s projected water supply from the SWP. The City has also evaluated the impacts of climate change to its local water supplies and incorporated climate change impacts into its local surface water supply projections.
Chapter 6
Water Supply Characterization

As discussed above, the City along with several other local water agencies are currently preparing the Napa Valley DCP, which is expected to be complete by the end of 2021. The Napa Valley DCP will help prioritize the development of projects and management response actions to provide long-term drought resilience for the region’s water supply.

6.12 ENERGY INTENSITY

In accordance with CWC Section 10631.2(a), the energy intensity to provide water service to the City’s customers over a one-year period is presented in this section to the extent that the information is available. The amount of energy to divert, pump, treat, and distribute the City’s water supply within the system it owns and operates is included. The amount of energy the SWP requires to pump and deliver raw water to the City is excluded.

Water energy intensity is the total amount of energy, calculated on a whole-system basis, used to deliver water to the City’s customers for use. Energy intensity is the total amount of energy in kilowatt-hours (kWh) expended per AF of water taken from the City’s source to its point of delivery. Understanding the whole-system energy intensity would allow the City to develop the following water supply management and system operation strategies:

- Identifying energy saving opportunities, as energy consumption is often a large portion of the cost of delivering water
- Calculating energy savings and greenhouse gas emissions reductions associated with water conservation programs
- Identifying potential opportunities for receiving energy efficiency funding for water conservation programs
- Informing climate change mitigation strategies
- Benchmarking energy use at each water acquisition and delivery step and comparing energy use among similar agencies

As shown in Table 6-11, the total energy intensity for the City’s water service in 2020 is approximately 150 kWh/AF. To provide a more accurate energy intensity calculation, the water volume used includes 591 AF that the City treats and wheels to American Canyon and Calistoga. Based on research by the American Council for an Energy-Efficient Economy, the City’s energy intensity is well below average for drinking water systems.
Chapter 6
Water Supply Characterization

Table 6-11. Recommended Energy Reporting - Total Utility Approach
(DWR Table O-18)

<table>
<thead>
<tr>
<th>Enter Start Date for Reporting Period</th>
<th>1/1/2020</th>
<th>Urban Water Supplier Operational Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>End Date</td>
<td>12/31/2020</td>
<td>Sum of All Water Management Processes</td>
</tr>
<tr>
<td>Is upstream embedded in the values reported?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Water Volume Units Used</th>
<th>AF</th>
<th>Total Utility</th>
<th>Hydropower</th>
<th>Net Utility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume of Water Entering Process (volume unit)</td>
<td>14,683</td>
<td>0</td>
<td>14,683</td>
<td></td>
</tr>
<tr>
<td>Energy Consumed (kWh)</td>
<td>2,198,510</td>
<td>0</td>
<td>2,198,510</td>
<td></td>
</tr>
<tr>
<td>Energy Intensity (kWh/volume)</td>
<td>149.7</td>
<td>0.0</td>
<td>149.7</td>
<td></td>
</tr>
</tbody>
</table>

Quantity of Self-Generated Renewable Energy
407,136 kWh

Data Quality (Estimate, Metered Data, Combination of Estimates and Metered Data)

<table>
<thead>
<tr>
<th>Metered Data</th>
</tr>
</thead>
</table>

Data Quality Narrative:
Volume of Water Entering Process includes 591 AF that the City treats and wheels to American Canyon and Calistoga. This helps provide a more accurate Energy Intensity in this Total Utility Approach. Metered electricity data were tabulated for all City Pacific Gas & Electric (PG&E) billings covering calendar year 2020.

Narrative:
Electricity is consumed primarily at three water treatment plants and nine pump stations within the City's operational control. Pumping raw water from Lake Hennessey to the Hennessey Water Treatment Plant consumes the largest amount of energy. This is also the site of the City's solar photovoltaic system, which produces more than 400,000 kWh per year.

Since NapaSan manages all wastewater and recycled water operations (i.e., collection, treatment, discharge, and distribution) within the City’s service area, energy reporting for wastewater and recycled water does not apply to the City.
CHAPTER 7
Water Service Reliability and Drought Risk Assessment

This chapter describes the City’s water service reliability under various hydrologic conditions, including a severe drought for the next five years. The City’s existing and planned water management tools for increasing water supply reliability are also addressed. Responses to actual water shortage conditions are detailed in Chapter 8 of this plan.

7.1 WATER SERVICE RELIABILITY ASSESSMENT

This section presents the constraints on the City’s existing and planned water supply sources and describes the historical basis for projecting available supplies under various hydrologic conditions (i.e., normal year, single dry year, and five consecutive dry years). The City’s water service reliability is then presented in five-year increments through 2045 based on previous analysis of water use (discussed in Chapter 4 of this plan) and supply (Chapter 6). Finally, this section discusses the City’s water management tools and options to promote regional supply reliability and minimize the need to import water from other regions.

7.1.1 Constraints on Water Sources

This section discusses the reliability constraints on the City’s water supply sources and the City’s strategies for managing the risks associated with each supply source. The year-to-year reliability of water supplies from Lake Hennessey, Milliken Reservoir, and the SWP depends on various climatic, environmental, legal, and water quality factors. Each of these factors is discussed in the following sections.

7.1.1.1 Climate Variability

Weather patterns affect hydrologic conditions, which help determine annual SWP deliveries. In critically dry years like 2014 and 2021, SWP contractors have received as little as 5 percent of their annual entitlement. Because the City uses SWP supplies, the City is somewhat dependent on precipitation and drought conditions in the Sacramento and San Joaquin river basins. However, with local reservoirs augmenting the City’s supply from the SWP, the City is not as vulnerable to climatic effects on its SWP supply. Weather patterns and annual rainfall in the local Lake Hennessey and Milliken Reservoir watersheds affect their yields.

With the conservative assumption that dry conditions will occur simultaneously in the SWP and local watersheds, the City is confident in the minimum supplies presented in this plan for single dry and multiple-dry year conditions. As discussed in Chapter 6 of this plan, climate change may increase the variability in water supply for the City and is addressed in the City’s supply projections.

7.1.1.2 Environmental/Legal Restrictions

SWP water is conveyed to the City through the NBA from the Delta. With more than 20 million Californians and millions of acres of irrigated farmland relying on the Delta for water, it is the hub of the State’s water distribution system. With runoff from two major river systems flowing into San Francisco Bay, the Delta is also a productive habitat for wildlife, including several endangered species.

The Delta also serves as a migration pathway for salmonid species traveling between their home streams and the Pacific Ocean. It is also home to the tiny Delta Smelt, a threatened fish species requiring protection. Protection of the Delta Smelt involves periodic pumping restrictions affecting Delta water exports. In December 2008 and June 2009, respectively, the United States Fish and Wildlife Service and National Marine Fisheries Service issued Biological Opinions (BiOps) regarding the effect of SWP...
operations on threatened and endangered fish species in the Delta. In its 2019 Delivery Capability Report (DCR), DWR accounts for the impact of these BiOps on future Table A deliveries. To ensure a conservative analysis, the 2019 DCR accounts for the institutional, environmental, regulatory, and legal factors affecting SWP supplies and assumes these limitations remain in place.

As described in Chapter 6 of this plan, some of these SWP environmental impacts for the City have been mitigated by the “Area of Origin” settlement. DWR now calculates a separate SWP Table A allocation for NOD contractors that will not be affected by restrictions that reduce South of Delta exports.

Through permits and licenses with the SWRCB, the City has a legal entitlement to use water from its local reservoirs (Lake Hennessey and Milliken Reservoir). These appropriative water rights allow the City to divert and store up to 30,500 AFY from Conn Creek and 2,350 AFY from Milliken Creek for beneficial use. The water rights require the City to allow sufficient releases from the reservoirs to provide minimum stream flows, which have been taken into consideration in estimating water supply availability.

The City has initiated development of a Master Plan for Reservoir and Watershed Operations, one portion of which relates to modeling runoff within the watershed. As part of this effort, the City will also coordinate with the County, who has jurisdiction over land use in thousands of acres of watershed lands, to develop a monitoring and analysis plan and define tributary water quality. An assessment of current operations under existing agreements will be reviewed, and recommendations for future bypass flow releases relative to the downstream habitat for sensitive species, including steelhead trout, will be developed. Recommendations will be completed through this effort with appropriate biological expertise and the resource agencies providing input on options for efficacy of seasonal releases, restoration efforts, and benefits achieved. Another aspect of the Master Plan for Reservoir and Watershed Operations is an assessment of spillway capacity and a probable maximum storm. This master plan may recommend capital improvements and/or a combination of operational constraints, and results could impact annual supplies available from the City’s local reservoirs.

7.1.1.3 Water Quality

Because the Delta is an estuary, salinity is a potential water quality concern. SWP water is required to meet salinity and other water quality objectives for the Delta established by the SWRCB, and these objectives may restrict SWP exports from the Delta.

The City consistently meets drinking water standards prescribed by the U.S. Environmental Protection Agency and the SWRCB. SWP source water can provide a challenge for the Jamieson Canyon WTP during winter storms, when turbidity increases. While process changes including ozonation have improved the WTP’s ability to handle high-turbidity raw water, improved watershed management practices near the intake may also help mitigate the issue in the future. The NBA intake at Barker Slough has experienced periodic water quality problems, in part because of organic material from decaying vegetation. Habitat restoration projects initiated to mitigate impacts associated with the Bay Delta Conveyance Project (formerly Twin Tunnels) near the Barker Slough Pumping Plant may further reduce the water supply reliability of the NBA. Potential alternate intake locations for the NBA that would improve raw water quality and avoid Delta Smelt habitat are being evaluated.

Raw water quality is also an issue for the Milliken Reservoir, as higher turbidity levels in the fall, winter, and spring reduce the effectiveness of the Milliken WTP’s direct filtration system. The City is considering
modifications to Milliken WTP so that this reservoir can be used as a supply source year-round. The supply reliability data in this plan reflect the current practice of using Milliken supplies only during the summer, when lower turbidity levels can be effectively treated.

The Master Plan for Reservoir and Watershed Operations will also address water quality impacts to supply. City supply sources have seasonal taste and odor challenges due to algal growth, as well as episodes of high total organic carbon that increase the formation potential for disinfection byproducts. City staff is cognizant of these challenges and uses vigilance to provide the highest quality water to customers but is often left with no good choices. Modifications to reservoir releases may change the frequency of local reservoirs spilling and filling. Increased stagnation of water supplies will increase water temperatures and further exacerbate the taste and odor challenges that are on the rise due to water quality degradation and increased nutrient loading. Management of existing reservoir water supplies and alternate supply options to address loss of quantity and quality will be considered.

### 7.1.2 Year Type Characterization

Water supplies can vary year to year depending on hydrologic conditions. Historical data, where available, were used to develop a projected yield for each water supply source under three conditions: (1) normal water year, (2) single dry water year, and (3) five consecutive dry water years. In accordance with the DWR Guidebook, each condition is defined as follows:

- **Normal Water Year**: The year or averaged range of years in the historical sequence most closely representing average water supply.
- **Single Dry Water Year**: The year with the lowest water supply in the historical sequence.
- **Five-Consecutive-Year Drought**: The driest five-year historical sequence.

The following sections describe the historical calendar years selected to represent each of the above conditions for local surface water and SWP supplies.

#### 7.1.2.1 Basis of Water Year Data – Local Surface Water

The City’s local surface water supplies are stored in Lake Hennessey and Milliken Reservoir, and each reservoir has a yield that varies with hydrological conditions. During droughts, reduced yields are supplemented by releasing additional stored water (i.e., reservoir drawdown or depletion). Therefore, in single or multiple dry years, local surface water supplies consist of two components: reservoir yield and reservoir depletion. Yields represent the amount of annual recharge, while depletion is the change in reservoir low point from one year to the next. The depletion amount is a factor of water use, evaporation, and bypass flows. Evaporation depends on the climate and the water surface area in the reservoir. The sum of evaporation and bypass losses is assumed to be 1,400 AFY based on the Lake Hennessey median value for the 2001 to 2020 period.

The driest five-year historical sequence for the City occurred during 1987-1992. The Lake Hennessey storage pattern for that period is shown in Figure 7-1, which also notes the yield and depletion for the 1987-1988 period. The recharge amount of 7,700 AF in the winter of 1987-88 represents the yield. Depletion of 800 AF is the difference between the reservoir low points.
Estimated reservoir yields for Lake Hennessey and Milliken Reservoir for the different water year conditions are presented in Table 7-1 and are derived from reservoir conditions experienced in the 1987-1992 drought. For Lake Hennessey, the normal year yield of 17,500 AF was derived from a yield curve based on watershed modeling and fifty years of rainfall data, as noted in the 2050 Study. The Lake Hennessey reliable yield of 4,800 AFY for multiple dry years is based on the average annual recharge in the reservoir from 1987 through 1992. Lake Hennessey’s firm yield of 2,000 AFY is the rounded-up value of the lowest recharge amounts encountered in that drought. Milliken Reservoir typically fills and spills each winter, with a reliable yield of 700 AF. In the extreme single dry year case, a firm yield of 400 AFY is assumed for Milliken Reservoir.

<table>
<thead>
<tr>
<th>Source</th>
<th>Yield, AFY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Normal Year</td>
</tr>
<tr>
<td>Lake Hennessey</td>
<td>17,500</td>
</tr>
<tr>
<td>Milliken Reservoir</td>
<td>700</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>18,200</strong></td>
</tr>
</tbody>
</table>
Chapter 7
Water Service Reliability and Drought Risk Assessment

For both the single dry year and the multiple dry year cases, Lake Hennessey is assumed to start at 26,000 AF of storage (out of a total storage capacity of 31,000 AF). The basis for this assumption is that, except for the 1987-1992 drought years shown in Figure 7-1, Lake Hennessey storage levels after the winter season have been 26,000 AF or greater in 57 of 60 years (95 percent). In the three years that storage levels have been below 26,000 AF, they were at or above 24,500 AF.

For single dry years, Lake Hennessey storage is assumed to be depleted by 10,900 AFY, with another 1,400 AFY lost to evaporation and bypass flows. Therefore, Lake Hennessey has 9,500 AFY of usable supply in single dry years. Milliken Reservoir is assumed to start at 400 AF of storage and be drawn down 25 percent (100 AF) during single dry years. Therefore, the total available supply from the City’s reservoirs during a single dry year is equal to 9,600 AFY.

In the multiple dry year case, the local reservoirs were assumed to draw down by 50 percent over five years. Lake Hennessey was assumed to have a first-year depletion of 6,500 AF (i.e., 25 percent). This initial depletion of 25 percent would be followed by four years at 6.25 percent per year to reach the 50 percent draw down by the fifth year. These depletion amounts are conservatively higher than what actually occurred in 1987-1992, when the net depletion over that period was just 3,500 AF for Lake Hennessey. For Milliken Reservoir, the 50 percent storage draw down was assumed to be spread evenly over the five years (i.e., 10 percent per year).

Table 7-2 summarizes the estimated reservoir depletion and resulting available supply for single dry years and five consecutive dry years.

<table>
<thead>
<tr>
<th>Source</th>
<th>Single Dry Year</th>
<th>Multiple Dry Year 1</th>
<th>Multiple Dry Year 2</th>
<th>Multiple Dry Year 3</th>
<th>Multiple Dry Year 4</th>
<th>Multiple Dry Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lake Hennessey(a)</td>
<td>10,900</td>
<td>6,500</td>
<td>1,625</td>
<td>1,625</td>
<td>1,625</td>
<td>1,625</td>
</tr>
<tr>
<td>Milliken Reservoir(b)</td>
<td>100</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>Evaporation/Bypass</td>
<td>(1,400)</td>
<td>(1,400)</td>
<td>(1,400)</td>
<td>(1,400)</td>
<td>(1,400)</td>
<td>(1,400)</td>
</tr>
<tr>
<td>Available Supply</td>
<td>9,600</td>
<td>5,140</td>
<td>265</td>
<td>265</td>
<td>265</td>
<td>265</td>
</tr>
</tbody>
</table>

(a) Assumed to start with 26,000 AF remaining storage after normal year.
(b) Assumed to start with 400 AF remaining storage after normal year.

Table 7-3 summarizes the available local surface water supplies for each year type by combining the estimated reservoir yields (Table 7-1) and usable depletion (Table 7-2). In single dry years, 66 percent of the normal local surface water supply would be available. During a five-consecutive-year drought, available local surface water supplies range from 32 percent to 58 percent of normal.
Table 7.3. Basis of Water Year Data – Local Surface Water
(DWR Table 7-1 Retail)

<table>
<thead>
<tr>
<th>Year Type</th>
<th>Base Year</th>
<th>Available Supplies if Year Type Repeats</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location __________________________</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Quantification of available supplies is provided in this table as either volume only, percent only, or both.</td>
</tr>
<tr>
<td>Average Year</td>
<td>1922-2003</td>
<td>18,200% 100%</td>
</tr>
<tr>
<td>Single Dry Year</td>
<td>2014</td>
<td>12,000 66%</td>
</tr>
<tr>
<td>Consecutive Dry Years 1st Year</td>
<td>1987</td>
<td>10,640 58%</td>
</tr>
<tr>
<td>Consecutive Dry Years 2nd Year</td>
<td>1988</td>
<td>5,765 32%</td>
</tr>
<tr>
<td>Consecutive Dry Years 3rd Year</td>
<td>1989</td>
<td>5,765 32%</td>
</tr>
<tr>
<td>Consecutive Dry Years 4th Year</td>
<td>1990</td>
<td>5,765 32%</td>
</tr>
<tr>
<td>Consecutive Dry Years 5th Year</td>
<td>1991</td>
<td>5,765 32%</td>
</tr>
</tbody>
</table>

Supplier may use multiple versions of Table 7-1 if different water sources have different base years and the supplier chooses to report the base years for each water source separately. If a Supplier uses multiple versions of Table 7-1, in the "Note" section of each table, state that multiple versions of Table 7-1 are being used and identify the particular water source that is being reported in each table.

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

NOTES: Volumes are in AF. Multiple versions of DWR Table 7-1 are used; this table is for local surface water (i.e., Lake Hennessey and Milliken Reservoir). Recycled water is not included.

7.1.2.2 Basis of Water Year Data – SWP

The ability of the SWP to deliver water to its contractors in any given year depends on several factors, including rainfall, size of snowpack, runoff, water in storage, and pumping capacity in the Delta. Endangered fish species and Delta water quality are also significant factors affecting SWP deliveries. The actual delivery, or yield, varies from year to year and is described as a percentage of the contractual entitlement. For the City, annual SWP deliveries are a percentage of Table A water. While this entire entitlement may be available in wet years, lesser amounts are delivered in average, single dry, and multiple dry years. As presented in Chapter 6 of this plan, the City’s full Table A entitlement is 21,900 AFY.
SWP reliability is based on analysis performed by DWR in its 2019 DCR. Supply projections in the 2019 DCR are based on conservative assumptions of climate and hydrology, while also accounting for BiOps and water quality objectives (e.g., salinity). DWR estimates the SWP’s water delivery capability as percentages of the maximum Table A amount:

- Normal (Average) Year: 58 percent (based on 1922–2003 average)
- Single Dry Year: 7 percent (based on 1977)
- Multiple-Year Drought: 26 percent (based on 1987–1992)

While the DWR model indicates a single dry year allocation of 7 percent, this is based on records from 1922 through 2003. Since the actual SWP allocation in 2014 was 5 percent, the City has chosen that lower allocation as the worst-case scenario for single dry years.

To further emphasize a conservative approach for its SWP reliability, the City will assume the following are unavailable: carryover water, NOD Allocation, Article 21 water, and Dry Year water. In the single dry and multiple dry year cases, the City assumes that carryover water would be exhausted, so the City can receive an additional 3,772 AFY in Advanced Table A water (in addition to its Table A allocation). Table 7-4 summarizes the assumptions for SWP supply reliability used in this plan.

<table>
<thead>
<tr>
<th>Water Year Type</th>
<th>Table A&lt;sup&gt;a&lt;/sup&gt;, percent</th>
<th>Table A&lt;sup&gt;a&lt;/sup&gt;, AFY</th>
<th>Advanced Table A&lt;sup&gt;b&lt;/sup&gt;, AFY</th>
<th>Total SWP Deliveries, AFY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>58%</td>
<td>12,702</td>
<td>-</td>
<td>12,702</td>
</tr>
<tr>
<td>Single Dry</td>
<td>5%</td>
<td>1,095</td>
<td>3,772</td>
<td>4,867</td>
</tr>
<tr>
<td>Multiple Dry</td>
<td>26%</td>
<td>5,694</td>
<td>3,772</td>
<td>9,466</td>
</tr>
</tbody>
</table>

<sup>a</sup> 100 percent Table A is 21,900 AFY.

<sup>b</sup> Carryover water is assumed to be exhausted, so the City is entitled to Advanced Table A water. Refer to Sections 6.2.1 and 6.2.3.

Table 7-5 presents the basis of water year data for the City’s SWP supplies and calculates the volumes available as a percentage of a normal year’s supply.
### 7.1.3 Water Service Reliability

This section presents comparisons of projected water supplies and demands from 2025 through 2045 under the following hydrologic conditions: normal year, single dry year, and five consecutive dry years. It should be noted that water year types do not necessarily coincide between local reservoirs and the SWP. For example, a normal rainfall year in the Lake Hennessey watershed may occur during a dry year for the SWP watershed. However, this plan assumes that dry years occur simultaneously in both the local surface water and SWP supplies for a more conservative estimate of supply reliability.

Unless otherwise noted, it is assumed demand projections will not change with hydrologic conditions. In other words, demands are assumed to be unconstrained unless they are limited by available supplies.
Chapter 7
Water Service Reliability and Drought Risk Assessment

7.1.3.1 Water Service Reliability – Normal Year

The City’s normal water year supplies include local surface water stored in Lake Hennessey and Milliken Reservoir and imported water from the SWP. Table 7-6 shows that in normal years, the City’s supplies are adequate to meet projected demands.

Table 7.6. Normal Year Supply and Demand Comparison
(DWR Table 7-2 Retail)

<table>
<thead>
<tr>
<th></th>
<th>2025</th>
<th>2030</th>
<th>2035</th>
<th>2040</th>
<th>2045 (Opt)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply totals</td>
<td>31,737</td>
<td>31,997</td>
<td>28,907</td>
<td>28,907</td>
<td>28,907</td>
</tr>
<tr>
<td>(autofill from Table 6-9)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demand totals</td>
<td>15,065</td>
<td>15,750</td>
<td>16,100</td>
<td>16,425</td>
<td>16,650</td>
</tr>
<tr>
<td>(autofill from Table 4-3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difference</td>
<td>16,672</td>
<td>16,247</td>
<td>12,807</td>
<td>12,482</td>
<td>12,257</td>
</tr>
</tbody>
</table>

NOTES: Volumes are in AF. Supply and demand totals include recycled water supplied by NapaSan (835 AFY in 2025 and 1,095 AFY in 2030 and beyond).

7.1.3.2 Water Service Reliability – Single Dry Year

As shown in Table 7-7, in extreme single dry years following a normal year the City’s supplies are adequate to meet projected demands through 2035. In 2040 and 2045, there are small shortfalls of 150 and 375 AFY, respectively. To match projected dry year supplies in 2040 and 2045, the City would need to reduce demands by less than 3 percent. It is assumed that the City can implement adequate water conservation efforts to achieve these demand reductions. Should an extreme single dry year follow a below normal year (e.g., 2021), additional conservation or supply augmentation may be needed.
7.1.3.3 Water Service Reliability – Five Consecutive Dry Years

Table 7-8 shows that the City’s supplies are adequate to meet projected demands during five-year droughts beginning in 2025 and 2030. For extended droughts beginning in 2035, 2040, and 2045, modest deficits from 9 to 12 percent are anticipated beginning in the second year. Public awareness activities in Stage 1 of the WSCP would provide sufficient water conservation to eliminate the deficits, with Stage 2 implemented if needed. Supply augmentation with Dry Year water purchases could also be employed.
Table 7-8. Multiple Dry Years Supply and Demand Comparison
(DWR Table 7-4 Retail)

<table>
<thead>
<tr>
<th>Year</th>
<th>2025*</th>
<th>2030*</th>
<th>2035*</th>
<th>2040*</th>
<th>2045* (Opt)</th>
</tr>
</thead>
<tbody>
<tr>
<td>First year</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supply totals</td>
<td>20,941</td>
<td>21,201</td>
<td>19,191</td>
<td>19,191</td>
<td>19,191</td>
</tr>
<tr>
<td>Demand totals</td>
<td>15,065</td>
<td>15,750</td>
<td>16,100</td>
<td>16,425</td>
<td>16,650</td>
</tr>
<tr>
<td>Difference</td>
<td>5,876</td>
<td>5,451</td>
<td>3,091</td>
<td>2,766</td>
<td>2,541</td>
</tr>
<tr>
<td>Second year</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supply totals</td>
<td>16,066</td>
<td>16,326</td>
<td>14,803</td>
<td>14,803</td>
<td>14,803</td>
</tr>
<tr>
<td>Demand totals</td>
<td>15,065</td>
<td>15,750</td>
<td>16,100</td>
<td>16,425</td>
<td>16,650</td>
</tr>
<tr>
<td>Difference</td>
<td>1,001</td>
<td>576</td>
<td>(1,297)</td>
<td>(1,622)</td>
<td>(1,847)</td>
</tr>
<tr>
<td>Third year</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supply totals</td>
<td>16,066</td>
<td>16,326</td>
<td>14,803</td>
<td>14,803</td>
<td>14,803</td>
</tr>
<tr>
<td>Demand totals</td>
<td>15,065</td>
<td>15,750</td>
<td>16,100</td>
<td>16,425</td>
<td>16,650</td>
</tr>
<tr>
<td>Difference</td>
<td>1,001</td>
<td>576</td>
<td>(1,297)</td>
<td>(1,622)</td>
<td>(1,847)</td>
</tr>
<tr>
<td>Fourth year</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supply totals</td>
<td>16,066</td>
<td>16,326</td>
<td>14,803</td>
<td>14,803</td>
<td>14,803</td>
</tr>
<tr>
<td>Demand totals</td>
<td>15,065</td>
<td>15,750</td>
<td>16,100</td>
<td>16,425</td>
<td>16,650</td>
</tr>
<tr>
<td>Difference</td>
<td>1,001</td>
<td>576</td>
<td>(1,297)</td>
<td>(1,622)</td>
<td>(1,847)</td>
</tr>
<tr>
<td>Fifth year</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supply totals</td>
<td>16,066</td>
<td>16,326</td>
<td>14,803</td>
<td>14,803</td>
<td>14,803</td>
</tr>
<tr>
<td>Demand totals</td>
<td>15,065</td>
<td>15,750</td>
<td>16,100</td>
<td>16,425</td>
<td>16,650</td>
</tr>
<tr>
<td>Difference</td>
<td>1,001</td>
<td>576</td>
<td>(1,297)</td>
<td>(1,622)</td>
<td>(1,847)</td>
</tr>
</tbody>
</table>

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

NOTES: Volumes are in AF. Supply and demand totals include recycled water supplied by NapaSan (835 AFY in 2025 and 1,095 AFY in 2030 and beyond). Supply totals in 2035 and beyond incorporate a 10 percent reduction in average supplies due to assumed climate change impacts.

7.1.4 Water Management Tools and Options

To maximize the use of local water resources and minimize the need to import water from other regions, the City focuses on demand reduction, specifically prioritizing water conservation and encouraging recycled water use. Chapter 9 of this plan details the City’s water conservation efforts, including the Water Offset Program, which requires developers to offset the projected water demand of their new projects by reducing demand elsewhere in the City.
It is anticipated that direct potable reuse regulations will be approved by the State of California in or around December 2023. As one of the projects recommended in the Napa Valley Drought Contingency Plan, the City, in conjunction with NapaSan, will assess the feasibility of advanced treatment of winter flows at the Soscol WRF or at the Jamieson Canyon WTP in lieu of SWP supply.

### 7.2 Drought Risk Assessment

In accordance with CWC Section 10612, urban water suppliers must conduct a Drought Risk Assessment (DRA), which evaluates the risk of a severe drought occurring for the next five consecutive years (2021-2025). Supply conditions for the DRA are based on what would be the five driest consecutive years on record, starting with actual conditions as of mid-2021.

This section reviews the data and methods used to define the DRA water shortage condition and evaluates each water source’s reliability under the proposed drought condition. Finally, total water supplies during the five-year drought are compared to projected demands, accounting for any applicable supply augmentation or demand reduction measures available to the City.

#### 7.2.1 Data, Methods, and Basis for Water Shortage Condition

The water shortage condition for the DRA is more severe than the five-year drought scenarios presented in Section 7.1.2; it reflects actual starting conditions experienced in 2021. Since the DRA can be updated independently from the five-year UWMP cycle, a summary of the data and basis for the water shortage condition is provided in this section.

It was assumed that the Milliken Reservoir yield would be 700 AFY, while the drawdown would be 50 percent over five years (i.e., 10 percent per year). In this DRA, Lake Hennessey supplies for 2021 are based on actual projections, and 2022-2025 are constrained by requiring a minimum ending storage of roughly 40 percent of reservoir capacity.

SWP reliability is provided as a percentage of maximum Table A amounts (21,900 AFY for the City) and is based on a slow recovery after initial severe drought conditions. Table A allocations in 2021-2025 are assumed to be 5, 5, 15, 20, and 30 percent, respectively. This would be historically unprecedented and significantly more severe than the 1987-1992 drought. In all five years of the DRA, the City assumes that carryover water would be exhausted, so the City can receive at least 3,772 AFY in Advanced Table A water (in addition to its Table A allocation). With a Table A allocation of 30 percent in 2025, the Advanced Table A amount is 5,659 AF based on provisions in the Area of Origin settlement agreement.

#### 7.2.2 DRA Water Source Reliability

The City’s multiple dry year supplies include local surface water (i.e., reservoir yield and depletion) and SWP imports. For 2021, Lake Hennessey supply is the actual anticipated volume, with the remaining years following a pattern that avoids drawing the lake below 40 percent of capacity. Following a dry 2020 with limited yield, Lake Hennessey began 2021 with approximately 22,000 AF of storage.
Chapter 7
Water Service Reliability and Drought Risk Assessment

As of the development of this plan, the 2021 overall SWP allocation (including carryover, Advanced Table A, and Article 21 water) is 8,379 AF. With Dry Year water purchases included, it is assumed the total supply from the SWP is 9,779 AF for 2021. Due to dry conditions statewide, the SWP Table A allocation is assumed to be just 5 percent again for 2022. For 2023 through 2025, SWP supplies are 15, 20, and 30 percent, respectively, plus Advanced Table A supply.

Table 7-9 summarizes the available supplies for each year of the DRA by supply source and accounts for the fluctuations in Lake Hennessey storage that would occur.

<table>
<thead>
<tr>
<th>Supply Source</th>
<th>Available Supply, AFY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2021</td>
</tr>
<tr>
<td>Lake Hennessey(a)</td>
<td>3,088</td>
</tr>
<tr>
<td>Milliken Reservoir(b)</td>
<td>740</td>
</tr>
<tr>
<td>SWP Table A(c)</td>
<td>1,095</td>
</tr>
<tr>
<td>SWP Carryover</td>
<td>3,104</td>
</tr>
<tr>
<td>SWP Article 21</td>
<td>408</td>
</tr>
<tr>
<td>SWP Advanced Table A</td>
<td>3,772</td>
</tr>
<tr>
<td>Dry Year Purchases/Other Water</td>
<td>1,400</td>
</tr>
<tr>
<td>Recycled Water(d)</td>
<td>621</td>
</tr>
<tr>
<td>Total</td>
<td>14,228</td>
</tr>
</tbody>
</table>

(a) Lake Hennessey supplies, after 1,400 AFY of evaporation and bypass losses, follow a pattern that avoids drawing the reservoir below 40 percent of capacity.
(b) Sum of multiple dry year yield and depletion. Refer to Table 7-1 and Table 7-2.
(c) The SWP Table A allocation for 2021 is 5 percent. For 2022-2025, the Table A allocation is assumed to be 5, 15, 20, and 30 percent, respectively.
(d) Recycled water supplies are assumed to equal recycled water demands.

7.2.3 Total Water Supply and Use Comparison

As shown in Table 7-10, during a historically unprecedented five-year drought beginning in 2021, the City would experience a shortfall in supplies in the first four years. Assuming unconstrained demand, the deficits would range from 3 percent to 23 percent. Implementing applicable stages of the WSCP would eliminate these deficits by reducing demand. By 2025, supplies are adequate to meet demand without the need for demand reduction. The sequence of severely dry years in this DRA still provides the City with a manageable path by taking advantage of supply augmentation and demand reduction options. Additional drawdown of Lake Hennessey would provide other opportunities to mitigate the shortfalls, but the reservoir is managed conservatively in this DRA.
### Table 7-10. Five-Year Drought Risk Assessment Tables to Address Water Code Section 10635(b) (DWR Table 7-5)

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Water Use</th>
<th>Total Supplies</th>
<th>Surplus/Shortfall w/o WSCP Action</th>
<th>Planned WSCP Actions (use reduction and supply augmentation)</th>
<th>Revised Surplus/(shortfall)</th>
<th>Resulting % Use Reduction from WSCP action</th>
</tr>
</thead>
<tbody>
<tr>
<td>2021</td>
<td>14,741</td>
<td>14,228</td>
<td>(513)</td>
<td>WSCP - supply augmentation benefit</td>
<td>0</td>
<td>3%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>WSCP - use reduction savings benefit</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Revised Surplus/(shortfall)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2022</td>
<td>14,822</td>
<td>11,436</td>
<td>(3,386)</td>
<td>WSCP - supply augmentation benefit</td>
<td>0</td>
<td>23%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>WSCP - use reduction savings benefit</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Revised Surplus/(shortfall)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2023</td>
<td>14,903</td>
<td>12,912</td>
<td>(1,991)</td>
<td>WSCP - supply augmentation benefit</td>
<td>0</td>
<td>13%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>WSCP - use reduction savings benefit</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Revised Surplus/(shortfall)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2024</td>
<td>14,984</td>
<td>12,966</td>
<td>(2,018)</td>
<td>WSCP - supply augmentation benefit</td>
<td>0</td>
<td>13%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>WSCP - use reduction savings benefit</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Revised Surplus/(shortfall)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2025</td>
<td>15,065</td>
<td>16,640</td>
<td>1,539</td>
<td>WSCP - supply augmentation benefit</td>
<td>1,539</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>WSCP - use reduction savings benefit</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Revised Surplus/(shortfall)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
This chapter discusses the City's WSCP, seismic risk to City facilities, and WSCP adoption procedures. To allow for WSCP updates to be made outside of the UWMP preparation process, the City's WSCP is included in this plan as Appendix J.

### 8.1 WATER SHORTAGE CONTINGENCY PLAN BACKGROUND

Water shortages occur whenever the available water supply cannot meet the normally expected customer water use. This can be due to several reasons, including climate change, drought, and catastrophic events. Drought, regulatory action constraints, and natural and manmade disasters may occur at any time. A WSCP presents how an urban water supplier plans to respond to a water shortage condition and helps prevent catastrophic service disruptions.

In 2018, the California State Legislature enacted two policy bills, (SB 606 (Hertzberg) and AB 1668 (Friedman)) (2018 Water Conservation Legislation), to establish a new foundation for long-term improvements in water conservation and drought planning to adapt to climate change and the resulting longer and more intense droughts in California. The 2018 Water Conservation Legislation set new requirements for water shortage contingency planning; the City’s WSCP has been updated to be consistent with these requirements.

### 8.2 CITY WATER SHORTAGE CONTINGENCY PLAN

Chapters 13.10 and 13.12 of the NMC support the City’s WSCP, which describes the City’s strategic plan for preparing and responding to water shortages. The WSCP includes water shortage stages and associated shortage response actions, as well as the City’s legal authorities, communication protocols, compliance and enforcement, and monitoring and reporting.

The City intends for its WSCP to be dynamic, so that it may assess response action effectiveness and adapt to foreseeable and unforeseeable events. Therefore, the City’s WSCP is included in this plan as Appendix J to allow for updates to be made outside of the UWMP preparation process. When an update to the WSCP is proposed, the revised WSCP will undergo the process described in Section 8.4.

### 8.3 SEISMIC RISK ASSESSMENT AND MITIGATION PLAN

CWC Section 10632.5(a) requires that UWMPs include a plan to assess and mitigate a water system’s seismic vulnerabilities. A Local Hazard Mitigation Plan can be incorporated in this plan to meet this requirement if it addresses seismic risk. The City’s Hazard Mitigation Plan (City HMP, adopted in 2015 and currently being updated) addressed seismic risk and is incorporated into this plan by reference. Details of the City’s seismic risk assessment and mitigation plan are provided in Appendix J, Section 4.6.
8.4 WATER SHORTAGE CONTINGENCY PLAN ADOPTION, SUBMITTAL, AND AVAILABILITY

The City’s WSCP (Appendix J) is adopted concurrently with this plan, by separate resolution. Prior to adoption, a duly noticed public hearing was conducted. An electronic copy of the WSCP will be submitted to DWR within 30 days of adoption.

No later than 30 days after adoption, a copy of this WSCP will be available at the City’s offices. A copy will also be provided to Napa County. An electronic copy of the WSCP will also be available for public review and download on the City’s website.

The City’s WSCP is an adaptive management plan and is subject to refinements as needed to ensure that the City’s shortage response actions and mitigation strategies are effective and produce the desired results. When a revised WSCP is proposed, the revised WSCP will undergo the process described above for adoption by City Council and distribution to Napa County, the City’s customers, and the general public.
CHAPTER 9
Demand Management Measures

This chapter describes the City’s historical and existing water conservation efforts, status of implementation of Demand Management Measures (DMMs), and projected future water conservation implementation.

9.1 WATER CONSERVATION PROGRAM OVERVIEW

Water conservation has been and will continue to be an integral part of the City’s long-term water supply management strategy. The City instituted successful demand reduction measures during the drought of 1987-1992, after which the City made several of those measures permanent, including school education, public information, and an aggressive toilet replacement program. The City’s strategy for water conservation includes: (1) offering existing customers an array of free services, rebates, and education so that older high water use equipment and behaviors are replaced with more water efficient ones; and (2) maximizing the water efficiency of new development to minimize its impact on the City’s water demands.

In 2002, the City joined the California Urban Water Conservation Council, now known as the California Water Efficiency Partnership (CalWEP). CalWEP seeks to maximize urban water efficiency and conservation using innovative technologies and practices and effective public policy, all within a collaborative framework.

The City’s SB X7-7 per capita water use target for 2020 was 132 GPCD. In 2020, the City’s overall per capita water use was 137 GPCD, as presented in Chapter 5 of this plan. While the City did not meet this target, its per capita water use remains well below its baseline of 166 GPCD in part because of the DMMs it implemented. The City anticipates continuing and expanding water conservation efforts to meet new legislative and upcoming regulatory water use requirements that may be more aggressive than SB X7-7.

9.2 EXISTING AND PLANNED DEMAND MANAGEMENT MEASURES

Retail water agencies are required to provide a description of the DMMs associated with the following:

- Water waste prevention ordinances
- Metering
- Conservation pricing
- Public education and outreach
- Programs to assess and manage distribution system real loss
- Water conservation program coordination and staffing support

The City is also required to describe any other DMMs that it has implemented that have had significant impact on water use.

This section describes the existing and planned DMMs. For each DMM, the current program is described, along with how the DMM was implemented over the previous five years and future implementation plans.
9.2.1 Water Waste Prevention Ordinances

9.2.1.1 DMM Description

During water shortages, the City prohibits water waste within its service area. NMC Section 13.10.050 defines water waste for moderate water shortages (i.e., up to 20 percent demand reduction required), while NMC Section 13.12.050 defines water waste for severe water shortages (i.e., more than 20 percent demand reduction required). Water waste restrictions become effective immediately upon approval by the City Council of a resolution declaring the existence of a moderate or severe water shortage and shall remain in effect until the City Council finds that the shortage no longer exists. During severe water shortages, water waste is subject to a civil fine, with potential escalations for repeat offenses.

9.2.1.2 Implementation over the Past Five Years to Achieve Water Use Targets

Following the end of the 2012-2016 statewide drought, the City prioritized the enforcement of irrigation-related prohibitions. Water conservation staff routinely patrolled the City and followed up on all water waste complaints, using educational warnings to limit excessive irrigation runoff, irrigation during rain, and washing of driveways and sidewalks.

The City also has in place local ordinances to reduce water waste and ensure water efficient design in new development. Local high-performance building regulations are more stringent than CALGreen, making several voluntary provisions mandatory and requiring a more stringent tier of indoor water use savings for non-residential buildings. The City aggressively enforces the statewide Model Water Efficient Landscape Ordinance (MWELO) to prevent outdoor water waste in new development.

9.2.1.3 Plans for Continued Implementation

The City will continue to enforce its water waste regulations through public education and patrols. The effectiveness of water waste prevention will be evaluated based on the number of violations, as well as the overall demand reduction after declaring a water shortage.

Implementation of this DMM is ongoing and expected to help the City achieve its water use targets by minimizing the nonessential uses of water so that water is available to be used for human consumption, sanitation, and fire protection.

9.2.2 Metering

9.2.2.1 DMM Description

The City’s water system is fully metered. Excluding fire sprinkler services, all existing connections have meters and are billed by volume of use. The City employs Automatic Meter Reading (AMR). For meters equipped with Encoder Receiver Transmitters (ERTs), City staff can perform drive-by meter readings via radio, which significantly reduces the time required for meter reading. After each meter read cycle, the City can quickly alert customers with exceptionally high usage compared to previous years. These alerts often lead customers to discover and repair leaks.

Newer meters preserve 40 days of historical water usage data that can be analyzed in hourly intervals. These data can assist customers in determining the timing and reason for their unexpected high usage.
9.2.2.2 Implementation over the Past Five Years to Achieve Water Use Targets

Over the past five years, the City has continued equipping meters with ERTs. By the end of 2020, all meters have been equipped with ERTs, compared to approximately 75 percent at the end of 2015.

9.2.2.3 Plans for Continued Implementation

The City requires all new connections to be metered and billed based on the volume of water used, as detailed in Section 9.2.3. The City will monitor water usage characteristics of its customers and focus water conservation efforts on high water users. Future plans include establishing a networked Advanced Metering Infrastructure (AMI) to provide early leak detection for customers and more extensive water use data to inform the City’s water conservation priorities.

9.2.3 Conservation Pricing

9.2.3.1 DMM Description

The City’s water rate structure encourages conservation by incorporating a water quantity (i.e., volumetric) charge in addition to a fixed service charge. Consequently, water usage reductions directly reduce customer costs, while excessive water use increases costs. In addition, water rates for single-family residential customers are tiered, with higher usage tiers paying higher rates. There is no tiered rate structure for multi-family residential, commercial, or irrigation customers.

9.2.3.2 Implementation over the Past Five Years to Achieve Water Use Targets

The City’s 2020 water rate schedule is shown in Table 9-1. As previously noted, besides the water quantity charge, the City also has a fixed bimonthly service charge that varies with service size and applies to all customer classes. Water quantity charges are higher for customers served outside City limits and for customers in certain high-elevation zones (to cover pumping costs). The current rate structure was adopted by the City Council in 2017 and included five years of automatic annual increases. No special drought rates were used in the recent 2012-2016 drought. However, the City can establish a special drought block rate structure by resolution during severe droughts.
9.2.3.3 Plans for Continued Implementation

Implementation of this DMM is expected to help the City achieve its water use objectives. As required, the City will evaluate the need to readjust rates and/or rate structures to ensure continued service to its customers while encouraging water efficiency. In 2022, the City is planning to conduct a rate study, which will inform the next iteration of water rates. The City will evaluate the effectiveness of its rates by tracking changes in unit water use resulting from rate increases.

9.2.4 Public Education and Outreach

9.2.4.1 DMM Description

The City regularly promotes water conservation and educates the community through its website (www.cityofnapa.org/water), messaging on bimonthly water bills, and fliers and brochures available at both the Utilities Department office and at public events. Media coverage of the City’s water conservation program is provided through local newspaper, magazine, and radio advertisements. City staff also deliver
presentations to community and business groups, as well as make appearances at local public events such as Earth Day, Napa Farmers Market, and Napa Town & Country Fair.

9.2.4.2 Implementation over the Past Five Years to Achieve Water Use Targets

As part of its school education program, the City continues its active membership in the Environmental Education Coalition of Napa County, which distributes an Environmental Education Guide to area K-12 teachers. Over the past five years, City water conservation offerings included:

- **Water Conservation Classroom Presentation.** City staff gave interactive presentations on water supply issues affecting California and the City, with an emphasis on water conservation methods. The presentations include a brainstorming contest on ways to save water in the home and conservation-related giveaways for students. Just two presentations were held during the 2016-2020 period, as most teachers chose to take advantage of the musical water education assembly offering instead.

- **Water Education Assembly.** Beginning with the 2016-17 school year, the City contracted with the group ZunZun to present musical assemblies for elementary school students that focus on where their water comes from, water conservation, and climate change. ZunZun's bilingual programs are always lively, with students and teachers singing and playing a variety of folkloric instruments. Through 2020, ZunZun has conducted 61 assemblies attended by nearly 13,000 students.

- **Water Treatment Plant Field Trip.** City staff provide tours of the Jamieson Canyon WTP, either separately or as part of a combined full-day trip in conjunction with the Napa Recycling & Composting Facility and NapaSan's Soscol WRF. The tours include an introductory discussion, plant tour, and drinking water-related giveaways for students. Bus transportation costs are covered by the City and its partners. During the 2016-2020 period, the City hosted more than 30 groups and 1,500 students.

- **Project WET (Water Education for Teachers).** Napa County teachers can gain access to award-winning classroom activities and earn a $100 stipend or 0.5 continuing education units by participating in *Project WET for the Napa Valley*, which consists of six hours of hands-on, action-packed training. *Project WET* promotes awareness, appreciation, knowledge, and stewardship of water resources through the dissemination of classroom-ready teaching aids. Interdisciplinary activities for grades K-12 are designed to enhance existing curriculum and are aligned to Common Core State Standards. Through 2020, the City has certified more than 30 local teachers in this curriculum.

- **High School Video Contest.** Starting in the 2015-16 school year, the City has been instrumental in organizing the Napa County Water Conservation Video Contest by developing annual themes and judging the winning entries. The contest is open to all local students in grades 9-12, and the annual winning video is posted online and played before films at a local theater, thereby extending the water conservation outreach.

The City also advertises in the *Napa Valley Marketplace* magazine, which is mailed out to 33,000 local homes and business. For the 2016-2020 period, more than 50 ads with a water conservation theme were placed. At public events, the City hosted a display booth that reached thousands of water customers via educational literature, free water-saving device giveaways, and direct questions answered by the City’s Water Conservation Specialist.
9.2.4.3 Plans for Continued Implementation

The City will continue to implement the public education and outreach strategies described above. Implementation of this DMM is expected to help the City achieve its water use targets by educating water users about the value of water, the importance of improving water use efficiency, and avoiding water waste.

9.2.5 Programs to Assess and Manage Distribution System Real Loss

9.2.5.1 DMM Description

The City performs an annual water audit that conforms to the AWWA Manual M36 and is required by SB 555 (Wolk). A water audit is a process of calculating water use throughout a water system to quantify the unaccounted-for water (i.e., the difference between metered production and metered consumption on a system-wide basis) and establish estimates for both real losses (e.g., leaks) and apparent losses (e.g., metering inaccuracy). Under SB 555, the City is required to have its annual AWWA Water Audit validated and submitted to DWR.

The City responds promptly to visible water main and service line leaks to minimize losses. For less obvious leaks, the City contracts with leak detection professionals to use sonic methods. In addition, the City provides financial incentives for customers to promptly repair leaks on their side of the meter.

9.2.5.2 Implementation over the Past Five Years to Achieve Water Use Targets

Since 2016, the City has used AWWA’s free audit software (Excel) to thoroughly document its distribution system attributes and performance indicators related to water loss. Annual electronic calibration of source meters and other improved practices have increased the reliability of this audit data. The Water Audit Data Validity Score has increased from 49 in 2016 to 68 in 2019. For 2019, the City calculated 1,034 AF of combined real and apparent losses. As shown in Chapter 4, the City estimates this value to be just over 800 AF for 2020. The key performance indicator is real losses per service connection per day, which was 29.45 gallons per service connection per day in 2019.

9.2.5.3 Plans for Continued Implementation

Implementation of this DMM is ongoing and is a vital element of the City’s water supply management efforts. By quickly identifying sources of water loss, the City can promptly make repairs and minimize losses. The City will continue to improve its annual AWWA water audit process. Conducting a real loss component analysis will help guide the City’s efforts in an economically efficient manner. Water supplier-specific performance standards for real losses per connection per day are in development and will guide the City’s efforts to control leaks within its distribution system.

9.2.6 Water Conservation Program Coordination and Staffing Support

9.2.6.1 DMM Description

The City designates its Water Resources Analyst as its Water Conservation Coordinator, with approximately 65 percent of the position’s duties related to managing and developing the DMMs described in this chapter. The Water Conservation Coordinator is a Level 3 Water Use Efficiency Practitioner and a Certified Landscape Irrigation Auditor.
A full-time Water Conservation Specialist supports the water conservation program by providing direct customer service in the field and assisting with program development. Other Water Division staff assist as needed, including service workers who alert customers of excessive use and office staff who help at large public events.

9.2.6.2 Implementation over the Past Five Years to Achieve Water Use Targets

Over the past five years, the City has maintained the Water Conservation Coordinator and Water Conservation Specialist positions to execute the DMMs described in this chapter. The City’s annual water conservation budget is typically around $400,000, including personnel. Some of these costs are offset through grant funding and shared rebate costs with other agencies.

9.2.6.3 Plans for Continued Implementation

The City plans to maintain the Water Conservation Coordinator and Water Conservation Specialist positions. As such, implementation of this DMM is ongoing and expected to help the City achieve its water use targets by making water conservation and implementation of the City’s water conservation program a priority among City employees.

9.2.7 Other Demand Management Measures

In addition to the DMMs described above, the City implements the following programs:

- Water conservation services
- Rebate programs
- Commercial, industrial, and institutional (CII) conservation programs
- Water Offset Program

Each program is described below, along with a summary of implementation over the past five years and plans for continued implementation.

9.2.7.1 Water Conservation Services

9.2.7.1.1 DMM Description

The City offers several water conservation services to the public, as described below. These services are offered at no cost to customers and are complemented by the City’s rebate programs, which are described in Section 9.2.7.2.

- Water-Wise Home Survey. Marketed to all single family and multi-family residential customers, this program includes a site visit by the Water Conservation Specialist who checks leaks, plumbing fixture flow rates, and irrigation system performance. If warranted, customers are offered free low-flow showerheads, faucet aerators, rebate information, and irrigation scheduling and maintenance tips.
Demand Management Measures

- **Free Water-Saving Devices.** City water customers are entitled to an array of free water conservation devices, such as low-flow showerheads, faucet aerators, garden hose nozzles, and hose timers. The materials can be obtained from the Utilities Department office, at public events, or as part of a Water-Wise Home Survey.

- **Free Toilet Replacement.** Residential customers have participated in this program since 1991. Free Environmental Protection Agency (EPA) WaterSense-labeled high-efficiency toilets (HETs) that use 1.28 gallons per flush (gpf) or less are available for customers who currently have either pre-1992 toilets using 3.5 gpf or more or poor-performing ultra-low-flush toilets (ULFTs). The program is funded by developers to offset the projected water demand of their new projects (e.g., hotels, housing subdivisions) by reducing demand elsewhere in the City (as discussed in Section 9.2.7.4).

- **Water-Wise Gardening in the Napa Valley website** ([www.napa.watersavingplants.com](http://www.napa.watersavingplants.com)). This website contains an extensive landscape photo and plant information database, along with a gardening and irrigation guide appropriate for the local climate. Several aesthetic and functional upgrades were made to the site in 2016, including the addition of videos to help customers set their irrigation controllers.

- **Water-Wise Landscaping Workshop Series.** This is an annual program to educate the public on the water-saving benefits of improved irrigation scheduling, drip irrigation, soil amendments, mulch, and climate-appropriate plant selection. The City benefits from strong partnerships with the Napa County Resource Conservation District (RCD) and the University of California Master Gardeners of Napa County in putting on these workshops, and the City sometimes co-sponsors the event with a nearby agency such as the Town of Yountville.

- **Water-Wise Demonstration Gardens.** The public is welcome to visit three demonstration gardens, including a walk-through 9,000 square-foot space at Fire Station #3 featuring an array of lawn substitutes, California native plants, colorful low-water-use species, and weather-based “smart” irrigation control. The other two sites are the Vintage High School Rain Garden and Water-Wise Landscape, installed in 2013, and the former Water Division office, whose lawn was replaced with water-wise plants in the fall of 2014.

- **Bay-Friendly Garden Tour.** Since 2011, the City has partnered with other local agencies to offer an annual garden tour that typically features a dozen local residential, commercial, or institutional landscapes demonstrating the beauty of low-water-use design. Due to the pandemic, the 2020 event was transformed into a virtual Bay-Friendly Garden Month with short garden tour videos streamed live.

### 9.2.7.1.2 Implementation over the Past Five Years to Achieve Water Use Targets

Between 2016 and 2020:

- City staff completed 221 Water-Wise Home Surveys, not including additional routine high bill investigations performed.
- Approximately 1,800 water-saving devices were distributed.
- Approximately 400 toilets were replaced.
- The *Water-Wise Gardening in the Napa Valley* website received more than 12,000 unique visitors.
Chapter 9
Demand Management Measures

- Nine Water-Wise Landscaping workshops were held, for a total of 340 attendees.
- More than 1,200 people attended four Bay-Friendly Garden tours.

9.2.7.1.3 Plans for Continued Implementation
The City plans to continue the above water conservation services to meet future water use objectives.

9.2.7.2 Rebate Programs

9.2.7.2.1 DMM Description
The City maintains rebate programs to financially incentivize its customers to improve water efficiency. Current rebate programs include turf replacement, CII appliance upgrades, and smart water monitors. A clothes washer rebate for residential customers ended in 2018.

- **“Cash for Grass” Turf Replacement Rebate.** First introduced in 2010, this program currently offers all residential and CII customers $1.00 per square foot to replace high water use lawn areas with low-water use plants or permeable hardscape. The maximum rebate is $750 for single family residential customers and $2,500 for multi-family residential and CII customers. Projected water savings are 25 gallons per year per square foot of turf removed.

- **Smart Rebates.** The City participates in the CalWEP-administered Smart Rebates Program offering rebates on commercial high-efficiency clothes washers (HECWs) ($400), HETs ($200), and high-efficiency urinals (HEUs) ($300). While these rebates are intended for CII customers, multi-family residential common areas are also eligible for HECW rebates.

- **Smart Home Water Monitor.** In 2021, the City introduced an instant rebate on the purchase of a Flume device. The Flume device allows customers to monitor their water use from their smartphone, enabling instant detection of leaks. This partnership with CalWEP and Flume allows customers to purchase the device for just $65 when it normally retails for $199.

9.2.7.2.2 Implementation over the Past Five Years to Achieve Water Use Targets
Over the last five years, the City issued 614 “Cash for Grass” rebates representing 590,000 square feet of turf removed, saving about 45 AFY. Rebates for 523 HECWs were issued to customers between 2016 and 2020.

9.2.7.2.3 Plans for Continued Implementation
The City anticipates continuing these rebate programs to achieve its future water use objectives, depending on customer participation and available funding. In the near-term, the City is also planning to expand its rebate offerings to include incentives for smart weather-based irrigation controllers (WBICs), smart metering/leak detection devices, and customer home water reports.
9.2.7.3 Commercial, Industrial, and Institutional Conservation Programs

9.2.7.3.1 DMM Description
The City offers its CII customers the following specialized conservation services:

- **Water-Wise Business Survey.** Offered to all CII customers to help them use water more efficiently and potentially reduce operating costs, the survey consists of a water use history and billing analysis; site visit by City staff; evaluation of fixtures, appliances, and equipment; a landscape irrigation audit; and a follow-up recommendations report.

- **Landscape Irrigation Audits.** Full landscape irrigation audits are typically conducted as part of a Water-Wise Business Survey for large commercial and institutional sites, but CII customers can also request standalone landscape irrigation audits. Results often point out simple changes in controller scheduling, sprinkler and drip emitter maintenance, and plant selection that can help improve water use efficiency.

- **Green Business Stipend.** Since 2013, the City has been offering a $500 stipend to local businesses that complete the Green Business Certification Program and implement a comprehensive sustainability program, including water use efficiency.

- **Qualified Water Efficient Landscaper (QWEL) Training.** In 2020, the City sponsored this EPA WaterSense-certified, 20-hour training course and certification program, and offering it free to local landscape professionals. The landscape professionals, and their clients, benefit from education about local water supplies, soils, landscape water budgets, irrigation system audits, and controller programming.

9.2.7.3.2 Implementation over the Past Five Years to Achieve Water Use Targets
Over the past five years, the City completed 24 Water-Wise Business Surveys, including many sites seeking a Napa County Green Business certification. The City issued 29 Green Business Stipends between 2016 and 2020. Kicking off QWEL participation, the City trained 35 landscape professionals.

9.2.7.3.3 Plans for Continued Implementation
The City plans to continue the above CII conservation programs to meet future water use objectives.

9.2.7.4 Water Offset Program

9.2.7.4.1 DMM Description
As detailed in NMC Section 13.09.010, to mitigate the impact of newly built projects, developers are required to offset the projected water demand of their new projects (e.g., hotels, housing subdivisions) by reducing demand elsewhere in the City. These offsets may be achieved through replacement of high-water-use toilets in existing buildings, recycled water conversions for existing irrigation systems, or an in-lieu fee that funds a variety of the City’s water-saving programs.
9.2.7.4.2 Implementation over the Past Five Years to Achieve Water Use Targets

From 2016 to 2020, new development projects complying with the Water Offset Program were responsible for the replacement of 400 old, high water use toilets with EPA WaterSense-labeled HETs. In addition, $295,000 of in-lieu fees were paid to help finance the City’s other water conservation programs.

9.2.7.4.3 Plans for Continued Implementation

The City plans to continue the Water Offset Program to meet future water use objectives while regularly evaluating its efficacy considering market saturation of ULFTs and HETs.

9.3 WATER USE OBJECTIVES (FUTURE REQUIREMENTS)

In 2018, the State Legislature enacted two policy bills (SB 606 (Hertzberg) and AB 1668 (Friedman)) to establish long-term water conservation and drought planning to adapt to climate change and the associated longer and more intense droughts in California. These two policy bills build on SB X7-7 and expand authorities and requirements for urban water use efficiency. The legislation sets standards for indoor residential use and requires the SWRCB, in coordination with DWR, to adopt efficiency standards for outdoor residential use, CII outdoor water use with dedicated irrigation meters, and water loss. At the time of preparation of this plan, DWR and the SWRCB are in the process of developing new standards for water loss, indoor (non-residential) water use, and outdoor water use. These standards will require urban water retailers to develop agency-wide water use objectives and provide annual reports to DWR.

The Legislature established indoor residential water use standards as 55 GPCD until January 2025, 52.5 GPCD from 2025 to 2029, and 50 GPCD in January 2030, or a greater standard recommended by DWR and the SWRCB. By June 30, 2022, the SWRCB is anticipated to adopt an outdoor residential water use standard, a standard for CII outdoor water use with dedicated irrigation meters, and performance measures for CII water uses. At that time, the SWRCB will adopt guidelines and methodologies for calculating the water use objectives. In accordance with CWC Section 10609.20(c), the water use objectives for urban water retailers will be based on the estimated efficient indoor and outdoor residential water use, efficient outdoor irrigation of CII landscaped areas, estimated water losses, and estimated water use for variances approved by the SWRCB aggregated across the population in its water service area.

By January 1, 2024, and January 1 of every year thereafter, the City will calculate its urban water use objectives and actual water use and provide an annual report to DWR. It should be noted that these requirements are based on the current legislation and may be subject to change.
CHAPTER 10
Plan Adoption, Submittal, and Implementation

This chapter provides information regarding the notification, public hearing, adoption, and submittal of the City’s 2020 UWMP and WSCP. It also includes discussion on plan implementation and the process of amending the UWMP and WSCP.

10.1 INCLUSION OF ALL 2020 DATA

Because 2020 is the final compliance year for SB X7-7, the 2020 UWMPs must contain data through the end of 2020. If a water supplier bases its accounting on a fiscal year (July through June) the data must be through the end of the 2020 fiscal year (June 2020). If the water supplier bases its accounting on a calendar year, the data must be through the end of the 2020 calendar year (December 2020).

As indicated in Section 2.4 of this plan, the City uses a calendar year for water supply and demand accounting, and therefore this plan includes data through December 2020.

10.2 NOTICE OF PUBLIC HEARING

In accordance with the Act, the City must provide an opportunity for the public to provide input on this plan. The City must consider all public input prior to its adoption. There are two audiences to be notified for the public hearing: cities/counties and the public.

10.2.1 Notices to Cities and Counties

As discussed in Section 2.5 of this plan, the City provided greater than a 60-day notice regarding the preparation of its 2020 UWMP and WSCP to cities and counties in its service area including the following agencies:

- City of American Canyon
- Town of Yountville
- City of St. Helena
- City of Calistoga
- Napa Sanitation District
- Napa County

The notices of preparation are included as Appendix E. Notifications to cities and counties in accordance with the Act are summarized in Table 10-1.

The City also coordinated the preparation of this plan internally and with the above listed agencies. Upon substantial completion of this plan, the City provided the agencies listed above, including internally within the City and the County, notices of public hearing (Appendix E).
10.2.2 Notice to the Public

To allow ample time for public comments to be prepared and received, the City issued a notice of public hearing to the public and provided a public review period following the notice and prior to adoption of the 2020 UWMP and WSCP.

A notice of public hearing was issued in accordance with Government Code Section 6066 and was published in the Napa Valley Register newspaper. In addition, the notice was posted on the City’s website (www.cityofnapa.org/water). A copy of the published Notice of Public Hearing is included in Appendix E.

10.3 PUBLIC HEARING AND ADOPTION

The City encouraged community participation in the development of this plan, including its WSCP, using newspaper advertisements, social media, and the City’s website. The public notices included the time and place of the public hearing, as well as the location where the plan is available for public inspection.

The public hearing provided an opportunity for City water users and the general public to become familiar with the 2020 UWMP and ask questions about the City’s plans for continuing to provide reliable, safe, high-quality water and mitigating potential water shortage conditions. Copies of the Draft 2020 UWMP were made available for public inspection at the Utilities Department building, the City Clerk’s office, and the Napa City-County Library. An electronic copy of the Draft 2020 UWMP was also available for review on the City’s website: www.cityofnapa.org/water. The public was invited to forward any written comments to the City Clerk.

### Table 10-1. Notification to Cities and Counties (DWR Table 10-1 Retail)

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<tr>
<th>City Name</th>
<th>60 Day Notice</th>
<th>Notice of Public Hearing</th>
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<tr>
<td>City of American Canyon</td>
<td>Yes</td>
<td>Yes</td>
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<td>Town of Yountville</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>City of St. Helena</td>
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<td>City of Calistoga</td>
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<tr>
<th>County Name</th>
<th>60 Day Notice</th>
<th>Notice of Public Hearing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Napa County</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**NOTES:** For Napa County, the Planning and Public Works Departments were each informed. In addition, the Napa Sanitation District (NapaSan) was notified, as it is the local recycled water purveyor.
Chapter 10
Plan Adoption, Submittal, and Implementation

10.3.1 Public Hearing
The City held a public hearing on December 21, 2021, during which the City received and considered input from the public before adopting the 2020 UWMP and WSCP. As part of the public hearing, the City also provided a report on the City’s compliance with the Water Conservation Act of 2009. The report included information on the City’s baseline water use, water use targets, compliance, WSCP, and implementation of the UWMP.

10.3.2 Adoption
After the public hearing, this 2020 UWMP and WSCP were adopted by the City Council on December 21, 2021. The City adopted the WSCP separately so that it may be updated independently of the UWMP as necessary. Copies of the adopted resolutions are included in Appendix K.

10.4 PLAN SUBMITTAL
This 2020 UWMP will be submitted to DWR within 30 days of adoption. The adopted 2020 UWMP will be submitted electronically to DWR using the Water Use Efficiency (WUE) data submittal tool. A CD or hardcopy of the adopted 2020 UWMP will also be submitted to the California State Library.

No later than 30 days after adoption, a copy of the adopted 2020 UWMP, including the WSCP, will be provided to the cities and counties to which the City provides water.

10.5 PUBLIC AVAILABILITY
No later than 30 days after submittal to DWR, copies of this plan, including the adopted WSCP, will be available at the Utilities Department building, the City Clerk’s office, and the Napa City-County Library for public review during normal business hours. An electronic copy of the adopted 2020 UWMP will also be available for review and download on the City’s website: www.cityofnapa.org/water.

10.6 AMENDING AN ADOPTED UWMP OR WATER SHORTAGE CONTINGENCY PLAN
The City may amend its 2020 UWMP and WSCP jointly or separately. If the City amends one or both documents, the City will follow the notification, public hearing, adoption, and submittal process described in Sections 10.2 through 10.4 above. In addition to submitting amendments to DWR through the WUE data portal, within 30 days after adoption, copies of amendments or changes to the plans will be submitted to the California State Library, as well as any city or county within which the supplier provides water.
WATER CODE - WAT

DIVISION 6. CONSERVATION, DEVELOPMENT, AND UTILIZATION OF STATE WATER RESOURCES [10000 - 12999]  
(Heading of Division 6 amended by Stats. 1957, Ch. 1932.)

PART 2.55. SUSTAINABLE WATER USE AND DEMAND REDUCTION [10608 - 10609.42]  
(Part 2.55 added by Stats.2009, 7th Ex. Sess., Ch. 4, Sec. 1.)

CHAPTER 1. General Declarations and Policy [10608 - 10608.8]  
(Chapter 1 added by Stats. 2009, 7th Ex. Sess., Ch. 4, Sec. 1.)

10608.
The Legislature finds and declares all of the following:

(a) Water is a public resource that the California Constitution protects against waste and unreasonable use.
(b) Growing population, climate change, and the need to protect and grow California’s economy while protecting and restoring our fish and wildlife habitats make it essential that the state manage its water resources as efficiently as possible.
(c) Diverse regional water supply portfolios will increase water supply reliability and reduce dependence on the Delta.
(d) Reduced water use through conservation provides significant energy and environmental benefits, and can help protect water quality, improve stream flows, and reduce greenhouse gas emissions.
(e) The success of state and local water conservation programs to increase efficiency of water use is best determined on the basis of measurable outcomes related to water use or efficiency.
(f) Improvements in technology and management practices offer the potential for increasing water efficiency in California over time, providing an essential water management tool to meet the need for water for urban, agricultural, and environmental uses.
(g) The Governor has called for a 20 percent per capita reduction in urban water use statewide by 2020.
(h) The factors used to formulate water use efficiency targets can vary significantly from location to location based on factors including weather, patterns of urban and suburban development, and past efforts to enhance water use efficiency.
(i) Per capita water use is a valid measure of a water provider’s efforts to reduce urban water use within its service area. However, per capita water use is less useful for measuring relative water use efficiency between different water providers. Differences in weather, historical patterns of urban and suburban development, and density of housing in a particular location need to be considered when assessing per capita water use as a measure of efficiency.

(Added by Stats. 2009, 7th Ex. Sess., Ch. 4, Sec. 1. (SB 7 7x) Effective February 3, 2010.)

10608.4

It is the intent of the Legislature, by the enactment of this part, to do all of the following:

(a) Require all water suppliers to increase the efficiency of use of this essential resource.
(b) Establish a framework to meet the state targets for urban water conservation identified in this part and called for by the Governor.
(c) Measure increased efficiency of urban water use on a per capita basis.
(d) Establish a method or methods for urban retail water suppliers to determine targets for achieving increased water use efficiency by the year 2020, in accordance with the Governor’s goal of a 20-percent reduction.
(e) Establish consistent water use efficiency planning and implementation standards for urban water suppliers and agricultural water suppliers.
(f) Promote urban water conservation standards that are consistent with the California Urban Water Conservation Council’s adopted best management practices and the requirements for demand management in Section 10631.
(g) Establish standards that recognize and provide credit to water suppliers that made substantial capital investments in urban water conservation since the drought of the early 1990s.
(h) Recognize and account for the investment of urban retail water suppliers in providing recycled water for beneficial uses.
(i) Require implementation of specified efficient water management practices for agricultural water suppliers.
(j) Support the economic productivity of California’s agricultural, commercial, and industrial sectors.
(k) Advance regional water resources management.

(Added by Stats. 2009, 7th Ex. Sess., Ch. 4, Sec. 1. (SB 7 7x) Effective February 3, 2010.)
10608.8

(a) (1) Water use efficiency measures adopted and implemented pursuant to this part or Part 2.8 (commencing with Section 10800) are water conservation measures subject to the protections provided under Section 1011.

(2) Because an urban agency is not required to meet its urban water use target until 2020 pursuant to subdivision (a) of Section 10608.24, an urban retail water supplier’s failure to meet those targets shall not establish a violation of law for purposes of any state administrative or judicial proceeding prior to January 1, 2021. Nothing in this paragraph limits the use of data reported to the department or the board in litigation or an administrative proceeding. This paragraph shall become inoperative on January 1, 2021.

(3) To the extent feasible, the department and the board shall provide for the use of water conservation reports required under this part to meet the requirements of Section 1011 for water conservation reporting.

(b) This part does not limit or otherwise affect the application of Chapter 3.5 (commencing with Section 11340), Chapter 4 (commencing with Section 11370), Chapter 4.5 (commencing with Section 11400), and Chapter 5 (commencing with Section 11500) of Part 1 of Division 3 of Title 2 of the Government Code.

(c) This part does not require a reduction in the total water used in the agricultural or urban sectors, because other factors, including, but not limited to, changes in agricultural economics or population growth may have greater effects on water use. This part does not limit the economic productivity of California’s agricultural, commercial, or industrial sectors.

(d) The requirements of this part do not apply to an agricultural water supplier that is a party to the Quantification Settlement Agreement, as defined in subdivision (a) of Section 1 of Chapter 617 of the Statutes of 2002, during the period within which the Quantification Settlement Agreement remains in effect. After the expiration of the Quantification Settlement Agreement, to the extent conservation water projects implemented as part of the Quantification Settlement Agreement remain in effect, the conserved water created as part of those projects shall be credited against the obligations of the agricultural water supplier pursuant to this part.

(Added by Stats. 2009, 7th Ex. Sess., Ch. 4, Sec. 1. (SB 77x) Effective February 3, 2010.)
WATER CODE - WAT

DIVISION 6. CONSERVATION, DEVELOPMENT, AND UTILIZATION OF STATE WATER RESOURCES [10000 - 12999] (Heading of Division 6 amended by Stats. 1957, Ch. 1932.)

PART 2.55. SUSTAINABLE WATER USE AND DEMAND REDUCTION [10608 - 10609.42] (Part 2.55 added by Stats. 2009, 7th Ex. Sess., Ch. 4, Sec. 1.)

CHAPTER 9. Urban Water Use Objectives and Water Use Reporting [10609 - 10609.38] (Chapter 9 added by Stats. 2018, Ch. 15, Sec. 7.)

10609. (a) The Legislature finds and declares that this chapter establishes a method to estimate the aggregate amount of water that would have been delivered the previous year by an urban retail water supplier if all that water had been used efficiently. This estimated aggregate water use is the urban retail water supplier’s urban water use objective. The method is based on water use efficiency standards and local service area characteristics for that year. By comparing the amount of water actually used in the previous year with the urban water use objective, local urban water suppliers will be in a better position to help eliminate unnecessary use of water; that is, water used in excess of that needed to accomplish the intended beneficial use.

(b) The Legislature further finds and declares all of the following:

(1) This chapter establishes standards and practices for the following water uses:

(A) Indoor residential use.

(B) Outdoor residential use.

(C) CII water use.

(D) Water losses.

(E) Other unique local uses and situations that can have a material effect on an urban water supplier’s total water use.

(2) This chapter further does all of the following:

(A) Establishes a method to calculate each urban water use objective.

(B) Considers recycled water quality in establishing efficient irrigation standards.

(C) Requires the department to provide or otherwise identify data regarding the unique local conditions to support the calculation of an urban water use objective.

(D) Provides for the use of alternative sources of data if alternative sources are shown to be as accurate as, or more accurate than, the data provided by the department.

(E) Requires annual reporting of the previous year’s water use with the urban water use objective.

(F) Provides a bonus incentive for the amount of potable recycled water used the previous year when comparing the previous year’s water use with the urban water use objective, of up to 10 percent of the urban water use objective.

(3) This chapter requires the department and the board to solicit broad public participation from stakeholders and other interested persons in the development of the standards and the adoption of regulations pursuant to this chapter.

(4) This chapter preserves the Legislature’s authority over long-term water use efficiency target setting and ensures appropriate legislative oversight of the implementation of this chapter by doing all of the following:

(A) Requiring the Legislative Analyst to conduct a review of the implementation of this chapter, including compliance with the adopted standards and regulations, accuracy of the data, use of alternate data, and other
issues the Legislative Analyst deems appropriate.

(c) Providing one-time-only authority to the department and board to adopt water use efficiency standards, except as explicitly provided in this chapter. Authorization to update the standards shall require separate legislation.

(c) It is the intent of the Legislature that the following principles apply to the development and implementation of long-term standards and urban water use objectives:

(1) Local urban retail water suppliers should have primary responsibility for meeting standards-based water use targets, and they shall retain the flexibility to develop their water supply portfolios, design and implement water conservation strategies, educate their customers, and enforce their rules.

(2) Long-term standards and urban water use objectives should advance the state’s goals to mitigate and adapt to climate change.

(3) Long-term standards and urban water use objectives should acknowledge the shade, air quality, and heat-island reduction benefits provided to communities by trees through the support of water-efficient irrigation practices that keep trees healthy.

(4) The state should identify opportunities for streamlined reporting, eliminate redundant data submissions, and incentivize open access to data collected by urban and agricultural water suppliers.

(Amended by Stats. 2019, Ch. 497, Sec. 287. (AB 991) Effective January 1, 2020.)

10609.2. (a) The board, in coordination with the department, shall adopt long-term standards for the efficient use of water pursuant to this chapter on or before June 30, 2022.

(b) Standards shall be adopted for all of the following:

(1) Outdoor residential water use.

(2) Outdoor irrigation of landscape areas with dedicated irrigation meters in connection with CII water use.

(3) A volume for water loss.

(c) When adopting the standards under this section, the board shall consider the policies of this chapter and the proposed efficiency standards’ effects on local wastewater management, developed and natural parklands, and urban tree health. The standards and potential effects shall be identified by May 30, 2022. The board shall allow for public comment on potential effects identified by the board under this subdivision.

(d) The long-term standards shall be set at a level designed so that the water use objectives, together with other demands excluded from the long-term standards such as CII indoor water use and CII outdoor water use not connected to a dedicated landscape meter, would exceed the statewide conservation targets required pursuant to Chapter 3 (commencing with Section 10608.16).

(e) The board, in coordination with the department, shall adopt by regulation variances recommended by the department pursuant to Section 10609.14 and guidelines and methodologies pertaining to the calculation of an urban retail water supplier’s urban water use objective recommended by the department pursuant to Section 10609.16.

(Added by Stats. 2018, Ch. 15, Sec. 7. (AB 1668) Effective January 1, 2019.)

10609.4. (a) (1) Until January 1, 2025, the standard for indoor residential water use shall be 55 gallons per capita daily.

(2) Beginning January 1, 2025, and until January 1, 2030, the standard for indoor residential water use shall be the greater of 52.5 gallons per capita daily or a standard recommended pursuant to subdivision (b).

(3) Beginning January 1, 2030, the standard for indoor residential water use shall be the greater of 50 gallons per capita daily or a standard recommended pursuant to subdivision (b).

(b) (1) The department, in coordination with the board, shall conduct necessary studies and investigations and may jointly recommend to the Legislature a standard for indoor residential water use that more appropriately reflects best practices for indoor residential water use than the standard described in subdivision (a). A report on the results of the studies and investigations shall be made to the chairpersons of the relevant policy committees of each house of the Legislature by January 1, 2021, and shall include information necessary to support the recommended standard, if there is one. The studies and investigations shall also include an analysis of the benefits and impacts of how the changing standard for indoor residential water use will impact water and wastewater
management, including potable water usage, wastewater, recycling and reuse systems, infrastructure, operations, and supplies.

(2) The studies, investigations, and report described in paragraph (1) shall include collaboration with, and input from, a broad group of stakeholders, including, but not limited to, environmental groups, experts in indoor plumbing, and water, wastewater, and recycled water agencies.

(Added by Stats. 2018, Ch. 15, Sec. 7. (AB 1668) Effective January 1, 2019.)

10609.6. (a) (1) The department, in coordination with the board, shall conduct necessary studies and investigations and recommend, no later than October 1, 2021, standards for outdoor residential use for adoption by the board in accordance with this chapter.

(2) (A) The standards shall incorporate the principles of the model water efficient landscape ordinance adopted by the department pursuant to the Water Conservation in Landscaping Act (Article 10.8 (commencing with Section 65591) of Chapter 3 of Division 1 of Title 7 of the Government Code).

(B) The standards shall apply to irrigable lands.

(C) The standards shall include provisions for swimming pools, spas, and other water features. Ornamental water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, shall be analyzed separately from swimming pools and spas.

(b) The department shall, by January 1, 2021, provide each urban retail water supplier with data regarding the area of residential irrigable lands in a manner that can reasonably be applied to the standards adopted pursuant to this section.

(c) The department shall not recommend standards pursuant to this section until it has conducted pilot projects or studies, or some combination of the two, to ensure that the data provided to local agencies are reasonably accurate for the data’s intended uses, taking into consideration California’s diverse landscapes and community characteristics.

(Added by Stats. 2018, Ch. 15, Sec. 7. (AB 1668) Effective January 1, 2019.)

10609.8. (a) The department, in coordination with the board, shall conduct necessary studies and investigations and recommend, no later than October 1, 2021, standards for outdoor irrigation of landscape areas with dedicated irrigation meters or other means of calculating outdoor irrigation use in connection with CII water use for adoption by the board in accordance with this chapter.

(b) The standards shall incorporate the principles of the model water efficient landscape ordinance adopted by the department pursuant to the Water Conservation in Landscaping Act (Article 10.8 (commencing with Section 65591) of Chapter 3 of Division 1 of Title 7 of the Government Code).

(c) The standards shall include an exclusion for water for commercial agricultural use meeting the definition of subdivision (b) of Section 51201 of the Government Code.

(Added by Stats. 2018, Ch. 15, Sec. 7. (AB 1668) Effective January 1, 2019.)

10609.9. For purposes of Sections 10609.6 and 10609.8, “principles of the model water efficient landscape ordinance” means those provisions of the model water efficient landscape ordinance applicable to the establishment or determination of the amount of water necessary to efficiently irrigate both new and existing landscapes. These provisions include, but are not limited to, all of the following:

(a) Evapotranspiration adjustment factors, as applicable.

(b) Landscape area.

(c) Maximum applied water allowance.

(d) Reference evapotranspiration.

(e) Special landscape areas, including provisions governing evapotranspiration adjustment factors for different types of water used for irrigating the landscape.

(Added by Stats. 2018, Ch. 15, Sec. 7. (AB 1668) Effective January 1, 2019.)

10609.10. (a) The department, in coordination with the board, shall conduct necessary studies and investigations and recommend, no later than October 1, 2021, performance measures for CII water use for adoption by the board in accordance with this chapter.
(b) Prior to recommending performance measures for CII water use, the department shall solicit broad public participation from stakeholders and other interested persons relating to all of the following:

1. Recommendations for a CII water use classification system for California that address significant uses of water.
2. Recommendations for setting minimum size thresholds for converting mixed CII meters to dedicated irrigation meters, and evaluation of, and recommendations for, technologies that could be used in lieu of requiring dedicated irrigation meters.
3. Recommendations for CII water use best management practices, which may include, but are not limited to, water audits and water management plans for those CII customers that exceed a recommended size, volume of water use, or other threshold.
4. Recommendations of appropriate performance measures for CII water use shall be consistent with the October 21, 2013, report to the Legislature by the Commercial, Industrial, and Institutional Task Force entitled "Water Use Best Management Practices," including the technical and financial feasibility recommendations provided in that report, and shall support the economic productivity of California's commercial, industrial, and institutional sectors.

(d) (1) The board, in coordination with the department, shall adopt performance measures for CII water use on or before June 30, 2022.

(2) Each urban retail water supplier shall implement the performance measures adopted by the board pursuant to paragraph (1).

(Added by Stats. 2018, Ch. 15, Sec. 7. (AB 1668) Effective January 1, 2019.)

10609.12. The standards for water loss for urban retail water suppliers shall be the standards adopted by the board pursuant to subdivision (i) of Section 10608.34.

(Added by Stats. 2018, Ch. 15, Sec. 7. (AB 1668) Effective January 1, 2019.)

10609.14. (a) The department, in coordination with the board, shall conduct necessary studies and investigations and, no later than October 1, 2021, recommend for adoption by the board in accordance with this chapter appropriate variances for unique uses that can have a material effect on an urban retail water supplier's urban water use objective.

(b) Appropriate variances may include, but are not limited to, allowances for the following:

1. Significant use of evaporative coolers.
2. Significant populations of horses and other livestock.
4. Significant landscaped areas irrigated with recycled water having high levels of total dissolved solids.
5. Significant use of water for soil compaction and dust control.
6. Significant use of water to supplement ponds and lakes to sustain wildlife.
7. Significant use of water to irrigate vegetation for fire protection.
8. Significant use of water for commercial or noncommercial agricultural use.

(c) The department, in recommending variances for adoption by the board, shall also recommend a threshold of significance for each recommended variance.

(d) Before including any specific variance in calculating an urban retail water supplier's water use objective, the urban retail water supplier shall request and receive approval by the board for the inclusion of that variance.

(e) The board shall post on its Internet Web site all of the following:

1. A list of all urban retail water suppliers with approved variances.
2. The specific variance or variances approved for each urban retail water supplier.
3. The data supporting approval of each variance.

(Added by Stats. 2018, Ch. 15, Sec. 7. (AB 1668) Effective January 1, 2019.)

10609.15. To help streamline water data reporting, the department and the board shall do all of the following:

(a) Identify urban water reporting requirements shared by both agencies, and post on each agency's Internet Web site how the data is used for planning, regulatory, or other purposes.
(b) Analyze opportunities for more efficient publication of urban water reporting requirements within each agency, and analyze how each agency can integrate various data sets in a publicly accessible location, identify priority actions, and implement priority actions identified in the analysis.

(c) Make appropriate data pertaining to the urban water reporting requirements that are collected by either agency available to the public according to the principles and requirements of the Open and Transparent Water Data Act (Part 4.9 (commencing with Section 12400)).

(Added by Stats. 2018, Ch. 15, Sec. 7. (AB 1668) Effective January 1, 2019.)

10609.16. The department, in coordination with the board, shall conduct necessary studies and investigations and recommend, no later than October 1, 2021, guidelines and methodologies for the board to adopt that identify how an urban retail water supplier calculates its urban water use objective. The guidelines and methodologies shall address, as necessary, all of the following:

(a) Determining the irrigable lands within the urban retail water supplier’s service area.

(b) Updating and revising methodologies described pursuant to subparagraph (A) of paragraph (1) of subdivision (h) of Section 10608.20, as appropriate, including methodologies for calculating the population in an urban retail water supplier’s service area.

(c) Using landscape area data provided by the department or alternative data.

(d) Incorporating precipitation data and climate data into estimates of a urban retail water supplier’s outdoor irrigation budget for its urban water use objective.

(e) Estimating changes in outdoor landscape area and population, and calculating the urban water use objective, for years when updated landscape imagery is not available from the department.

(f) Determining acceptable levels of accuracy for the supporting data, the urban water use objective, and compliance with the urban water use objective.

(Added by Stats. 2018, Ch. 15, Sec. 7. (AB 1668) Effective January 1, 2019.)

10609.18. The department and the board shall solicit broad public participation from stakeholders and other interested persons in the development of the standards and the adoption of regulations pursuant to this chapter. The board shall hold at least one public meeting before taking any action on any standard or variance recommended by the department.

(Added by Stats. 2018, Ch. 15, Sec. 7. (AB 1668) Effective January 1, 2019.)

10609.20. (a) Each urban retail water supplier shall calculate its urban water use objective no later than January 1, 2024, and by January 1 every year thereafter.

(b) The calculation shall be based on the urban retail water supplier’s water use conditions for the previous calendar or fiscal year.

(c) Each urban water supplier’s urban water use objective shall be composed of the sum of the following:

(1) Aggregate estimated efficient indoor residential water use.

(2) Aggregate estimated efficient outdoor residential water use.

(3) Aggregate estimated efficient outdoor irrigation of landscape areas with dedicated irrigation meters or equivalent technology in connection with CII water use.

(4) Aggregate estimated efficient water losses.

(5) Aggregate estimated water use in accordance with variances, as appropriate.

(d) (1) An urban retail water supplier that delivers water from a groundwater basin, reservoir, or other source that is augmented by potable reuse water may adjust its urban water use objective by a bonus incentive calculated pursuant to this subdivision.

(2) The water use objective bonus incentive shall be the volume of its potable reuse delivered to residential water users and to landscape areas with dedicated irrigation meters in connection with CII water use, on an acre-foot basis.

(3) The bonus incentive pursuant to paragraph (1) shall be limited in accordance with one of the following:

(A) The bonus incentive shall not exceed 15 percent of the urban water supplier’s water use objective for any potable reuse water produced at an existing facility.
(B) The bonus incentive shall not exceed 10 percent of the urban water supplier’s water use objective for any potable reuse water produced at any facility that is not an existing facility.

(4) For purposes of this subdivision, “existing facility” means a facility that meets all of the following:

(A) The facility has a certified environmental impact report, mitigated negative declaration, or negative declaration on or before January 1, 2019.

(B) The facility begins producing and delivering potable reuse water on or before January 1, 2022.

(C) The facility uses microfiltration and reverse osmosis technologies to produce the potable reuse water.

(e) (1) The calculation of the urban water use objective shall be made using landscape area and other data provided by the department and pursuant to the standards, guidelines, and methodologies adopted by the board. The department shall provide data to the urban water supplier at a level of detail sufficient to allow the urban water supplier to verify its accuracy at the parcel level.

(2) Notwithstanding paragraph (1), an urban retail water supplier may use alternative data in calculating the urban water use objective if the supplier demonstrates to the department that the alternative data are equivalent, or superior, in quality and accuracy to the data provided by the department. The department may provide technical assistance to an urban retail water supplier in evaluating whether the alternative data are appropriate for use in calculating the supplier’s urban water use objective.

(Amended by Stats. 2019, Ch. 239, Sec. 2. (AB 1414) Effective January 1, 2020.)

**10609.21.** (a) For purposes of Section 10609.20, and notwithstanding paragraph (4) of subdivision (d) of Section 10609.20, “existing facility” also includes the North City Project, phase one of the Pure Water San Diego Program, for which an environmental impact report was certified on April 10, 2018.

(b) This section shall become operative on January 1, 2019.

(Added by Stats. 2018, Ch. 453, Sec. 4. (SB 875) Effective September 17, 2018. Section operative January 1, 2019, by its own provisions.)

**10609.22.** (a) An urban retail water supplier shall calculate its actual urban water use no later than January 1, 2024, and by January 1 every year thereafter.

(b) The calculation shall be based on the urban retail water supplier’s water use for the previous calendar or fiscal year.

(c) Each urban water supplier’s urban water use shall be composed of the sum of the following:

1. Aggregate residential water use.

2. Aggregate outdoor irrigation of landscape areas with dedicated irrigation meters in connection with CII water use.

3. Aggregate water losses.

(Amended by Stats. 2019, Ch. 239, Sec. 3. (AB 1414) Effective January 1, 2020.)

**10609.24.** (a) An urban retail water supplier shall submit a report to the department no later than January 1, 2024, and by January 1 every year thereafter. The report shall include all of the following:

1. The urban water use objective calculated pursuant to Section 10609.20 along with relevant supporting data.

2. The actual urban water use calculated pursuant to Section 10609.22 along with relevant supporting data.

3. Documentation of the implementation of the performance measures for CII water use.

4. A description of the progress made towards meeting the urban water use objective.

5. The validated water loss audit report conducted pursuant to Section 10608.34.

(b) The department shall post the reports and information on its internet website.

(c) The board may issue an information order or conservation order to, or impose civil liability on, an entity or individual for failure to submit a report required by this section.

(Amended by Stats. 2019, Ch. 239, Sec. 4. (AB 1414) Effective January 1, 2020.)

**10609.25.** As part of the first report submitted to the department by an urban retail water supplier no later than January 1, 2024, pursuant to subdivision (a) of Section 10609.24, each urban retail water supplier shall provide a
narrative that describes the water demand management measures that the supplier plans to implement to achieve its urban water use objective by January 1, 2027.

(Added by Stats. 2019, Ch. 239, Sec. 5. (AB 1414) Effective January 1, 2020.)

10609.26. (a) (1) On and after January 1, 2024, the board may issue informational orders pertaining to water production, water use, and water conservation to an urban retail water supplier that does not meet its urban water use objective required by this chapter. Informational orders are intended to obtain information on supplier activities, water production, and conservation efforts in order to identify technical assistance needs and assist urban water suppliers in meeting their urban water use objectives.

(2) In determining whether to issue an informational order, the board shall consider the degree to which the urban retail water supplier is not meeting its urban water use objective, information provided in the report required by Section 10609.24, and actions the urban retail water supplier has implemented or will implement in order to help meet the urban water use objective.

(3) The board shall share information received pursuant to this subdivision with the department.

(4) An urban water supplier may request technical assistance from the department. The technical assistance may, to the extent available, include guidance documents, tools, and data.

(b) On and after January 1, 2025, the board may issue a written notice to an urban retail water supplier that does not meet its urban water use objective required by this chapter. The written notice may warn the urban retail water supplier that it is not meeting its urban water use objective described in Section 10609.20 and is not making adequate progress in meeting the urban water use objective, and may request that the urban retail water supplier address areas of concern in its next annual report required by Section 10609.24. In deciding whether to issue a written notice, the board may consider whether the urban retail water supplier has received an informational order, the degree to which the urban retail water supplier is not meeting its urban water use objective, information provided in the report required by Section 10609.24, and actions the urban retail water supplier has implemented or will implement in order to help meet its urban water use objective.

(c) (1) On and after January 1, 2026, the board may issue a conservation order to an urban retail water supplier that does not meet its urban water use objective. A conservation order may consist of, but is not limited to, referral to the department for technical assistance, requirements for education and outreach, requirements for local enforcement, and other efforts to assist urban retail water suppliers in meeting their urban water use objective.

(2) In issuing a conservation order, the board shall identify specific deficiencies in an urban retail water supplier’s progress towards meeting its urban water use objective, and identify specific actions to address the deficiencies.

(3) The board may request that the department provide an urban retail water supplier with technical assistance to support the urban retail water supplier’s actions to remedy the deficiencies.

(d) A conservation order issued in accordance with this chapter may include requiring actions intended to increase water-use efficiency, but shall not curtail or otherwise limit the exercise of a water right, nor shall it require the imposition of civil liability pursuant to Section 377.

(Amended by Stats. 2019, Ch. 239, Sec. 6. (AB 1414) Effective January 1, 2020.)

10609.27. Notwithstanding Section 10609.26, the board shall not issue an information order, written notice, or conservation order pursuant to Section 10609.26 if both of the following conditions are met:

(a) The board determines that the urban retail water supplier is not meeting its urban water use objective solely because the volume of water loss exceeds the urban retail water supplier’s standard for water loss.

(b) Pursuant to Section 10608.34, the board is taking enforcement action against the urban retail water supplier for not meeting the performance standards for the volume of water losses.

(Added by Stats. 2019, Ch. 203, Sec. 1. (SB 134) Effective January 1, 2020.)

10609.28. The board may issue a regulation or informational order requiring a wholesale water supplier, an urban retail water supplier, or a distributor of a public water supply, as that term is used in Section 350, to provide a monthly report relating to water production, water use, or water conservation.

(Added by Stats. 2018, Ch. 14, Sec. 12. (SB 606) Effective January 1, 2019.)

10609.30. On or before January 10, 2024, the Legislative Analyst shall provide to the appropriate policy committees of both houses of the Legislature and the public a report evaluating the implementation of the water use efficiency
standards and water use reporting pursuant to this chapter. The board and the department shall provide the Legislative Analyst with the available data to complete this report.

(a) The report shall describe all of the following:

(1) The rate at which urban retail water users are complying with the standards, and factors that might facilitate or impede their compliance.

(2) The accuracy of the data and estimates being used to calculate urban water use objectives.

(3) Indications of the economic impacts, if any, of the implementation of this chapter on urban water suppliers and urban water users, including CII water users.

(4) The frequency of use of the bonus incentive, the volume of water associated with the bonus incentive, value to urban water suppliers of the bonus incentive, and any implications of the use of the bonus incentive on water use efficiency.

(5) The early indications of how implementing this chapter might impact the efficiency of statewide urban water use.

(6) Recommendations, if any, for improving statewide urban water use efficiency and the standards and practices described in this chapter.

(7) Any other issues the Legislative Analyst deems appropriate.

(Added by Stats. 2018, Ch. 14, Sec. 13. (SB 606) Effective January 1, 2019.)

10609.32. It is the intent of the Legislature that the chairperson of the board and the director of the department appear before the appropriate policy committees of both houses of the Legislature on or around January 1, 2026, and report on the implementation of the water use efficiency standards and water use reporting pursuant to this chapter. It is the intent of the Legislature that the topics to be covered include all of the following:

(a) The rate at which urban retail water suppliers are complying with the standards, and factors that might facilitate or impede their compliance.

(b) What enforcement actions have been taken, if any.

(c) The accuracy of the data and estimates being used to calculate urban water use objectives.

(d) Indications of the economic impacts, if any, of the implementation of this chapter on urban water suppliers and urban water users, including CII water users.

(e) The frequency of use of the bonus incentive, the volume of water associated with the bonus incentive, value to urban water suppliers of the bonus incentive, and any implications of the use of the bonus incentive on water use efficiency.

(f) An assessment of how implementing this chapter is affecting the efficiency of statewide urban water use.

(Added by Stats. 2018, Ch. 14, Sec. 14. (SB 606) Effective January 1, 2019.)

10609.34. Notwithstanding Section 15300.2 of Title 14 of the California Code of Regulations, an action of the board taken under this chapter shall be deemed to be a Class 8 action, within the meaning of Section 15308 of Title 14 of the California Code of Regulations, provided that the action does not involve relaxation of existing water conservation or water use standards.

(Added by Stats. 2018, Ch. 14, Sec. 15. (SB 606) Effective January 1, 2019.)

10609.36. (a) Nothing in this chapter shall be construed to determine or alter water rights. Sections 1010 and 1011 apply to water conserved through implementation of this chapter.

(b) Nothing in this chapter shall be construed to authorize the board to update or revise water use efficiency standards authorized by this chapter except as explicitly provided in this chapter. Authorization to update the standards beyond that explicitly provided in this chapter shall require separate legislation.

(c) Nothing in this chapter shall be construed to limit or otherwise affect the use of recycled water as seawater barriers for groundwater salinity management.

(Added by Stats. 2018, Ch. 14, Sec. 16. (SB 606) Effective January 1, 2019.)

10609.38. The board may waive the requirements of this chapter for a period of up to five years for any urban retail water supplier whose water deliveries are significantly affected by changes in water use as a result of damage from a disaster such as an earthquake or fire. In establishing the period of a waiver, the board shall take into
consideration the breadth of the damage and the time necessary for the damaged areas to recover from the disaster.

(Added by Stats. 2018, Ch. 14, Sec. 17. (SB 606) Effective January 1, 2019.)
DIVISION 6. CONSERVATION, DEVELOPMENT, AND UTILIZATION OF STATE WATER RESOURCES [10000 - 12999]
(Heading of Division 6 amended by Stats. 1957, Ch. 1932.)

PART 2.6. URBAN WATER MANAGEMENT PLANNING [10610 - 10657] (Part 2.6 added by Stats. 1983, Ch. 1009, Sec. 1.)

CHAPTER 1. General Declaration and Policy [10610 - 10610.4] (Chapter 1 added by Stats. 1983, Ch. 1009, Aloc. 1.)

10610. This part shall be known and may be cited as the “Urban Water Management Planning Act.”
(Added by Stats. 1983, Ch. 1009, Sec. 1.)

10610.2. (a) The Legislature finds and declares all of the following:

1. The waters of the state are a limited and renewable resource subject to ever-increasing demands.
2. The conservation and efficient use of urban water supplies are of statewide concern; however, the planning for that use and the implementation of those plans can best be accomplished at the local level.
3. A long-term, reliable supply of water is essential to protect the productivity of California’s businesses and economic climate, and increasing long-term water conservation among Californians, improving water use efficiency within the state’s communities and agricultural production, and strengthening local and regional drought planning are critical to California’s resilience to drought and climate change.
4. As part of its long-range planning activities, every urban water supplier should make every effort to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry water years now and into the foreseeable future, and every urban water supplier should collaborate closely with local land-use authorities to ensure water demand forecasts are consistent with current land-use planning.
5. Public health issues have been raised over a number of contaminants that have been identified in certain local and imported water supplies.
6. Implementing effective water management strategies, including groundwater storage projects and recycled water projects, may require specific water quality and salinity targets for meeting groundwater basins water quality objectives and promoting beneficial use of recycled water.
7. Water quality regulations are becoming an increasingly important factor in water agencies’ selection of raw water sources, treatment alternatives, and modifications to existing treatment facilities.
8. Changes in drinking water quality standards may also impact the usefulness of water supplies and may ultimately impact supply reliability.
9. The quality of source supplies can have a significant impact on water management strategies and supply reliability.

(b) This part is intended to provide assistance to water agencies in carrying out their long-term resource planning responsibilities to ensure adequate water supplies to meet existing and future demands for water.
(Amended by Stats. 201B, Ch. 14, Sec. 18. (SB 606) Effective January 1, 2019.)

10610.4 The Legislature finds and declares that it is the policy of the state as follows:

(a) The management of urban water demands and efficient use of water shall be actively pursued to protect both the people of the state and their water resources.
CHAPTER 2. Definitions [10611 - 1 0618] (Chapter 2 added by Stats. 1983, Ch. 1009, Sec. 1.)

10611. Unless the context otherwise requires, the definitions of this chapter govern the construction of this part.
   (Added by Stats. 1983, Ch. 1009, Sec. 1.)

10611.3 “Customer” means a purchaser of water from a water supplier who uses the water for municipal purposes, including residential, commercial, governmental, and industrial uses.
   Added by renumbering Section 10612 by Stats. 2018, Ch. 14, Sec. 20. (SB 606) Effective January 1, 2019.

10611.5 “Demand management” means those water conservation measures, programs, and incentives that prevent the waste of water and promote the reasonable and efficient use and reuse of available supplies.
   (Amended by Stats. 1995, Ch. 854, Sec. 3. Effective January 1, 1996.)

10612 “Drought risk assessment” means a method that examines water shortage risks based on the driest five-year historic sequence for the agency’s water supply, as described in subdivision (b) of Section 10635.
   (Added by Stats. 2018, Ch. 14, Sec. 21. (SB 606) Effective January 1, 2019.)

10613. “Efficient use” means those management measures that result in the most effective use of water so as to prevent its waste or unreasonable use or unreasonable method of use.
   (Added by Stats. 1983, Ch. 1009, Exec. 1.)

10614. “Person” means any individual, firm, association, organization, partnership, business, trust, corporation, company, public agency, or any agency of such an entity.
   (Added by Stats. 1983, Ch. 1009, Sec. 1.)

10615. “Plan” means an urban water management plan prepared pursuant to this part. A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses, reclamation and demand management activities. The components of the plan may vary according to an individual community or area’s characteristics and its capabilities to efficiently use and conserve water. The plan shall address measures for residential, commercial, governmental, and industrial water demand management as set forth in Article 2 (commencing with Section 10630) of Chapter 3. In addition, a strategy and time schedule for implementation shall be included in the plan.
   (Amended by Stats. 1995, Ch. 854, Sec. 4. Effective January 1, 1996.)

10616. “Public agency” means any board, commission, county, city and county, city, regional agency, district, or other public entity.
   (Added by Stats. 1983, Ch. 1009, Sec. 1.)

10616.5 “Recycled water” means the reclamation and reuse of wastewater for beneficial use.
   (Added by Stats. 1995, Ch. 854, Sec. 5. Effective January 1, 1996)

10617. “Urban water supplier” means a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. An urban water supplier includes a supplier or contractor for water, regardless of the basis of right, which distributes or sells for ultimate resale to customers. This part applies only to water
supplied from public water systems subject to Chapter 4 (commencing with Section 116275) of Part 12 of Division 104 of the Health and Safety Code.

(Amended by Stats. 1996, Ch. 1023, Sec. 428. Effective January 29, 1996.)

10617.5. "Water shortage contingency plan" means a document that incorporates the provisions detailed in subdivision (a) of Section 10632 and is subsequently adopted by an urban water supplier pursuant to this article.

(Added by Stats. 2018, Ch. 14, Sec. 22 (SB 606) Effective January 1, 2019)

10618. "Water supply and demand assessment" means a method that looks at current year and one or more dry year supplies and demands for determining water shortage risks, as described in Section 10632.1.

(Added by Stats. 2018, Ch. 14, Sec. 23 (SB 606). Effective January 1, 2019)
CHAPTER 3. Urban Water Management Plans [10620 - 10645] (Chapter 3 added by Stabs. 1983, Ch. 1009, Sec. 1.)

ARTICLE 1. General Provisions [10620 - 10621] (Article 1 added by Stats. 1983, Ch. 1009, Sec. 1.)

10620. (a) Every urban water supplier shall prepare and adopt an urban water management plan in the manner set forth in Article 3 (commencing with Section 10640).

(b) Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.

(c) An urban water supplier indirectly providing water shall not include planning elements in its water management plan as provided in Article 2 (commencing with Section 10630) that would be applicable to urban water suppliers or public agencies directly providing water, or to their customers, without the consent of those suppliers or public agencies.

(d) (I) An urban water supplier may satisfy the requirements of this part by participation in areawide, regional, watershed, or basinwide urban water management planning where those plans will reduce preparation costs and contribute to the achievement of conservation, efficient water use, and improved local drought resilience.

(2) Notwithstanding paragraph (1), each urban water supplier shall develop its own water shortage contingency plan, but an urban water supplier may incorporate, collaborate, and otherwise share information with other urban water suppliers or other governing entities participating in an areawide, regional, watershed, or basinwide urban water management plan, an agricultural management plan, or groundwater sustainability plan development.

(3) Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.

(e) The urban water supplier may prepare the plan with its own staff, by contract, or in cooperation with other governmental agencies.

(f) An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions.

(Amended by Stats. 2018, Ch. 14, Sec. 24. (SB 606) Effective January 1, 2019.)

10621. (a) Each urban water supplier shall update its plan at least once every five years on or before July 1, in years ending in six and one, incorporating updated and new information from the five years preceding each update.

(b) Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days before the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision.

(c) An urban water supplier regulated by the Public Utilities Commission shall include its most recent plan and water shortage contingency plan as part of the supplier’s general rate case filings.

(d) The amendments to, or changes in, the plan shall be adopted and filed in the manner set forth in Article 3 (commencing with Section 10640)

(e) Each urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.
(f) Each urban water supplier shall update and submit its 2020 plan to the department by July 1, 2021.

(Amended by Stats. 2019, Ch. 239, Sec. 7. (AB 1414) Effective January 1, 2020.)
CHAPTER 3. Urban Water Management Plans (Chapter 3 added by Stats. 1983, Ch. 1009, Sec. 1.)

ARTICLE 2. Contents of Plans (Article 2 added by Stats. 1983, Ch. 1009, Sec. 1.)

10630 It is the intention of the Legislature, in enacting this part, to permit levels of water management planning commensurate with the numbers of customers served and the volume of water supplied, while accounting for impacts from climate change.

(Amended by Stats. 2018, Ch. 14, Sec. 26. (SB 606) Effective January 1, 2019.)

10630.5 Each plan shall include a simple lay description of how much water the agency has on a reliable basis, how much it needs for the foreseeable future, what the agency’s strategy is for meeting its water needs, the challenges facing the agency, and any other information necessary to provide a general understanding of the agency's plan.

(Added by Stats. 2018, Ch. 14, Sec. 27. (SB 606) Effective January 1, 2019.)

10631 A plan shall be adopted in accordance with this chapter that shall do all of the following:

(a) Describe the service area of the supplier, including current and projected population, climate, and other social, economic, and demographic factors affecting the supplier’s water management planning. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available. The description shall include the current and projected land uses within the existing or anticipated service area affecting the supplier’s water management planning. Urban water suppliers shall coordinate with local or regional land use authorities to determine the most appropriate land use information, including, where appropriate, land use information obtained from local or regional land use authorities, as developed pursuant to Article 5 (commencing with Section 65300) of Chapter 3 of Division 1 of Title 7 of the Government Code.

(b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a), providing supporting and related information, including all of the following:

(1) A detailed discussion of anticipated supply availability under a normal water year, single dry year, and droughts lasting at least five years, as well as more frequent and severe periods of drought, as described in the drought risk assessment. For each source of water supply, consider any information pertinent to the reliability analysis conducted pursuant to Section 10635, including changes in supply due to climate change.

(2) When multiple sources of water supply are identified, a description of the management of each supply in correlation with the other identified supplies.

(3) For any planned sources of water supply, a description of the measures that are being undertaken to acquire and develop those water supplies.

(4) If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information:

The current version of any groundwater sustainability plan or alternative adopted pursuant to Part 2.74 (commencing with Section 10720), any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management for basins underlying the urban water supplier's service area.
(A) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater. For basins that a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. For a basin that has not been adjudicated, information as to whether the department has identified the basin as a high- or medium-priority basin in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to coordinate with groundwater sustainability agencies or groundwater management agencies listed in subdivision (c) of Section 10723 to maintain or achieve sustainable groundwater conditions in accordance with a groundwater sustainability plan or alternative adopted pursuant to Part 2.74 (commencing with Section 10720).

(B) A detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(C) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(c) Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.

(d) (I) For an urban retail water supplier, quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, based upon information developed pursuant to subdivision (a), identifying the uses among water use sectors, including, but not necessarily limited to, all of the following:

(A) Single-family residential.

(B) Multifamily.

(C) Commercial.

(D) Industrial.

(E) Institutional and governmental.

(F) Landscape.

(G) Sales to other agencies.

(H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.

(I) Agricultural.

(J) Distribution system water loss.

(2) The water use projections shall be in the same five-year increments described in subdivision (a).

(3) (A) The distribution system water loss shall be quantified for each of the five years preceding the plan update, in accordance with rules adopted pursuant to Section 10608.34.

(B) The distribution system water loss quantification shall be reported in accordance with a worksheet approved or developed by the department through a public process. The water loss quantification worksheet shall be based on the water system balance methodology developed by the American Water Works Association.

(C) In the plan due July 1, 2021, and in each update thereafter, data shall be included to show whether the urban retail water supplier met the distribution loss standards enacted by the board pursuant to Section 10608.34.

(4) (A) Water use projections, where available, shall display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use
plans identified by the urban water supplier, as applicable to the service area.

(B) To the extent that an urban water supplier reports the information described in subparagraph (A), an urban water supplier shall do both of the following:

(i) Provide citations of the various codes, standards, ordinances, or transportation and land use plans utilized in making the projections.

(ii) Indicate the extent that the water use projections consider savings from codes, standards, ordinances, or transportation and land use plans. Water use projections that do not account for these water savings shall be noted of that fact.

(e) Provide a description of the supplier’s water demand management measures. This description shall include all of the following:

(1) (A) For an urban retail water supplier, as defined in Section 10608.12, a narrative description that addresses the nature and extent of each water demand management measure implemented over the past five years. The narrative shall describe the water demand management measures that the supplier plans to implement to achieve its water use targets pursuant to Section 10608.20.

(B) For the supplement required of urban retail water suppliers by paragraph (2) of subdivision (f) of Section 10621, a narrative that describes the water demand management measures that the supplier plans to implement to achieve its urban water use objective by January 1, 2027, pursuant to Chapter 9 (commencing with Section 10609) of Part 2.55.

(C) The narrative pursuant to this paragraph shall include descriptions of the following water demand management measures:

(i) Water waste prevention ordinances.

(ii) Metering.

(iii) Conservation pricing.

(iv) Public education and outreach.

(v) Programs to assess and manage distribution system real loss.

(vi) Water conservation program coordination and staffing support.

(vii) Other demand management measures that have a significant impact on water use as measured in gallons per capita per day, including innovative measures, if implemented.

(2) For an urban wholesale water supplier, as defined in Section 10608.12, a narrative description of the items in clauses (ii), (iv), (vi), and (vii) of subparagraph (C) of paragraph (1), and a narrative description of its distribution system asset management and wholesale supplier assistance programs.

(f) Include a description of all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use, as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in normal and single-dry water years and for a period of drought lasting five consecutive water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.

(g) Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.
An urban water supplier that relies upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier’s plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (f). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (f).

(Amended by Stats. 2018, Ch. 14, Sec. 28. (SB 606) Effective January 1, 2019.)

10631.1 (a) The water use projections required by Section 10631 shall include projected water use for single-family and multifamily residential housing needed for lower income households, as defined in Section 50079.5 of the Health and Safety Code, as identified in the housing element of any city, county, or city and county in the service area of the supplier.

(b) It is the intent of the Legislature that the identification of projected water use for single-family and multifamily residential housing for lower income households will assist a supplier in complying with the requirement under Section 65589.7 of the Government Code to grant a priority for the provision of service to housing units affordable to lower income households.

(Added by Stats. 2005, Ch. 727, Sec. 2. Effective January 1, 2006.)

10631.2 (a) In addition to the requirements of Section 10631, an urban water management plan shall include any of the following information that the urban water supplier can readily obtain:

(1) An estimate of the amount of energy used to extract or divert water supplies.
(2) An estimate of the amount of energy used to convey water supplies to the water treatment plants or distribution systems.
(3) An estimate of the amount of energy used to treat water supplies.
(4) An estimate of the amount of energy used to distribute water supplies through its distribution systems.
(5) An estimate of the amount of energy used for treated water supplies in comparison to the amount used for nontreated water supplies.
(6) An estimate of the amount of energy used to place water into or withdraw from storage.
(7) Any other energy-related information the urban water supplier deems appropriate.

(b) The department shall include in its guidance for the preparation of urban water management plans a methodology for the voluntary calculation or estimation of the energy intensity of urban water systems. The department may consider studies and calculations conducted by the Public Utilities Commission in developing the methodology.

(c) The Legislature finds and declares that energy use is only one factor in water supply planning and shall not be considered independently of other factors.

(Amended by Stats. 2018, Ch. 14, Sec. 29. (SB 606a Effective January 1, 2019.)

10632 (a) Every urban water supplier shall prepare and adopt a water shortage contingency plan as part of its urban water management plan that consists of each of the following elements:

(1) The analysis of water supply reliability conducted pursuant to Section 10635.
(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.

(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.

(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.

(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. Locally appropriate demand reduction actions to adequately respond to shortages.

(B) Locally appropriate operational changes.

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

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

(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.

(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.

(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.

(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.

(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.

(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.

(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.

(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.

(Repealed and added by Stats. 2018, Ch. 14, Sec. 32. (SB 606) Effective January 1, 2019.)

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 June 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 June 1 of each year, whichever is later.

(Added by Stats. 2018, Ch. 14, Sec. 33. (SB 606) Effective January 1, 2019.)

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.

(Added by Stats. 2018, Ch. 14, Sec. 34. (SB 606) Effective January 1, 2019.)

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.

(Added by Stats. 2018, Ch. 14, Sec. 35. (SB 606) Effective January 1, 2019.)

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.

(Added by Stats. 2015, Ch. 681, Sec. 1. (SB 664a Effective January 1, 2016.)

10633 The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. The preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier’s service area, and shall include all of the following:

(a) A description of the wastewater collection and treatment systems in the supplier’s service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.

(b) A description of the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.

(c) A description of the recycled water currently being used in the supplier’s service area, including, but not limited to, the type, place, and quantity of use.

(d) A description and quantification of the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.

(e) The projected use of recycled water within the supplier’s service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision.

(f) A description of actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.

(g) A plan for optimizing the use of recycled water in the supplier’s service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.
10634 The plan shall include information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments as described in subdivision (a) of Section 10631, and the manner in which water quality affects water management strategies and supply reliability.

(Added by Stats. 2001, Ch. 644, Sec. 3. Effective January 1, 2002.)
ARTICLE 2.5. Water Service Reliability [10635-10635.] (Article 2.5 added by Stats. 1995, Ch. 854, Sec. 11.)

10635. (a) Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the long-term total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and a drought lasting five consecutive water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.

(b) Every urban water supplier shall include, as part of its urban water management plan, a drought risk assessment for its water service to its customers as part of information considered in developing the demand management measures and water supply projects and programs to be included in the urban water management plan. The urban water supplier may conduct an interim update or updates to this drought risk assessment within the five-year cycle of its urban water management plan update. The drought risk assessment shall include each of the following:

(1) A description of the data, methodology, and basis for one or more supply shortage conditions that are necessary to conduct a drought risk assessment for a drought period that lasts five consecutive water years, starting from the year following when the assessment is conducted.

(2) A determination of the reliability of each source of supply under a variety of water shortage conditions. This may include a determination that a particular source of water supply is fully reliable under most, if not all, conditions.

(3) A comparison of the total water supply sources available to the water supplier with the total projected water use for the drought period.

(4) Considerations of the historical drought hydrology, plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.

(c) The urban water supplier shall provide that portion of its urban water management plan prepared pursuant to this article to any city or county within which it provides water supplies no later than 60 days after the submission of its urban water management plan.

(d) Nothing in this article is intended to create a right or entitlement to water service or any specific level of water service.

(e) Nothing in this article is intended to change existing law concerning an urban water supplier’s obligation to provide water service to its existing customers or to any potential future customers.

(Amended by Stats. 2018, Ch. 14, Sec. 36. (SB 606) Effective January 1, 2019.)
CHAPTER 3. Urban Water Management Plans [10620 - 10645] (Chapter 3 added by Stats. 1983, Ch. 1009, Sec. 1.)

ARTICLE 3. Adoption and Implementation of Plans [10640 - 10645] Article 3 added by Stats. 1983, Ch. 1009, Sec. 1.)

10640. (a) Every urban water supplier required to prepare a plan pursuant to this part shall prepare its plan pursuant to Article 2 (commencing with Section 10630). The supplier shall likewise periodically review the plan as required by Section 10621, and any amendments or changes required as a result of that review shall be adopted pursuant to this article.

(b) Every urban water supplier required to prepare a water shortage contingency plan shall prepare a water shortage contingency plan pursuant to Section 10632. 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.

(Amended by Stats. 2018, Ch. 14, Sec. 37. (SB 606a Effective January 1, 2019.)

10641. An urban water supplier required to prepare a plan or a water shortage contingency plan may consult with, and obtain comments from, any public agency or state agency or any person who has special expertise with respect to water demand management methods and techniques.

(Amended by Stats. 2018, Ch. 14, Sec. 38. (SB 606a Effective January 1, 2019.)

10642. Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of both the plan and the water shortage contingency plan. Prior to adopting either, the urban water supplier shall make both the plan and the water shortage contingency plan available for public inspection and shall hold a public hearing or hearings thereon. Prior to any of these hearings, notice of the time and place of the hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code. The urban water supplier shall provide notice of the time and place of a hearing to any city or county within which the supplier provides water supplies. Notices by a local public agency pursuant to this section shall be provided pursuant to Chapter 17.5 (commencing with Section 7290) of Division 7 of Title 1 of the Government Code. A privately owned water supplier shall provide an equivalent notice within its service area. After the hearing or hearings, the plan or water shortage contingency plan shall be adopted as prepared or as modified after the hearing or hearings.

(Amended by Stats. 2018, Ch. 14, Sec. 39. (SB 606a Effective January 1, 2019.)

10643. An urban water supplier shall implement its plan adopted pursuant to this chapter in accordance with the schedule set forth in its plan.

(Added by Stats. 1983, Ch. 1009, Sec. 1.)

10644. (a) (1) An urban water supplier shall submit to the department, the California State Library, and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. Copies of amendments or changes to the plans shall be submitted to the department, the California State Library, and any city or county within which the supplier provides water supplies within 30 days after adoption.

(2) The plan, or amendments to the plan, submitted to the department pursuant to paragraph (1)
shall be submitted electronically and shall include any standardized forms, tables, or displays specified by the department.

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

(c) (1) (A) Notwithstanding Section 10231.5 of the Government Code, the department shall prepare and submit to the Legislature, on or before July 1, in the years ending in seven and two, a report summarizing the status of the plans and water shortage contingency plans adopted pursuant to this part. The report prepared by the department shall identify the exemplary elements of the individual plans and water shortage contingency plans. The department shall provide a copy of the report to each urban water supplier that has submitted its plan and water shortage contingency plan to the department. The department shall also prepare reports and provide data for any legislative hearings designed to consider the effectiveness of plans and water shortage contingency plans submitted pursuant to this part.

(B) The department shall prepare and submit to the board, on or before September 30 of each year, a report summarizing the submitted water supply and demand assessment results along with appropriate reported water shortage conditions and the regional and statewide analysis of water supply conditions developed by the department. As part of the report, the department shall provide a summary and, as appropriate, urban water supplier specific information regarding various shortage response actions implemented as a result of annual supplier-specific water supply and demand assessments performed pursuant to Section 10632.1.

(C) The department shall submit the report to the Legislature for the 2015 plans by July 1, 2017, and the report to the Legislature for the 2020 plans and water shortage contingency plans by July 1, 2022.

(2) A report to be submitted pursuant to subparagraph (A) of paragraph (1) shall be submitted in compliance with Section 9795 of the Government Code.

(d) The department shall make available to the public the standard the department will use to identify exemplary water demand management measures.

(Amended by Stats. 2018, Ch. 14, Sec. 40. (SB 606) Effective January 1, 2019.)

10645. (a) Not later than 30 days after filing a copy of its plan with the department, the urban water supplier and the department shall make the plan available for public review during normal business hours.

(b) Not later than 30 days after filing a copy of its water shortage contingency plan with the department, the urban water supplier and the department shall make the plan available for public review during normal business hours.

(Amended by Stats. 2018, Ch. 14, Sec. 41. (SB 606) Effective January 1, 2019.)
CHAPTER 4. Miscellaneous Provisions (§ 10650 - 10657) (Chapter 4 added by Stats. 1983, Ch. 1009, 1st. 1.)

10650 Any actions or proceedings, other than actions by the board, to attack, review, set aside, void, or annul the acts or decisions of an urban water supplier on the grounds of noncompliance with this part shall be commenced as follows:

(a) An action or proceeding alleging failure to adopt a plan or a water shortage contingency plan shall be commenced within 18 months after that adoption is required by this part.

(b) Any action or proceeding alleging that a plan or water shortage contingency plan, or action taken pursuant to either, does not comply with this part shall be commenced within 90 days after filing of the plan or water shortage contingency plan or an amendment to either pursuant to Section 10644 or the taking of that action.

(Amended by Stats. 2018, Ch. 14, Sec. 42. (SB 606) Effective January 1, 2019.)

10651 In any action or proceeding to attack, review, set aside, void, or annul a plan or a water shortage contingency plan, or an action taken pursuant to either by an urban water supplier on the grounds of noncompliance with this part, the inquiry shall extend only to whether there was a prejudicial abuse of discretion. Abuse of discretion is established if the supplier has not proceeded in a manner required by law or if the action by the water supplier is not supported by substantial evidence.

(Amended by Stats. 2018, Ch. 14, Sec. 43. (SB 606) Effective January 1, 2019)

10652 The California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) does not apply to the preparation and adoption of plans pursuant to this part or to the implementation of actions taken pursuant to Section 10632. Nothing in this part shall be interpreted as exempting from the California Environmental Quality Act any project that would significantly affect water supplies for fish and wildlife, or any project for implementation of the plan, other than projects implementing Section 10632, or any project for expanded or additional water supplies.

(Amended by Stats. 1995, Ch. 854, Sec. 6. Effective January 1, 1996.)

10653 The adoption of a plan shall satisfy any requirements of state law, regulation, or order, including those of the board and the Public Utilities Commission, for the preparation of water management plans, water shortage contingency plans, or conservation plans; provided, that if the board or the Public Utilities Commission requires additional information concerning water conservation, drought response measures, or financial conditions to implement its existing authority, nothing in this part shall be deemed to limit the board or the commission in obtaining that information. The requirements of this part shall be satisfied by any urban water demand management plan that complies with analogous federal laws or regulations after the effective date of this part, and which substantially meets the requirements of this part, or by any existing urban water management plan which includes the contents of a plan required under this part.

(Amended by Stats. 2018, Ch. 14, Sec. 45. (SB 606) Effective January 1, 2019)

10654 An urban water supplier may recover in its rates the costs incurred in preparing its urban water management plan, its drought risk assessment, its water supply and demand assessment, and its water shortage contingency plan and implementing the reasonable water conservation measures included in either of the plans.

(Amended by Stats. 2018, Ch. 14, Sec. 44. (SB 606) Effective January 1, 2019)

10655 If any provision of this part or the application thereof to any person or circumstances is held invalid, that invalidity shall not affect other provisions or applications of this part which can be given effect without the invalid provision or application thereof, and to this end the provisions of this part are severable.
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.

The department may adopt regulations regarding the definitions of water, water use, and reporting periods, and may adopt any other regulations deemed necessary or desirable to implement this part. In developing regulations pursuant to this section, the department shall solicit broad public participation from stakeholders and other interested persons.
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Appendix B

Demonstration of Reduced Delta Reliance
City of Napa
Reduced Reliance on the Delta
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(DWR Table C-4)............................................................................................................................ 5

LIST OF ACRONYMS AND ABBREVIATIONS

City City of Napa
Delta Sacramento-San Joaquin Delta
DWR Department of Water Resources
DWR Guidebook Urban Water Management Plan Guidebook 2020
NapaSan Napa Sanitation District
NCFCWCD Napa County Flood Control & Water Conservation District
SWP State Water Project
UWMP Urban Water Management Plan
WR P1 Delta Plan Policy WR P1
City of Napa
Reduced Reliance on the Delta

The purpose of this document is to demonstrate compliance with the Sacramento-San Joaquin Delta Reform Act of 2009, which is described below, followed by an analysis of the City of Napa’s (City) reduced reliance in accordance with State protocols and expected outcomes for reduced reliance on the Delta.

1.0 SACRAMENTO-SAN JOAQUIN DELTA REFORM ACT OF 2009

Under the Sacramento-San Joaquin Delta Reform Act of 2009, State and local public agencies proposing a “covered action” in the Sacramento-San Joaquin Delta (Delta) must submit a written certification of consistency to the Delta Stewardship Council as to whether the covered action is consistent with applicable Delta Plan policies. Covered actions include a multi-year water transfer, conveyance facility, or new diversion that involves transferring water through, exporting water from, or using water in the Delta. Anyone may appeal a certification of consistency, and if the Delta Stewardship Council grants the appeal, the covered action may not be implemented until the agency proposing the covered action submits a revised certification of consistency, and either no appeal is filed, or the Delta Stewardship Council denies the subsequent appeal.

An urban water supplier that anticipates participating in or receiving water from a proposed covered action is required to provide information in their 2015 and 2020 Urban Water Management Plans (UWMPs) that can then be used in the covered action process to demonstrate consistency with Delta Plan Policy WR P1, Reduce Reliance on the Delta Through Improved Regional Water Self-Reliance (WR P1).

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

(a) Water shall not be exported from, transferred through, or used in the Delta if all of the following apply:

1. One or more water suppliers that would receive water as a result of the export, transfer, or use have failed to adequately contribute to reduced reliance on the Delta and improved regional self-reliance consistent with all of the requirements listed in paragraph (1) of subsection (c);

2. That failure has significantly caused the need for the export, transfer, or use; and

3. The export, transfer, or use would have a significant adverse environmental impact in the Delta.

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

(c)(1) Water suppliers that have done all the following are contributing to reduced reliance on the Delta and improved regional self-reliance and are therefore consistent with this policy:

(A) Completed a current Urban or Agricultural Water Management Plan (Plan) which has been reviewed by the California Department of Water Resources for compliance with the applicable requirements of Water Code Division 6, Parts 2.55, 2.6, and 2.8;

(B) Identified, evaluated, and commenced implementation, consistent with the implementation schedule set forth in the Plan, of all programs and projects included in the Plan that are locally cost effective and technically feasible which reduce reliance on the Delta; and

(C) Included in the Plan, commencing in 2015, the expected outcome for measurable reduction in Delta reliance and improvement in regional self-reliance. The expected outcome for measurable reduction in Delta reliance and improvement in regional self-reliance shall be reported in the Plan as the reduction in the amount of water used, or in the percentage of water used, from the Delta watershed. For the purposes of reporting, water efficiency is considered a new source of water supply, consistent with Water Code section 1011(a).
Reduced Reliance on the Delta

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

The inclusion of this document as an appendix in the 2015 and 2020 UWMPs fulfills the requirements of WR P1 subsection (c)(1) Paragraph A.

Future projects under evaluation as described in Chapter 6 and the Demand Management Measures described in Chapter 9 of the City’s 2020 UWMP fulfill the requirements of WR P1 subsection (c)(1) Paragraph B.

2.0 REDUCED RELIANCE ANALYSIS

The methodology used to determine the City’s reduced Delta reliance and improved regional self-reliance is consistent with the approach detailed by the California Department of Water Resources (DWR) in Appendix C of their “Urban Water Management Plan Guidebook 2020” (DWR Guidebook), issued in March 2021. The following analysis uses narrative justifications to account for supplies and document specific data sources. All data represent average or normal water year conditions and were obtained from the 2020 UWMP, previously adopted UWMPs, and discussions with the City. The analysis was conducted at the retail level, focusing on the City’s demands and available supplies (i.e., local surface water and imported water through the State Water Project (SWP)).

Table 1 through Table 4 present the analysis of the City’s reduced Delta reliance using DWR’s spreadsheet tool and fulfill the requirements of WR P1 subsection (c)(1) Paragraph C. Descriptions of the various inputs of the analysis are provided below:

- **Baseline (2010) and 2015-2045 Conditions** – The analysis uses a normal water year representation of 2010 as the baseline, which is consistent with the approach described in the DWR Guidebook. Data for the City’s 2010 baseline are taken from its 2010 UWMP, while actual conditions for 2015 and 2020 are based on data reported in the City’s 2015 and 2020 UWMPs, respectively. Normal year projections for 2025 through 2045 are also based on the City’s 2020 UWMP. Where historical or projected data were unavailable (e.g., actual supplies used to meet demands), the City provided that information separately.

- **Service Area Water Demands with Water Use Efficiency Accounted For** – These values reflect the City’s actual and projected water use, including potable water demands, recycled water demands, and losses. Water the City delivers to other agencies (City of American Canyon, Town of Yountville, City of St. Helena, City of Calistoga, and California Veterans Home) and Interruptible-Surplus Agricultural customers is excluded.

- **Non-Potable Water Demands** – These values consist of recycled water demands.

- **Water Supplies Contributing to Regional Self-Reliance**
  - **Water Use Efficiency** – This amount is calculated by DWR’s spreadsheet tool based on the City’s baseline demand, actual demands, and expected future demands. For each year, the value shown is the reduction in per capita water demand from the baseline (2010) multiplied by the actual or projected population.
Reduced Reliance on the Delta

— **Water Recycling** – Napa Sanitation District (NapSan) provides recycled water to customers within the City’s drinking water service area. Recycled water contributes to regional self-reliance by reducing the demand for potable water.

— **Water Supplies from the Delta Watershed**
  — **CVP/SWP Contract Supplies** – The City sub-contracts with the Napa County Flood Control & Water Conservation District (NCFCWCD) for imported surface water from the SWP. Beginning in 2000, the City increased its SWP entitlement through transfer agreements with the Kern County Water Agency, the City of St. Helena, and the Town of Yountville.

### Table 1. Calculation of Water Use Efficiency (DWR Table C-1)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Service Area Water Demands with Water Use Efficiency Accounted For</td>
<td>13,730</td>
<td>11,694</td>
<td>13,900</td>
<td>14,265</td>
<td>14,925</td>
<td>15,275</td>
<td>15,575</td>
<td>15,800</td>
</tr>
<tr>
<td>Non-Potable Water Demands</td>
<td>288</td>
<td>437</td>
<td>568</td>
<td>835</td>
<td>1,095</td>
<td>1,095</td>
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<td>1,095</td>
</tr>
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<td>Potable Service Area Demands with Water Use Efficiency Accounted For</td>
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<td>11,257</td>
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<td>13,830</td>
<td>14,180</td>
<td>14,480</td>
<td>14,705</td>
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</table>

<table>
<thead>
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<th></th>
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<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Service Area Population</td>
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<td>86,906</td>
<td>89,181</td>
<td>91,926</td>
<td>95,001</td>
<td>96,436</td>
<td>97,871</td>
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<table>
<thead>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Per Capita Water Use (GPCD)</td>
<td>138</td>
<td>115</td>
<td>137</td>
<td>134</td>
<td>134</td>
<td>133</td>
<td>134</td>
<td>134</td>
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<td>Baseline (GPCD)</td>
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<td>(1)</td>
<td>(4)</td>
<td>(4)</td>
<td>(5)</td>
<td>(4)</td>
<td>(4)</td>
<td>(4)</td>
</tr>
<tr>
<td>Estimated Water Use Efficiency Since Baseline</td>
<td>2,320</td>
<td>135</td>
<td>390</td>
<td>415</td>
<td>542</td>
<td>464</td>
<td>461</td>
<td>461</td>
</tr>
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</table>

### Table 2. Calculation of Service Area Water Demands Without Water Use Efficiency (DWR Table C-2)

<table>
<thead>
<tr>
<th>Total Service Area Water Demands (Acre-Feet)</th>
<th>Baseline (2010)</th>
<th>2015</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
<th>2035</th>
<th>2040</th>
<th>2045 (Optional)</th>
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<tbody>
<tr>
<td>Service Area Water Demands with Water Use Efficiency Accounted For</td>
<td>13,730</td>
<td>11,694</td>
<td>13,900</td>
<td>14,265</td>
<td>14,925</td>
<td>15,275</td>
<td>15,575</td>
<td>15,800</td>
</tr>
<tr>
<td>Reported Water Use Efficiency or Estimated Water Use Efficiency Since Baseline</td>
<td>-</td>
<td>2,320</td>
<td>135</td>
<td>390</td>
<td>415</td>
<td>542</td>
<td>464</td>
<td>461</td>
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<tr>
<td>Service Area Water Demands without Water Use Efficiency Accounted For</td>
<td>13,730</td>
<td>14,014</td>
<td>14,035</td>
<td>14,655</td>
<td>15,340</td>
<td>15,817</td>
<td>16,039</td>
<td>16,261</td>
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</table>
Table 3. Calculation of Supplies Contributing to Regional Self-Reliance (DWR Table C-3)

<table>
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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Water Use Efficiency</td>
<td>-</td>
<td>2,320</td>
<td>135</td>
<td>390</td>
<td>415</td>
<td>542</td>
<td>464</td>
<td>461</td>
</tr>
<tr>
<td>Water Recycling</td>
<td>288</td>
<td>437</td>
<td>568</td>
<td>835</td>
<td>1,095</td>
<td>1,095</td>
<td>1,095</td>
<td>1,095</td>
</tr>
<tr>
<td>Stormwater Capture and Use</td>
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<td></td>
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<td></td>
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<td></td>
<td></td>
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<tr>
<td>Advanced Water Technologies</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conjunctive Use Projects</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local and Regional Water Supply and Storage Projects</td>
<td>4,260</td>
<td>3,983</td>
<td>4,998</td>
<td>5,930</td>
<td>6,830</td>
<td>7,180</td>
<td>7,980</td>
<td>8,705</td>
</tr>
<tr>
<td>Other Programs and Projects the Contribute to Regional Self-Reliance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Water Supplies Contributing to Regional Self-Reliance</td>
<td>4,548</td>
<td>6,740</td>
<td>5,701</td>
<td>7,155</td>
<td>8,340</td>
<td>8,817</td>
<td>9,539</td>
<td>10,261</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Service Area Water Demands without Water Use Efficiency Accounted For</td>
<td>13,730</td>
<td>14,014</td>
<td>14,035</td>
<td>14,655</td>
<td>15,340</td>
<td>15,817</td>
<td>16,039</td>
<td>16,261</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Change in Regional Self Reliance Baseline (Acre-Feet)</th>
<th>Baseline (2010)</th>
<th>2015</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
<th>2035</th>
<th>2040</th>
<th>2045 (Optional)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Supplies Contributing to Regional Self-Reliance</td>
<td>4,548</td>
<td>6,740</td>
<td>5,701</td>
<td>7,155</td>
<td>8,340</td>
<td>8,817</td>
<td>9,539</td>
<td>10,261</td>
</tr>
<tr>
<td>Change in Water Supplies Contributing to Regional Self-Reliance</td>
<td></td>
<td>2,192</td>
<td>1,153</td>
<td>2,607</td>
<td>3,792</td>
<td>4,269</td>
<td>4,991</td>
<td>5,713</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Percent Change in Regional Self Reliance (As Percent of Demand w/out WUE)</th>
<th>Baseline (2010)</th>
<th>2015</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
<th>2035</th>
<th>2040</th>
<th>2045 (Optional)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent of Water Supplies Contributing to Regional Self-Reliance</td>
<td>33.1%</td>
<td>48.1%</td>
<td>40.6%</td>
<td>48.8%</td>
<td>54.4%</td>
<td>55.7%</td>
<td>59.5%</td>
<td>63.1%</td>
</tr>
<tr>
<td>Change in Percent of Water Supplies Contributing to Regional Self-Reliance</td>
<td></td>
<td>15.0%</td>
<td>7.5%</td>
<td>15.7%</td>
<td>21.2%</td>
<td>22.6%</td>
<td>26.3%</td>
<td>30.0%</td>
</tr>
</tbody>
</table>
3.0 EXPECTED OUTCOMES FOR REDUCED RELIANCE ON THE DELTA

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

The following provides a summary of the near-term (2025) and long-term (2045) expected outcomes for the City’s Delta reliance and regional self-reliance based on the assumptions described in the previous section and DWR’s analysis tool. The results show that the City is measurably reducing reliance on the Delta and improving regional self-reliance, based on the percentage of the City’s water supplies from the Delta watershed.

Expected Outcomes for Regional Self-Reliance (Table 3):

- Near-term (2025) – Normal water year regional self-reliance is expected to increase by approximately 2,600 AFY from the 2010 baseline. Increased use of local and regional water supplies is a major factor, supplemented by recycled water.
- Long-term (2045) – Normal water year regional self-reliance is expected to increase by approximately 5,700 AFY from the 2010 baseline. Increased use of local and regional water supplies is a major factor, supplemented by recycled water.
Reduced Reliance on the Delta

Expected Outcomes for Percent of Water Supplies from the Delta Watershed (Table 4):

- Near-term (2025) – Normal water year reliance on supplies from the Delta watershed is expected to decrease by approximately 16 percent relative to the 2010 baseline.
- Long-term (2045) – Normal water year reliance on supplies from the Delta watershed is expected to decrease by approximately 30 percent relative to the 2010 baseline.

4.0 NEW APPENDIX TO 2015 UWMP

The information contained in this document is also included as a new Appendix L to the City’s 2015 UWMP, consistent with WR P1 subsection (c)(1)(C) (California Code of Regulations, Title 23, Section 5003). As described in Chapter 10 of its 2020 UWMP, the City followed the required public notification, public review and hearing, and adoption processes required by the Urban Water Management Planning Act.

Appendix L to the City’s 2015 UWMP, the 2020 UWMP (including this Appendix), and the Water Shortage Contingency Plan were adopted by the City Council on December 21, 2021 (see Appendix K of the 2020 UWMP).
Appendix C

DWR 2020 Urban Water Management Plan Tables
### Submittal Table 2-1 Retail Only: Public Water Systems

<table>
<thead>
<tr>
<th>Public Water System Number</th>
<th>Public Water System Name</th>
<th>Number of Municipal Connections 2020</th>
<th>Volume of Water Supplied 2020 *</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA2810003</td>
<td>City of Napa</td>
<td>25,264</td>
<td>14,092</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td>25,264</td>
<td>14,092</td>
</tr>
</tbody>
</table>

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

NOTES: Volumes are in acre-feet (AF). Excludes 591 AF treated & wheeled to the cities of American Canyon and Calistoga, as those agencies provide the source of supply.

### Submittal Table 2-2: Plan Identification

<table>
<thead>
<tr>
<th>Select Only One</th>
<th>Type of Plan</th>
<th>Name of RUWMP or Regional Alliance if applicable (select from drop down list)</th>
</tr>
</thead>
<tbody>
<tr>
<td>☑</td>
<td>Individual UWMP</td>
<td></td>
</tr>
<tr>
<td>☐</td>
<td>Water Supplier is also a member of a RUWMP</td>
<td></td>
</tr>
<tr>
<td>☐</td>
<td>Water Supplier is also a member of a Regional Alliance</td>
<td></td>
</tr>
<tr>
<td>☐</td>
<td>Regional Urban Water Management Plan (RUWMP)</td>
<td></td>
</tr>
</tbody>
</table>

NOTES:
Submittal Table 2-3: Supplier Identification

<table>
<thead>
<tr>
<th>Type of Supplier (select one or both)</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Supplier is a wholesaler</td>
</tr>
<tr>
<td>☑ Supplier is a retailer</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fiscal or Calendar Year (select one)</th>
</tr>
</thead>
<tbody>
<tr>
<td>☑ UWMP Tables are in calendar years</td>
</tr>
<tr>
<td>☐ UWMP Tables are in fiscal years</td>
</tr>
</tbody>
</table>

Units of measure used in UWMP *
(select from drop down)

| Unit | AF |

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

NOTES:

Submittal Table 2-4 Retail: Water Supplier Information Exchange

The retail Supplier has informed the following wholesale supplier(s) of projected water use in accordance with Water Code Section 10631.

<table>
<thead>
<tr>
<th>Wholesale Water Supplier Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Napa County Flood Control and Water Conservation District (NCFCWCD)</td>
</tr>
</tbody>
</table>

NOTES: NCFCWCD is the direct local contractor with DWR for State Water Project (SWP) supplies. In this way it acts as a wholesaler to the City, a SWP subcontractor.
### Submittal Table 3-1 Retail: Population - Current and Projected

<table>
<thead>
<tr>
<th>Population Served</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
<th>2035</th>
<th>2040</th>
<th>2045(opt)</th>
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<tbody>
<tr>
<td></td>
<td>86,906</td>
<td>90,486</td>
<td>94,066</td>
<td>97,646</td>
<td>101,226</td>
<td>104,806</td>
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</table>

**NOTES:** 2020 calculated using California Department of Finance E-5 Estimates (May 2020) and persons-per-connection estimates. 2025-2045 projections use incremental 5-year increases derived from the City of Napa General Plan.

---

### Submittal Table 4-1 Retail: Demands for Potable and Non-Potable Water - Actual

<table>
<thead>
<tr>
<th>Use Type</th>
<th>2020 Actual</th>
<th>Additional Description (as needed)</th>
<th>Level of Treatment When Delivered</th>
<th>Volume $^2$</th>
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<tbody>
<tr>
<td>Single Family</td>
<td>Drinking Water</td>
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<td></td>
<td>6,654</td>
</tr>
<tr>
<td>Multi-Family</td>
<td>Drinking Water</td>
<td></td>
<td></td>
<td>1,794</td>
</tr>
<tr>
<td>Commercial</td>
<td>Drinking Water</td>
<td>Commercial businesses, industrial, schools, non-City institutional</td>
<td></td>
<td>2,792</td>
</tr>
<tr>
<td>Institutional/Governmental</td>
<td>Drinking Water</td>
<td>City of Napa municipal accounts</td>
<td></td>
<td>266</td>
</tr>
<tr>
<td>Landscape</td>
<td>Drinking Water</td>
<td>Dedicated irrigation meters</td>
<td></td>
<td>985</td>
</tr>
<tr>
<td>Agricultural irrigation</td>
<td>Drinking Water</td>
<td>Interruptible-Surplus Agreements outside City limits</td>
<td></td>
<td>172</td>
</tr>
<tr>
<td>Sales/Transfers/Exchanges to other Suppliers</td>
<td>Drinking Water</td>
<td>City of St. Helena, Town of Yountville, California Veterans Home</td>
<td></td>
<td>588</td>
</tr>
<tr>
<td>Other</td>
<td>Drinking Water</td>
<td>Hydrant flushing, firefighting (estimate)</td>
<td></td>
<td>32</td>
</tr>
<tr>
<td>Losses</td>
<td>Drinking Water</td>
<td>Real and Apparent Losses (estimate)</td>
<td></td>
<td>809</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>14,092</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

$^1$ Recycled water demands are NOT reported in this table. Recycled water demands are reported in Table 6-4.

$^2$ Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.

**NOTES:** Volumes are in AF. The City is a drinking water provider only and does not distribute raw water to customers.
<table>
<thead>
<tr>
<th>Use Type</th>
<th>Additional Description (as needed)</th>
<th>Projected Water Use&lt;sup&gt;2&lt;/sup&gt;</th>
<th>2025</th>
<th>2030</th>
<th>2035</th>
<th>2040</th>
<th>2045 (opt)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Family</td>
<td></td>
<td></td>
<td>6,500</td>
<td>6,800</td>
<td>6,900</td>
<td>6,950</td>
<td>7,000</td>
</tr>
<tr>
<td>Multi-Family</td>
<td></td>
<td></td>
<td>1,900</td>
<td>2,000</td>
<td>2,100</td>
<td>2,200</td>
<td>2,300</td>
</tr>
<tr>
<td>Commercial</td>
<td>Commercial businesses, industrial, schools, non-City institutional</td>
<td>3,100</td>
<td>3,200</td>
<td>3,400</td>
<td>3,500</td>
<td>3,675</td>
<td></td>
</tr>
<tr>
<td>Institutional/Governmental</td>
<td>City of Napa municipal accounts</td>
<td>200</td>
<td>200</td>
<td>200</td>
<td>200</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>Landscape</td>
<td>Dedicated irrigation meters</td>
<td>900</td>
<td>900</td>
<td>950</td>
<td>1,000</td>
<td>1,000</td>
<td></td>
</tr>
<tr>
<td>Agricultural irrigation</td>
<td>Interruptible-Surplus Agreements outside City limits</td>
<td>200</td>
<td>225</td>
<td>225</td>
<td>250</td>
<td>250</td>
<td></td>
</tr>
<tr>
<td>Sales/Transfers/Exchanges to other Suppliers</td>
<td>City of St. Helena, Town of Yountville, California Veterans Home</td>
<td>600</td>
<td>600</td>
<td>600</td>
<td>600</td>
<td>600</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>Hydrant flushing, firefighting (estimate)</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Losses</td>
<td>Real and Apparent Losses</td>
<td>800</td>
<td>700</td>
<td>600</td>
<td>600</td>
<td>500</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td><strong>14,230</strong></td>
<td><strong>14,655</strong></td>
<td><strong>15,005</strong></td>
<td><strong>15,330</strong></td>
<td><strong>15,555</strong></td>
</tr>
</tbody>
</table>

<sup>1</sup> Recycled water demands are NOT reported in this table. Recycled water demands are reported in Table 6-4.

<sup>2</sup> Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.

NOTES: Volumes are in AF. Single-family tracks with population growth from 2019-2020 average water use. Multi-family and commercial track higher due to anticipated development pattern.
### Submittal Table 4-3 Retail: Total Water Use (Potable and Non-Potable)

<table>
<thead>
<tr>
<th></th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
<th>2035</th>
<th>2040</th>
<th>2045 (opt)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potable Water, Raw, Other</td>
<td>14,092</td>
<td>14,230</td>
<td>14,655</td>
<td>15,005</td>
<td>15,330</td>
<td>15,555</td>
</tr>
<tr>
<td>Non-potable</td>
<td>From Tables 4-1R and 4-2 R</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recycled Water Demand&lt;sup&gt;1&lt;/sup&gt;</td>
<td>568</td>
<td>835</td>
<td>1,095</td>
<td>1,095</td>
<td>1,095</td>
<td>1,095</td>
</tr>
<tr>
<td>From Table 6-4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Optional Deduction of</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recycled Water Put Into</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long-Term Storage&lt;sup&gt;2&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL WATER USE</strong></td>
<td>14,660</td>
<td>15,065</td>
<td>15,750</td>
<td>16,100</td>
<td>16,425</td>
<td>16,650</td>
</tr>
</tbody>
</table>

<sup>1</sup> Recycled water demand fields will be blank until Table 6-4 is complete

<sup>2</sup> Long term storage means water placed into groundwater or surface storage that is not removed from storage in the same year. Supplier may deduct recycled water placed in long-term storage from their reported demand. This value is manually entered into Table 4-3.

**NOTES:** Volumes are in AF. Recycled water demands are met by the Napa Sanitation District.

### Submittal Table 4-4 Retail: Last Five Years of Water Loss Audit Reporting

<table>
<thead>
<tr>
<th>Reporting Period Start Date (mm/yyyy)</th>
<th>Volume of Water Loss&lt;sup&gt;1,2&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>01/2016</td>
<td>878</td>
</tr>
<tr>
<td>01/2017</td>
<td>1,147</td>
</tr>
<tr>
<td>01/2018</td>
<td>643</td>
</tr>
<tr>
<td>01/2019</td>
<td>1,034</td>
</tr>
<tr>
<td>01/2020</td>
<td>809</td>
</tr>
</tbody>
</table>

<sup>1</sup> Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet.

<sup>2</sup> Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.

**NOTES:** Volumes are in AF. Since the 2020 water loss audit is in progress, 2020 losses are estimated based on supply and billing data.
### Submittal Table 4-5 Retail Only: Inclusion in Water Use Projections

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are Future Water Savings Included in Projections? (Refer to Appendix K of UWMP Guidebook)</td>
<td>Yes</td>
</tr>
<tr>
<td>If &quot;Yes&quot; to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, or otherwise are utilized in demand projections are found.</td>
<td>Section 4.4</td>
</tr>
<tr>
<td>Are Lower Income Residential Demands Included In Projections?</td>
<td>Yes</td>
</tr>
</tbody>
</table>

### Notes:

### Submittal Table 5-1 Baselines and Targets Summary

#### From SB X7-7 Verification Form

**Retail Supplier or Regional Alliance Only**

<table>
<thead>
<tr>
<th>Baseline Period</th>
<th>Start Year *</th>
<th>End Year *</th>
<th>Average Baseline GPCD*</th>
<th>Confirmed 2020 Target*</th>
</tr>
</thead>
<tbody>
<tr>
<td>10-15 year</td>
<td>1995</td>
<td>2004</td>
<td>166</td>
<td></td>
</tr>
<tr>
<td>5 Year</td>
<td>2004</td>
<td>2008</td>
<td>161</td>
<td>132</td>
</tr>
</tbody>
</table>

*All cells in this table should be populated manually from the supplier's SBX7-7 Verification Form and reported in Gallons per Capita per Day (GPCD)*

### Notes:
## Submittal Table 5-2: 2020 Compliance From SB X7-7 2020 Compliance Form

### Retail Supplier or Regional Alliance Only

<table>
<thead>
<tr>
<th>2020 GPCD</th>
<th></th>
<th></th>
<th>2020 Confirmed Target GPCD*</th>
<th>Did Supplier Achieve Targeted Reduction for 2020? Y/N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual 2020 GPCD*</td>
<td>2020 TOTAL Adjustments*</td>
<td>Adjusted 2020 GPCD* (Adjusted if applicable)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>137</td>
<td>0</td>
<td>137</td>
<td>132</td>
<td>No</td>
</tr>
</tbody>
</table>

*All cells in this table should be populated manually from the supplier's SBX7-7 2020 Compliance Form and reported in Gallons per Capita per Day (GPCD)

NOTES: While GPCD was just 128 in 2019, pandemic-related increases in residential demand and a historically dry calendar year 2020 resulted in an uptick to 137 GPCD, just exceeding the target.

## Submittal Table 6-1 Retail: Groundwater Volume Pumped

- **☑** Supplier does not pump groundwater. The supplier will not complete the table below.
- **☐** All or part of the groundwater described below is desalinated.

<table>
<thead>
<tr>
<th>Groundwater Type Drop Down List May use each category multiple times</th>
<th>Location or Basin Name</th>
<th>2016*</th>
<th>2017*</th>
<th>2018*</th>
<th>2019*</th>
<th>2020*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

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

NOTES:
<table>
<thead>
<tr>
<th>Wastewater Collection</th>
<th>Recipient of Collected Wastewater</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of Wastewater Collection Agency</td>
<td>Napa Sanitation District</td>
</tr>
<tr>
<td>Wastewater Volume Metered or Estimated?</td>
<td>Metered</td>
</tr>
<tr>
<td>Volume of Wastewater Collected from UWMP Service Area 2020 *</td>
<td>6,683</td>
</tr>
<tr>
<td>Name of Wastewater Treatment Agency Receiving Collected Wastewater</td>
<td>Napa Sanitation District</td>
</tr>
<tr>
<td>Treatment Plant Name</td>
<td>Soscol Water Recycling Facility</td>
</tr>
<tr>
<td>Is WWTP Located Within UWMP Area?</td>
<td>Yes</td>
</tr>
<tr>
<td>Is WWTP Operation Contracted to a Third Party? (optional)</td>
<td>No</td>
</tr>
</tbody>
</table>

Total Wastewater Collected from Service Area in 2020: 6,683

*Units of measure [AF, CCF, MG] must remain consistent throughout the UWMP as reported in Table 2-3.

NOTES: Volumes are in AF. Plant influent data obtained from NapaSan staff in May 2021.
Submittal Table 6-3 Retail: Wastewater Treatment and Discharge Within Service Area in 2020

<table>
<thead>
<tr>
<th>Wastewater Treatment Plant Name</th>
<th>Discharge Location Name or Identifier</th>
<th>Discharge Location Description</th>
<th>Method of Disposal</th>
<th>Does This Plant Treat Wastewater Generated Outside the Service Area?</th>
<th>Treatment Level</th>
<th>2020 Volumes</th>
<th>Instream Flow Permit Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soscol Water Recycling Facility</td>
<td>Napa River</td>
<td>38° 14' 09&quot; N 122° 17' 10&quot; W</td>
<td>River or creek outfall</td>
<td>Yes</td>
<td>Secondary, Disinfected - 23</td>
<td>Wastewater Treated</td>
<td>3,607</td>
</tr>
<tr>
<td>Soscol Water Recycling Facility</td>
<td>N/A</td>
<td>Other</td>
<td>Yes</td>
<td>Tertiary</td>
<td>3,076</td>
<td>0</td>
<td>568</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6,683</td>
<td>2,487</td>
<td>568</td>
</tr>
</tbody>
</table>

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

2 If the Wastewater Discharge ID Number is not available to the UWMP preparer, access the SWRCB CIWQS regulated facility website at https://ciwqs.waterboards.ca.gov/ciwqs/readOnly/CiwqsReportServlet?inCommand=reset&reportName=RegulatedFacility

NOTES: Volumes are in AF. Total wastewater treated and recycled water breakdown obtained from NapaSan staff in May 2021. Difference between secondary treated and discharged is evaporative loss from oxidation ponds. Table does include recycled volumes that were outside of the City's drinking water service area. As shown, 568 AF was recycled within the City's service area in 2020. Future projections for that category are shown in DWR Table 6-4 R.
<table>
<thead>
<tr>
<th>Potential Beneficial Uses of Recycled Water (Describe)</th>
<th>Amount of Potential Uses of Recycled Water (Quantity)</th>
<th>General Description of 2020 Uses</th>
<th>Level of Treatment Drop down list</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
<th>2035</th>
<th>2040</th>
<th>2045 (opt)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vineyard Irrigation</td>
<td>150 AF</td>
<td>Vineyard Irrigation</td>
<td>Tertiary</td>
<td>62</td>
<td>100</td>
<td>120</td>
<td>120</td>
<td>120</td>
<td>120</td>
</tr>
<tr>
<td>Napa Municipal Golf Course at Kennedy Park</td>
<td>250 AF</td>
<td>Napa Municipal Golf Course at Kennedy Park</td>
<td>Tertiary</td>
<td>241</td>
<td>220</td>
<td>220</td>
<td>220</td>
<td>220</td>
<td>220</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td></td>
<td></td>
<td></td>
<td>568</td>
<td>835</td>
<td>1,095</td>
<td>1,095</td>
<td>1,095</td>
<td>1,095</td>
</tr>
</tbody>
</table>

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

NOTES: Volumes are in AF. While no additional golf courses exist in the City service area and that recycled use type will remain steady, vineyard irrigation and commercial/institutional landscaping uses are projected to expand based on NapaSan policy.
### Submittal Table 6-5 Retail: 2015 UWMP Recycled Water Use Projection Compared to 2020 Actual

<table>
<thead>
<tr>
<th>Beneficial Use Type</th>
<th>2015 Projection for 2020</th>
<th>2020 Actual Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural irrigation</td>
<td>100</td>
<td>62</td>
</tr>
<tr>
<td>Landscape irrigation (exc golf courses)</td>
<td>350</td>
<td>265</td>
</tr>
<tr>
<td>Golf course irrigation</td>
<td>200</td>
<td>241</td>
</tr>
<tr>
<td>Commercial use</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industrial use</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geothermal and other energy production</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seawater intrusion barrier</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recreational impoundment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetlands or wildlife habitat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Groundwater recharge (IPR)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reservoir water augmentation (IPR)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct potable reuse</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (Description Required)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>650</strong></td>
<td><strong>568</strong></td>
</tr>
</tbody>
</table>

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

NOTE: Volumes are in AF. 2015 UWMP overestimated agricultural usage for Stanly Ranch Vineyards and the rate at which commercial landscapes in South Napa would be switched to recycled water.
### Submittal Table 6-6 Retail: Methods to Expand Future Recycled Water Use

<table>
<thead>
<tr>
<th>Name of Action</th>
<th>Description</th>
<th>Planned Implementation Year</th>
<th>Expected Increase in Recycled Water Use *</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Napa Infill</td>
<td>Connect commercial landscapes in Imola Avenue development</td>
<td>2022</td>
<td>105</td>
</tr>
<tr>
<td>Vineyards in Stanly Lane area</td>
<td>Connect remaining unconnected vineyards in southwest Napa</td>
<td>2022</td>
<td>40</td>
</tr>
<tr>
<td>Stanly Ranch Resort</td>
<td>Connect landscape and vineyard irrigation at new resort and housing complex</td>
<td>2023</td>
<td>60</td>
</tr>
<tr>
<td>Gasser Infill</td>
<td>Connect landscape irrigation for Gasser Foundation land development projects</td>
<td>2024</td>
<td>105</td>
</tr>
<tr>
<td>Napa Pipe</td>
<td>Full connection of all common area landscaping in Napa Pipe project</td>
<td>2026</td>
<td>130</td>
</tr>
<tr>
<td>Napa State Hospital</td>
<td>Full connection for entire facility landscape irrigation</td>
<td>2027</td>
<td>110</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>550</strong></td>
</tr>
</tbody>
</table>

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

NOTES: Volumes are in AF. Table represents actions within City of Napa drinking water service area only.

### Submittal Table 6-7 Retail: Expected Future Water Supply Projects or Programs

<table>
<thead>
<tr>
<th>Name of Future Projects or Programs</th>
<th>Joint Project with other suppliers?</th>
<th>Description (if needed)</th>
<th>Planned Implementation Year</th>
<th>Planned for Use in Year Type</th>
<th>Expected Increase in Water Supply to Supplier*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(y/n)</td>
<td>Drop Down List</td>
<td>Drop Down List</td>
<td>Drop Down List</td>
<td>This may be a range</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

NOTES:
### Submittal Table 6-8  Retail: Water Supplies — Actual

<table>
<thead>
<tr>
<th>Water Supply</th>
<th>Additional Detail on Water Supply</th>
<th>2020 Actual Volume*</th>
<th>Water Quality Drop Down List</th>
<th>Total Right or Safe Yield* (optional)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Drop down list</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supply from Storage</td>
<td>Lake Hennessey</td>
<td>5,170</td>
<td>Drinking Water</td>
<td></td>
</tr>
<tr>
<td>Supply from Storage</td>
<td>Milliken Reservoir</td>
<td>0</td>
<td>Drinking Water</td>
<td></td>
</tr>
<tr>
<td>Purchased or Imported Water</td>
<td>State Water Project</td>
<td>8,922</td>
<td>Drinking Water</td>
<td></td>
</tr>
<tr>
<td>Recycled Water</td>
<td>Napa Sanitation District</td>
<td>568</td>
<td>Recycled Water</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>14,660</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

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

NOTES: Volumes are in AF and represent actual supplies delivered from each source in 2020. Recycled water is supplied by NapaSan directly to end users within City’s drinking water service area.
### Submittal Table 6-9 Retail: Water Supplies — Projected

<table>
<thead>
<tr>
<th>Water Supply</th>
<th>Additional Detail on Water Supply</th>
<th>2025</th>
<th>2030</th>
<th>2035</th>
<th>2040</th>
<th>2045 (opt)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Reasonably Available Volume</td>
<td>Total Right or Safe Yield (optional)</td>
<td>Reasonably Available Volume</td>
<td>Total Right or Safe Yield (optional)</td>
<td>Reasonably Available Volume</td>
</tr>
<tr>
<td>Supply from Storage</td>
<td>Lake Hennessey</td>
<td>17,500</td>
<td>17,500</td>
<td>15,750</td>
<td>15,750</td>
<td>15,750</td>
</tr>
<tr>
<td></td>
<td>Milliken Reservoir</td>
<td>700</td>
<td>700</td>
<td>630</td>
<td>630</td>
<td>630</td>
</tr>
<tr>
<td>Purchased or Imported Water</td>
<td>State Water Project</td>
<td>12,702</td>
<td>12,702</td>
<td>11,432</td>
<td>11,432</td>
<td>11,432</td>
</tr>
<tr>
<td>Recycled Water</td>
<td>Napa Sanitation District</td>
<td>835</td>
<td>1,095</td>
<td>1,095</td>
<td>1,095</td>
<td>1,095</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>31,737</strong></td>
<td><strong>31,997</strong></td>
<td><strong>28,907</strong></td>
<td><strong>28,907</strong></td>
<td><strong>28,907</strong></td>
</tr>
</tbody>
</table>

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

NOTES: Volumes are in AF and are estimates based on a normal (average) water year. State Water Project supplies are 58 percent of Table A, with no Carryover, Article 21, or North of Delta allocation assumed (derived from The Final State Water Project Delivery Capability Report 2019, DWR, August 26, 2020). 2035 and beyond incorporate a 10 percent reduction in average supplies due to assumed climate change impacts. Recycled water volumes are from DWR Table 6-4 R.
## Submittal Table 7-1 Retail: Basis of Water Year Data (Reliability Assessment)

<table>
<thead>
<tr>
<th>Year Type</th>
<th>Base Year</th>
<th>Available Supplies if Year Type Repeats</th>
<th>Volume Available *</th>
<th>% of Average Supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Year</td>
<td>1922-2003</td>
<td>Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location __________________________</td>
<td>18,200</td>
<td>100%</td>
</tr>
<tr>
<td>Single Dry Year</td>
<td>2014</td>
<td>Available Supplies if Year Type Repeats</td>
<td>12,000</td>
<td>66%</td>
</tr>
<tr>
<td>Consecutive Dry Years 1st Year</td>
<td>1987</td>
<td>Available Supplies if Year Type Repeats</td>
<td>10,640</td>
<td>58%</td>
</tr>
<tr>
<td>Consecutive Dry Years 2nd Year</td>
<td>1988</td>
<td>Available Supplies if Year Type Repeats</td>
<td>5,765</td>
<td>32%</td>
</tr>
<tr>
<td>Consecutive Dry Years 3rd Year</td>
<td>1989</td>
<td>Available Supplies if Year Type Repeats</td>
<td>5,765</td>
<td>32%</td>
</tr>
<tr>
<td>Consecutive Dry Years 4th Year</td>
<td>1990</td>
<td>Available Supplies if Year Type Repeats</td>
<td>5,765</td>
<td>32%</td>
</tr>
<tr>
<td>Consecutive Dry Years 5th Year</td>
<td>1991</td>
<td>Available Supplies if Year Type Repeats</td>
<td>5,765</td>
<td>32%</td>
</tr>
</tbody>
</table>

Supplier may use multiple versions of Table 7-1 if different water sources have different base years and the supplier chooses to report the base years for each water source separately. If a Supplier uses multiple versions of Table 7-1, in the "Note" section of each table, state that multiple versions of Table 7-1 are being used and identify the particular water source that is being reported in each table.

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

NOTES: Volumes are in AF. Multiple versions of DWR Table 7-1 are used; this table is for local surface water (i.e., Lake Hennessey and Milliken Reservoir). Recycled water is not included.
### Submittal Table 7-1 Retail: Basis of Water Year Data (Reliability Assessment)

<table>
<thead>
<tr>
<th>Year Type</th>
<th>Base Year</th>
<th>Available Supplies if Year Type Repeats</th>
<th>Volume Available *</th>
<th>% of Average Supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Year</td>
<td>1922-2003</td>
<td>Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location __________________________</td>
<td>12,702</td>
<td>100%</td>
</tr>
<tr>
<td>Single Dry Year</td>
<td>2014</td>
<td>Quantification of available supplies is provided in this table as either volume only, percent only, or both.</td>
<td>4,867</td>
<td>38%</td>
</tr>
<tr>
<td>Consecutive Dry Years 1st Year</td>
<td>1987</td>
<td></td>
<td>9,466</td>
<td>75%</td>
</tr>
<tr>
<td>Consecutive Dry Years 2nd Year</td>
<td>1988</td>
<td></td>
<td>9,466</td>
<td>75%</td>
</tr>
<tr>
<td>Consecutive Dry Years 3rd Year</td>
<td>1989</td>
<td></td>
<td>9,466</td>
<td>75%</td>
</tr>
<tr>
<td>Consecutive Dry Years 4th Year</td>
<td>1990</td>
<td></td>
<td>9,466</td>
<td>75%</td>
</tr>
<tr>
<td>Consecutive Dry Years 5th Year</td>
<td>1991</td>
<td></td>
<td>9,466</td>
<td>75%</td>
</tr>
</tbody>
</table>

Supplier may use multiple versions of Table 7-1 if different water sources have different base years and the supplier chooses to report the base years for each water source separately. If a Supplier uses multiple versions of Table 7-1, in the "Note" section of each table, state that multiple versions of Table 7-1 are being used and identify the particular water source that is being reported in each table.

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

Notes: Volumes are in AF. Multiple versions of DWR Table 7-1 are used; this table is for SWP supplies. Recycled water is not included.

### Submittal Table 7-2 Retail: Normal Year Supply and Demand Comparison

<table>
<thead>
<tr>
<th></th>
<th>2025</th>
<th>2030</th>
<th>2035</th>
<th>2040</th>
<th>2045 (Opt)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply totals</td>
<td>31,737</td>
<td>31,997</td>
<td>28,907</td>
<td>28,907</td>
<td>28,907</td>
</tr>
<tr>
<td>Demand totals</td>
<td>15,065</td>
<td>15,750</td>
<td>16,100</td>
<td>16,425</td>
<td>16,650</td>
</tr>
<tr>
<td>Difference</td>
<td>16,672</td>
<td>16,247</td>
<td>12,807</td>
<td>12,482</td>
<td>12,257</td>
</tr>
</tbody>
</table>

Notes: Volumes are in AF. Supply and demand totals include recycled water supplied by NapaSan (835 AFY in 2025 and 1,095 AFY in 2030 and beyond).
### Submittal Table 7-3 Retail: Single Dry Year Supply and Demand Comparison

<table>
<thead>
<tr>
<th></th>
<th>2025</th>
<th>2030</th>
<th>2035</th>
<th>2040</th>
<th>2045 (Opt)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply totals*</td>
<td>17,702</td>
<td>17,962</td>
<td>16,275</td>
<td>16,275</td>
<td>16,275</td>
</tr>
<tr>
<td>Demand totals*</td>
<td>15,065</td>
<td>15,750</td>
<td>16,100</td>
<td>16,425</td>
<td>16,650</td>
</tr>
<tr>
<td>Difference</td>
<td>2,637</td>
<td>2,212</td>
<td>175</td>
<td>(150)</td>
<td>(375)</td>
</tr>
</tbody>
</table>

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

NOTES: Volumes are in AF. Supply and demand totals include recycled water supplied by NapaSan (835 AFY in 2025 and 1,095 AFY in 2030 and beyond). Supply totals in 2035 and beyond incorporate a 10 percent reduction in average supplies due to assumed climate change impacts.

### Table 7-3 Retail: Single Dry Year Supply and Demand Comparison (First Year)

<table>
<thead>
<tr>
<th></th>
<th>2025*</th>
<th>2030*</th>
<th>2035*</th>
<th>2040*</th>
<th>2045* (Opt)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply totals</td>
<td>20,941</td>
<td>21,201</td>
<td>19,191</td>
<td>19,191</td>
<td>19,191</td>
</tr>
<tr>
<td>Demand totals</td>
<td>15,065</td>
<td>15,750</td>
<td>16,100</td>
<td>16,425</td>
<td>16,650</td>
</tr>
<tr>
<td>Difference</td>
<td>5,876</td>
<td>5,451</td>
<td>3,091</td>
<td>2,766</td>
<td>2,541</td>
</tr>
</tbody>
</table>

### Table 7-3 Retail: Single Dry Year Supply and Demand Comparison (Second Year)

<table>
<thead>
<tr>
<th></th>
<th>2025*</th>
<th>2030*</th>
<th>2035*</th>
<th>2040*</th>
<th>2045* (Opt)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply totals</td>
<td>16,066</td>
<td>16,326</td>
<td>14,803</td>
<td>14,803</td>
<td>14,803</td>
</tr>
<tr>
<td>Demand totals</td>
<td>15,065</td>
<td>15,750</td>
<td>16,100</td>
<td>16,425</td>
<td>16,650</td>
</tr>
<tr>
<td>Difference</td>
<td>1,001</td>
<td>576</td>
<td>(1,297)</td>
<td>(1,622)</td>
<td>(1,847)</td>
</tr>
</tbody>
</table>

### Table 7-3 Retail: Single Dry Year Supply and Demand Comparison (Third Year)

<table>
<thead>
<tr>
<th></th>
<th>2025*</th>
<th>2030*</th>
<th>2035*</th>
<th>2040*</th>
<th>2045* (Opt)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply totals</td>
<td>16,066</td>
<td>16,326</td>
<td>14,803</td>
<td>14,803</td>
<td>14,803</td>
</tr>
<tr>
<td>Demand totals</td>
<td>15,065</td>
<td>15,750</td>
<td>16,100</td>
<td>16,425</td>
<td>16,650</td>
</tr>
<tr>
<td>Difference</td>
<td>1,001</td>
<td>576</td>
<td>(1,297)</td>
<td>(1,622)</td>
<td>(1,847)</td>
</tr>
</tbody>
</table>

### Table 7-3 Retail: Single Dry Year Supply and Demand Comparison (Fourth Year)

<table>
<thead>
<tr>
<th></th>
<th>2025*</th>
<th>2030*</th>
<th>2035*</th>
<th>2040*</th>
<th>2045* (Opt)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply totals</td>
<td>16,066</td>
<td>16,326</td>
<td>14,803</td>
<td>14,803</td>
<td>14,803</td>
</tr>
<tr>
<td>Demand totals</td>
<td>15,065</td>
<td>15,750</td>
<td>16,100</td>
<td>16,425</td>
<td>16,650</td>
</tr>
<tr>
<td>Difference</td>
<td>1,001</td>
<td>576</td>
<td>(1,297)</td>
<td>(1,622)</td>
<td>(1,847)</td>
</tr>
</tbody>
</table>

### Table 7-3 Retail: Single Dry Year Supply and Demand Comparison (Fifth Year)

<table>
<thead>
<tr>
<th></th>
<th>2025*</th>
<th>2030*</th>
<th>2035*</th>
<th>2040*</th>
<th>2045* (Opt)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply totals</td>
<td>16,066</td>
<td>16,326</td>
<td>14,803</td>
<td>14,803</td>
<td>14,803</td>
</tr>
<tr>
<td>Demand totals</td>
<td>15,065</td>
<td>15,750</td>
<td>16,100</td>
<td>16,425</td>
<td>16,650</td>
</tr>
<tr>
<td>Difference</td>
<td>1,001</td>
<td>576</td>
<td>(1,297)</td>
<td>(1,622)</td>
<td>(1,847)</td>
</tr>
</tbody>
</table>

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

NOTES: Volumes are in AF. Supply and demand totals include recycled water supplied by NapaSan (835 AFY in 2025 and 1,095 AFY in 2030 and beyond). Supply totals in 2035 and beyond incorporate a 10 percent reduction in average supplies due to assumed climate change impacts.
### Submittal Table 7-5: Five-Year Drought Risk Assessment Tables to address Water Code Section 10635(b)

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Water Use</th>
<th>Total Supplies</th>
<th>Surplus/Shortfall w/o WSCP Action</th>
<th>Planned WSCP Actions (use reduction and supply augmentation)</th>
<th>Resulting % Use Reduction from WSCP action</th>
</tr>
</thead>
<tbody>
<tr>
<td>2021</td>
<td>14,741</td>
<td>14,228</td>
<td>(513)</td>
<td>WSCP - supply augmentation benefit</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>WSCP - use reduction savings benefit</td>
<td>513</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Revised Surplus/(shortfall)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3%</td>
</tr>
<tr>
<td>2022</td>
<td>14,822</td>
<td>11,436</td>
<td>(3,386)</td>
<td>WSCP - supply augmentation benefit</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>WSCP - use reduction savings benefit</td>
<td>3,386</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Revised Surplus/(shortfall)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>23%</td>
</tr>
<tr>
<td>2023</td>
<td>14,903</td>
<td>12,912</td>
<td>(1,991)</td>
<td>WSCP - supply augmentation benefit</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>WSCP - use reduction savings benefit</td>
<td>1,991</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Revised Surplus/(shortfall)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>13%</td>
</tr>
<tr>
<td>2024</td>
<td>14,984</td>
<td>12,966</td>
<td>(2,018)</td>
<td>WSCP - supply augmentation benefit</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>WSCP - use reduction savings benefit</td>
<td>2,018</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Revised Surplus/(shortfall)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>13%</td>
</tr>
<tr>
<td>2025</td>
<td>15,065</td>
<td>16,604</td>
<td>1,539</td>
<td>WSCP - supply augmentation benefit</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>WSCP - use reduction savings benefit</td>
<td>1,539</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Revised Surplus/(shortfall)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0%</td>
</tr>
</tbody>
</table>
## Submittal Table 8-1
### Water Shortage Contingency Plan Levels

| Shortage Level | Percent Shortage Range | Shortage Response Actions
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Up to 10%</td>
<td>Implement actions per Table 4 of WSCP.</td>
</tr>
<tr>
<td>2</td>
<td>Up to 20%</td>
<td>Implement actions per Table 4 of WSCP.</td>
</tr>
<tr>
<td>3</td>
<td>Up to 30%</td>
<td>Implement actions per Table 4 of WSCP.</td>
</tr>
<tr>
<td>4</td>
<td>Up to 40%</td>
<td>Implement actions per Table 4 of WSCP.</td>
</tr>
<tr>
<td>5</td>
<td>Up to 50%</td>
<td>Implement actions per Table 4 and Table 5 of WSCP.</td>
</tr>
<tr>
<td>6</td>
<td>&gt;50%</td>
<td>Implement actions per Table 4 and Table 5 of WSCP.</td>
</tr>
</tbody>
</table>

NOTES:
### Submittal Table 8-2: Demand Reduction Actions

<table>
<thead>
<tr>
<th>Shortage Level</th>
<th>Demand Reduction Actions</th>
<th>How much is this going to reduce the shortage gap?</th>
<th>Additional Explanation or Reference</th>
<th>Penalty, Charge, or Other Enforcement?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Expand Public Information Campaign</strong></td>
<td>See Note 1</td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>1</td>
<td><strong>Offer Water Use Surveys</strong></td>
<td>0-5%</td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>1</td>
<td><strong>Provide Rebates for Turf Replacement</strong></td>
<td>0-5%</td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>2</td>
<td><strong>Landscape - Limit landscape irrigation to specific days</strong></td>
<td>0-20%</td>
<td>No person shall use water to irrigate landscaping on consecutive days. See Note 2.</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td><strong>Landscape - Limit landscape irrigation to specific times</strong></td>
<td>0-5%</td>
<td>No person shall use water to irrigate landscaping between the hours of 10:00 a.m. and 5:00 p.m. See Note 2.</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td><strong>Landscape - Other landscape restriction or prohibition</strong></td>
<td>0-1%</td>
<td>No person shall use water to irrigate ornamental turf on public street medians.</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td><strong>Landscape - Other landscape restriction or prohibition</strong></td>
<td>0-1%</td>
<td>No person shall use water to irrigate landscaping during a measurable rainfall event or within 48 hours thereafter</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td><strong>Landscape - Restrict or prohibit runoff from landscape irrigation</strong></td>
<td>0-5%</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td><strong>Other - Require automatic shut off hoses</strong></td>
<td>0-1%</td>
<td>When washing a motor vehicle with a hose, the hose must be fitted with a shutoff nozzle or similar device.</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td><strong>Other water feature or swimming pool restriction</strong></td>
<td>0-1%</td>
<td>No person shall drain and refill any swimming pool unless that person establishes that it is needed for the purpose of pool repair or to correct a severe chemical imbalance. No person shall drain and refill any decorative pond or lake unless that person establishes that it is needed for the purpose of lining the bottom to prevent absorption.</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td><strong>Water Features - Restrict water use for decorative water features, such as fountains</strong></td>
<td>0-1%</td>
<td>Water shall not be used in a decorative fountain or other decorative water feature, except where water is part of a recirculating system.</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td><strong>CII - Restaurants may only serve water upon request</strong></td>
<td>0-1%</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td><strong>CII - Lodging establishment must offer opt out of linen service</strong></td>
<td>0-1%</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td><strong>Other - Prohibit use of potable water for washing hard surfaces</strong></td>
<td>0-1%</td>
<td>Except where necessary to address an immediate health and safety need.</td>
<td>Yes</td>
</tr>
<tr>
<td>3</td>
<td><strong>Landscape - Limit landscape irrigation to specific days</strong></td>
<td>10-25%</td>
<td>No person shall irrigate landscaping more than two days per week.</td>
<td>Yes</td>
</tr>
<tr>
<td>3</td>
<td><strong>Increase Water Waste Patrols</strong></td>
<td>5-10%</td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>3</td>
<td><strong>Other</strong></td>
<td>0-3%</td>
<td>Interruptible-surplus agricultural water agreements may be reduced or suspended.</td>
<td>Yes</td>
</tr>
<tr>
<td>3</td>
<td><strong>Pools and Spas - Require covers for pools and spas</strong></td>
<td>0-2%</td>
<td>Water for hauling shall be limited to indoor domestic uses within Napa County and shall be supplied from the City Corporation Yard only. Verification of delivery to approved address is required.</td>
<td>Yes</td>
</tr>
<tr>
<td>4</td>
<td><strong>Implement or Modify Drought Rate Structure or Surcharge</strong></td>
<td>5-30%</td>
<td>Pools and spas should remain covered when not in use.</td>
<td>Yes</td>
</tr>
<tr>
<td>4</td>
<td><strong>Other</strong></td>
<td>0-3%</td>
<td>Interruptible-surplus agricultural water agreements are suspended.</td>
<td>Yes</td>
</tr>
<tr>
<td>4</td>
<td><strong>Landscape - Limit landscape irrigation to specific days</strong></td>
<td>15-30%</td>
<td>No person shall irrigate landscaping more than one day per week.</td>
<td>Yes</td>
</tr>
<tr>
<td>4</td>
<td><strong>Other - Prohibit use of potable water for construction and dust control</strong></td>
<td>0-1%</td>
<td>Water shall not be used for grading, dust control, street, pipeline or similar heavy construction. Hydrant meters shall not be issued for construction purposes.</td>
<td>Yes</td>
</tr>
<tr>
<td>4</td>
<td><strong>Water Features - Restrict water use for decorative water features, such as fountains</strong></td>
<td>0-1%</td>
<td>Water shall not be used for decorative fountains or the filling of decorative lakes or ponds.</td>
<td>Yes</td>
</tr>
<tr>
<td>4</td>
<td><strong>Other - Prohibit vehicle washing except at facilities using recycled or recirculating water</strong></td>
<td>0-1%</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>5</td>
<td><strong>Landscape - Other landscape restriction or prohibition</strong></td>
<td>0-1%</td>
<td>The installation of new or replacement lawn, sod, or turf is prohibited.</td>
<td>Yes</td>
</tr>
<tr>
<td>5</td>
<td><strong>Landscape - Prohibit certain types of landscape irrigation</strong></td>
<td>5-30%</td>
<td>Residential outdoor watering shall be limited to hand-watering using a hose with a shutoff nozzle, drip, or subsurface irrigation only.</td>
<td>Yes</td>
</tr>
<tr>
<td>5</td>
<td><strong>Other</strong></td>
<td>Depends on extent of existing activities</td>
<td>Water shall not be used for cleaning streets during or following construction activities; flushing sewers, hydrants, storm drains; flow testing for fire sprinkler design and training of fire fighting personnel.</td>
<td>No</td>
</tr>
<tr>
<td>6</td>
<td><strong>Landscape - Prohibit all landscape irrigation</strong></td>
<td>10-40%</td>
<td>Irrigation of turf or lawn is prohibited.</td>
<td>Yes</td>
</tr>
<tr>
<td>6</td>
<td><strong>Other water feature or swimming pool restriction</strong></td>
<td>0-1%</td>
<td>No person shall drain and refill swimming pools or spas, nor shall new pools be filled.</td>
<td>Yes</td>
</tr>
<tr>
<td>6</td>
<td><strong>Landscape - Prohibit certain types of landscape irrigation</strong></td>
<td>0-5%</td>
<td>Water shall not be used for the irrigation of any commercial crops, including vineyards.</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**NOTES:** (1) This action boosts the effectiveness of other actions, so a shortage gap reduction estimate cannot be quantified. (2) Except for the initial watering of newly planted landscaping and germination requirements of newly seeded lawns. (3) Actions introduced in a lower stage will also be used in higher stages, unless otherwise noted.
### Submittal Table 8-3: Supply Augmentation and Other Actions

<table>
<thead>
<tr>
<th>Shortage Level</th>
<th>Supply Augmentation Methods and Other Actions by Water Supplier</th>
<th>How much is this going to reduce the shortage gap? Include units used (volume type or percentage)</th>
<th>Additional Explanation or Reference (optional)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No action at this shortage level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>No action at this shortage level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>No action at this shortage level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Transfers</td>
<td>Market-dependent</td>
<td>State Water Project Dry Year Transfer Program</td>
</tr>
<tr>
<td>5</td>
<td>Other Purchases</td>
<td>Market-dependent</td>
<td>Yuba Accord Dry Year Purchase Program</td>
</tr>
<tr>
<td>6</td>
<td>Other Actions (describe)</td>
<td>Market-dependent</td>
<td>Intertie connections with American Canyon, St. Helena, Calistoga, and Yountville</td>
</tr>
</tbody>
</table>

**NOTES:**

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

<table>
<thead>
<tr>
<th>City Name</th>
<th>60 Day Notice</th>
<th>Notice of Public Hearing</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of American Canyon</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Town of Yountville</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>City of St. Helena</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>City of Calistoga</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>County Name</th>
<th>60 Day Notice</th>
<th>Notice of Public Hearing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Napa County</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**NOTES:** For Napa County, the Planning and Public Works Departments were each informed. In addition, the Napa Sanitation District (NapaSan) was notified, as it is the local recycled water purveyor.
Urban Water Supplier: City of Napa

**Water Delivery Product** (If delivering more than one type of product use Table O-1C)

Retail Potable Deliveries

**Table O-1B: Recommended Energy Reporting - Total Utility Approach**

<table>
<thead>
<tr>
<th>Enter Start Date for Reporting Period</th>
<th>End Date</th>
<th>Urban Water Supplier Operational Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/1/2020</td>
<td>12/31/2020</td>
<td>Sum of All Water Management Processes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Water Volume Units Used</th>
<th>Total Utility</th>
<th>Hydropower</th>
<th>Net Utility</th>
</tr>
</thead>
<tbody>
<tr>
<td>AF</td>
<td>14,683</td>
<td>0</td>
<td>14,683</td>
</tr>
<tr>
<td>Volume of Water Entering Process (volume unit)</td>
<td>14,683</td>
<td>0</td>
<td>14,683</td>
</tr>
<tr>
<td>Energy Consumed (kWh)</td>
<td>2,198,510</td>
<td>0</td>
<td>2,198,510</td>
</tr>
<tr>
<td>Energy Intensity (kWh/volume)</td>
<td>149.7</td>
<td>0.0</td>
<td>149.7</td>
</tr>
</tbody>
</table>

**Quantity of Self-Generated Renewable Energy**

407,136 kWh

**Data Quality** *(Estimate, Metered Data, Combination of Estimates and Metered Data)*

**Metered Data**

**Data Quality Narrative:**

Volume of Water Entering Process includes 591 AF that the City treats and wheels to American Canyon and Calistoga. This helps provide a more accurate Energy Intensity in this Total Utility Approach. Metered electricity data were tabulated for all City Pacific Gas & Electric (PG&E) billings covering calendar year 2020.

**Narrative:**

Electricity is consumed primarily at three water treatment plants and nine pump stations within the City's operational control. Pumping raw water from Lake Hennessey to the Hennessey Water Treatment Plant consumes the largest amount of energy. This is also the site of the City's solar photovoltaic system, which produces more than 400,000 kWh per year.
DWR 2020 Urban Water Management Plan Checklist
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## Appendix D

### UWMP Checklist

<table>
<thead>
<tr>
<th>Retail</th>
<th>Wholesale</th>
<th>2020 Guidebook Location</th>
<th>Water Code Section</th>
<th>Summary as Applies to UWMP</th>
<th>Subject</th>
<th>2020 UWMP Location (For Agency Review Use)</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>X</td>
<td>Chapter 1</td>
<td>10615</td>
<td>A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses, reclamation and demand management activities.</td>
<td>Introduction and Overview</td>
<td>Executive Summary</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Chapter 1</td>
<td>10630.5</td>
<td>Each plan shall include a simple description of the supplier’s plan including water availability, future requirements, a strategy for meeting needs, and other pertinent information. Additionally, a supplier may also choose to include a simple description at the beginning of each chapter.</td>
<td>Summary</td>
<td>Executive Summary</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 2.2</td>
<td>10620(b)</td>
<td>Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.</td>
<td>Plan Preparation</td>
<td>Section 2.1</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 2.6</td>
<td>10620(d)(2)</td>
<td>Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.</td>
<td>Plan Preparation</td>
<td>Section 2.5.2</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 2.6.2</td>
<td>10642</td>
<td>Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan and contingency plan.</td>
<td>Plan Preparation</td>
<td>Section 2.5.2</td>
</tr>
<tr>
<td>X</td>
<td></td>
<td>Sections 2.6 and 6.1</td>
<td>10631(h)</td>
<td>Retail suppliers will include documentation that they have provided their wholesale supplier(s) - if any - with water use projections from that source.</td>
<td>System Supplies</td>
<td>Section 2.5.1</td>
</tr>
<tr>
<td>X</td>
<td></td>
<td>Section 2.6</td>
<td>10631(h)</td>
<td>Wholesale suppliers will include documentation that they have provided their urban water suppliers with identification and quantification of the existing and planned sources of water available from the wholesale to the urban supplier during various water year types.</td>
<td>System Supplies</td>
<td>Not Applicable (N/A)</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 3.1</td>
<td>10631(a)</td>
<td>Describe the water supplier service area.</td>
<td>System Description</td>
<td>Section 3.2</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 3.3</td>
<td>10631(a)</td>
<td>Describe the climate of the service area of the supplier.</td>
<td>System Description</td>
<td>Section 3.5</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 3.4</td>
<td>10631(a)</td>
<td>Provide population projections for 2025, 2030, 2035, 2040 and optionally 2045.</td>
<td>System Description</td>
<td>Section 3.6.1</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 3.4.2</td>
<td>10631(a)</td>
<td>Describe other social, economic, and demographic factors affecting the supplier’s water management planning.</td>
<td>System Description</td>
<td>Section 3.6.2</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Sections 3.4 and 5.4</td>
<td>10631(a)</td>
<td>Indicate the current population of the service area.</td>
<td>System Description and Baselines and Targets</td>
<td>Section 3.6.1</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 3.5</td>
<td>10631(a)</td>
<td>Describe the land uses within the service area.</td>
<td>System Description</td>
<td>Section 3.7</td>
</tr>
</tbody>
</table>
### Appendix D
#### UWMP Checklist

<table>
<thead>
<tr>
<th>Retail</th>
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<th>2020 Guidebook Location</th>
<th>Water Code Section</th>
<th>Summary as Applies to UWMP</th>
<th>Subject</th>
<th>2020 UWMP Location (For Agency Review Use)</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>X</td>
<td>Section 4.2</td>
<td>10631(d)(1)</td>
<td>Quantify past, current, and projected water use, identifying the uses among water use sectors.</td>
<td>System Water Use</td>
<td>Section 4.2</td>
</tr>
<tr>
<td>X</td>
<td>optional</td>
<td>Section 4.2.4</td>
<td>10631(d)(3)(C)</td>
<td>Retail suppliers shall provide data to show the distribution loss standards were met.</td>
<td>System Water Use</td>
<td>Section 4.3</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 4.2.6</td>
<td>10631(d)(4)(A)</td>
<td>In projected water use, include estimates of water savings from adopted codes, plans, and other policies or laws.</td>
<td>System Water Use</td>
<td>Section 4.4</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 4.2.6</td>
<td>10631(d)(4)(B)</td>
<td>Provide citations of codes, standards, ordinances, or plans used to make water use projections.</td>
<td>System Water Use</td>
<td>Section 4.2.3</td>
</tr>
<tr>
<td>X</td>
<td>optional</td>
<td>Section 4.3.2.4</td>
<td>10631(d)(3)(A)</td>
<td>Report the distribution system water loss for each of the 5 years preceding the plan update.</td>
<td>System Water Use</td>
<td>Section 4.3</td>
</tr>
<tr>
<td>X</td>
<td>optional</td>
<td>Section 4.4</td>
<td>10631.1(a)</td>
<td>Include projected water use needed for lower income housing projected in the service area of the supplier.</td>
<td>System Water Use</td>
<td>Section 4.5</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 4.5</td>
<td>10635(b)</td>
<td>Demands under climate change considerations must be included as part of the drought risk assessment.</td>
<td>System Water Use</td>
<td>Section 4.6</td>
</tr>
<tr>
<td>X</td>
<td>Chapter 5</td>
<td>10608.20(e)</td>
<td>Retail suppliers shall provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.</td>
<td>Baselines and Targets</td>
<td>Sections 5.2 and 5.5</td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>Chapter 5</td>
<td>10608.24(a)</td>
<td>Retail suppliers shall meet their water use target by December 31, 2020.</td>
<td>Baselines and Targets</td>
<td>Section 5.6</td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>Section 5.1</td>
<td>10608.36</td>
<td>Wholesale suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their retail water suppliers achieve targeted water use reductions.</td>
<td>Baselines and Targets</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>Section 5.2</td>
<td>10608.24(d)(2)</td>
<td>If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.</td>
<td>Baselines and Targets</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>Section 5.5</td>
<td>10608.22</td>
<td>Retail suppliers’ per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5-year baseline. This does not apply if the suppliers base GPCD is at or below 100.</td>
<td>Baselines and Targets</td>
<td>Section 5.2</td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>Section 5.5 and Appendix E</td>
<td>10608.4</td>
<td>Retail suppliers shall report on their compliance in meeting their water use targets. The data shall be reported using a standardized form in the SB X7-7 2020 Compliance Form.</td>
<td>Baselines and Targets</td>
<td>Section 5.6 and Appendix G</td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Sections 6.1 and 6.2</td>
<td>10631(b)(1)</td>
<td>Provide a discussion of anticipated supply availability under a normal, single dry year, and a drought lasting five years, as well as more frequent and severe periods of drought.</td>
<td>System Supplies</td>
<td>Sections 6.2, 6.3, and 7.1</td>
</tr>
<tr>
<td>Retail</td>
<td>Wholesale</td>
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<td>--------</td>
<td>-----------</td>
<td>-------------------------</td>
<td>-------------------</td>
<td>---------------------------</td>
<td>---------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 6.1</td>
<td>10631(b)(1)</td>
<td>Provide a discussion of anticipated supply availability under a normal, single dry year, and a drought lasting five years, as well as more frequent and severe periods of drought, including changes in supply due to climate change.</td>
<td>System Supplies</td>
<td>Sections 6.11 and 7.1</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 6.1</td>
<td>10631(b)(2)</td>
<td>When multiple sources of water supply are identified, describe the management of each supply in relationship to other identified supplies.</td>
<td>System Supplies</td>
<td>Sections 6.2 and 6.3</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 6.1.1</td>
<td>10631(b)(3)</td>
<td>Describe measures taken to acquire and develop planned sources of water.</td>
<td>System Supplies</td>
<td>Section 6.9</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 6.2.8</td>
<td>10631(b)</td>
<td>Identify and quantify the existing and planned sources of water available for 2020, 2025, 2030, 2035, 2040 and optionally 2045.</td>
<td>System Supplies</td>
<td>Section 6.10</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 6.2</td>
<td>10631(b)</td>
<td>Indicate whether groundwater is an existing or planned source of water available to the supplier.</td>
<td>System Supplies</td>
<td>Section 6.4</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 6.2.2</td>
<td>10631(b)(4)(A)</td>
<td>Indicate whether a groundwater sustainability plan or groundwater management plan has been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.</td>
<td>System Supplies</td>
<td>N/A</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 6.2.2</td>
<td>10631(b)(4)(B)</td>
<td>Describe the groundwater basin.</td>
<td>System Supplies</td>
<td>N/A</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 6.2.2</td>
<td>10631(b)(4)(B)</td>
<td>Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the supplier has the legal right to pump.</td>
<td>System Supplies</td>
<td>N/A</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 6.2.2.1</td>
<td>10631(b)(4)(B)</td>
<td>For unadjudicated basins, indicate whether or not the department has identified the basin as a high or medium priority. Describe efforts by the supplier to coordinate with sustainability or groundwater agencies to achieve sustainable groundwater conditions.</td>
<td>System Supplies</td>
<td>N/A</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 6.2.2.4</td>
<td>10631(b)(4)(C)</td>
<td>Provide a detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years</td>
<td>System Supplies</td>
<td>N/A</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 6.2.2</td>
<td>10631(b)(4)(D)</td>
<td>Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.</td>
<td>System Supplies</td>
<td>N/A</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 6.2.7</td>
<td>10631(c)</td>
<td>Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.</td>
<td>System Supplies</td>
<td>Section 6.8</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 6.2.5</td>
<td>10633(b)</td>
<td>Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.</td>
<td>System Supplies (Recycled Water)</td>
<td>Section 6.6.2</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 6.2.5</td>
<td>10633(c)</td>
<td>Describe the recycled water currently being used in the supplier’s service area.</td>
<td>System Supplies (Recycled Water)</td>
<td>Section 6.6.3</td>
</tr>
</tbody>
</table>
## Appendix D
### UWMP Checklist

<table>
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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>X</td>
<td>Section 6.2.5</td>
<td>10633(d)</td>
<td>Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.</td>
<td>System Supplies (Recycled Water)</td>
<td>Section 6.6.3</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 6.2.5</td>
<td>10633(e)</td>
<td>Describe the projected use of recycled water within the supplier’s service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected.</td>
<td>System Supplies (Recycled Water)</td>
<td>Section 6.6.3</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 6.2.5</td>
<td>10633(f)</td>
<td>Describe the actions which may be taken to encourage the use of recycled water and the projected results of these actions in terms of acre-feet of recycled water used per year.</td>
<td>System Supplies (Recycled Water)</td>
<td>Section 6.6.4</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 6.2.5</td>
<td>10633(g)</td>
<td>Provide a plan for optimizing the use of recycled water in the supplier’s service area.</td>
<td>System Supplies (Recycled Water)</td>
<td>Section 6.6.4</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 6.2.6</td>
<td>10631(g)</td>
<td>Describe desalinated water project opportunities for long-term supply.</td>
<td>System Supplies</td>
<td>Section 6.7</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 6.2.5</td>
<td>10633(a)</td>
<td>Describe the wastewater collection and treatment systems in the supplier’s service area with quantified amount of collection and treatment and the disposal methods.</td>
<td>System Supplies (Recycled Water)</td>
<td>Section 6.6.2</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Sections 6.2.8 and 6.3.7</td>
<td>10631(f)</td>
<td>Describe the expected future water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and for a period of drought lasting 5 consecutive water years.</td>
<td>System Supplies</td>
<td>Section 6.9</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 6.4 and Appendix O</td>
<td>10631.2(a)</td>
<td>The UWMP must include energy information, as stated in the code, that a supplier can readily obtain.</td>
<td>System Suppliers, Energy Intensity</td>
<td>Section 6.12</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 7.2</td>
<td>10634</td>
<td>Provide information on the quality of existing sources of water available to the supplier and the manner in which water quality affects water management strategies and supply reliability</td>
<td>Water Supply Reliability Assessment</td>
<td>Section 7.1.1</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 7.2.4</td>
<td>10620(f)</td>
<td>Describe water management tools and options to maximize resources and minimize the need to import water from other regions.</td>
<td>Water Supply Reliability Assessment</td>
<td>Section 7.1.4</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 7.3</td>
<td>10635(a)</td>
<td>Service Reliability Assessment: Assess the water supply reliability during normal, dry, and a drought lasting five consecutive water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years.</td>
<td>Water Supply Reliability Assessment</td>
<td>Section 7.1.3</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 7.3</td>
<td>10635(b)</td>
<td>Provide a drought risk assessment as part of information considered in developing the demand management measures and water supply projects.</td>
<td>Water Supply Reliability Assessment</td>
<td>Section 7.2</td>
</tr>
</tbody>
</table>
## Appendix D
### UWMP Checklist

<table>
<thead>
<tr>
<th>Retail</th>
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</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>X</td>
<td>Section 7.3</td>
<td>10635(b)(1)</td>
<td>Include a description of the data, methodology, and basis for one or more supply shortage conditions that are necessary to conduct a drought risk assessment for a drought period that lasts 5 consecutive years.</td>
<td>Water Supply Reliability Assessment</td>
<td>Section 7.2.1</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 7.3</td>
<td>10635(b)(2)</td>
<td>Include a determination of the reliability of each source of supply under a variety of water shortage conditions.</td>
<td>Water Supply Reliability Assessment</td>
<td>Section 7.1.2</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 7.3</td>
<td>10635(b)(3)</td>
<td>Include a comparison of the total water supply sources available to the water supplier with the total projected water use for the drought period.</td>
<td>Water Supply Reliability Assessment</td>
<td>Sections 7.1.3 and 7.2.3</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 7.3</td>
<td>10635(b)(4)</td>
<td>Include considerations of the historical drought hydrology, plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.</td>
<td>Water Supply Reliability Assessment</td>
<td>Section 7.1.2</td>
</tr>
<tr>
<td>X</td>
<td></td>
<td>Chapter 8</td>
<td>10632(a)</td>
<td>Provide a water shortage contingency plan (WSCP) with specified elements below.</td>
<td>Water Shortage Contingency Planning</td>
<td>Appendix J</td>
</tr>
<tr>
<td>X</td>
<td></td>
<td>Chapter 8</td>
<td>10632(a)(1)</td>
<td>Provide the analysis of water supply reliability (from Chapter 7 of Guidebook) in the WSCP</td>
<td>Water Shortage Contingency Planning</td>
<td>Appendix J (Section 1.0)</td>
</tr>
<tr>
<td>X</td>
<td></td>
<td>Section 8.10</td>
<td>10632(a)(10)</td>
<td>Describe reevaluation and improvement procedures for monitoring and evaluating the water shortage contingency plan to ensure risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented.</td>
<td>Water Shortage Contingency Planning</td>
<td>Appendix J (Section 10.0)</td>
</tr>
<tr>
<td>X</td>
<td></td>
<td>Section 8.2</td>
<td>10632(a)(2)(A)</td>
<td>Provide the written decision-making process and other methods that the supplier will use each year to determine its water reliability.</td>
<td>Water Shortage Contingency Planning</td>
<td>Appendix J (Section 2.1)</td>
</tr>
<tr>
<td>X</td>
<td></td>
<td>Section 8.2</td>
<td>10632(a)(2)(B)</td>
<td>Provide data and methodology to evaluate the supplier’s water reliability for the current year and one dry year pursuant to factors in the code.</td>
<td>Water Shortage Contingency Planning</td>
<td>Appendix J (Sections 2.2 and 2.3)</td>
</tr>
<tr>
<td>X</td>
<td></td>
<td>Section 8.3</td>
<td>10632(a)(3)(A)</td>
<td>Define six standard water shortage levels of 10, 20, 30, 40, 50 percent shortage and greater than 50 percent shortage. These levels shall be based on supply conditions, including percent reductions in supply, changes in groundwater levels, changes in surface elevation, or other conditions. The shortage levels shall also apply to a catastrophic interruption of supply.</td>
<td>Water Shortage Contingency Planning</td>
<td>Appendix J (Section 3.0)</td>
</tr>
<tr>
<td>X</td>
<td></td>
<td>Section 8.3</td>
<td>10632(a)(3)(B)</td>
<td>Suppliers with an existing water shortage contingency plan that uses different water shortage levels must cross reference their categories with the six standard categories.</td>
<td>Water Shortage Contingency Planning</td>
<td>N/A</td>
</tr>
<tr>
<td>X</td>
<td></td>
<td>Section 8.4</td>
<td>10632(a)(4)(A)</td>
<td>Suppliers with water shortage contingency plans that align with the defined shortage levels must specify locally appropriate supply augmentation actions.</td>
<td>Water Shortage Contingency Planning</td>
<td>Appendix J (Section 4.3)</td>
</tr>
</tbody>
</table>
### Appendix D
#### UWMP Checklist

<table>
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</thead>
<tbody>
<tr>
<td>X</td>
<td></td>
<td>Section 8.4</td>
<td>10632(a)(4)(B)</td>
<td>Specify locally appropriate demand reduction actions to adequately respond to shortages.</td>
<td>Water Shortage Contingency Planning</td>
<td>Appendix J (Section 4.1)</td>
</tr>
<tr>
<td>X</td>
<td></td>
<td>Section 8.4</td>
<td>10632(a)(4)(C)</td>
<td>Specify locally appropriate operational changes.</td>
<td>Water Shortage Contingency Planning</td>
<td>Appendix J (Section 4.4)</td>
</tr>
<tr>
<td>X</td>
<td></td>
<td>Section 8.4</td>
<td>10632(a)(4)(D)</td>
<td>Specify additional mandatory prohibitions against specific water use practices that are in addition to state-mandated prohibitions are appropriate to local conditions.</td>
<td>Water Shortage Contingency Planning</td>
<td>Appendix J (Section 4.2)</td>
</tr>
<tr>
<td>X</td>
<td></td>
<td>Section 8.4</td>
<td>10632(a)(4)(E)</td>
<td>Estimate the extent to which the gap between supplies and demand will be reduced by implementation of the action.</td>
<td>Water Shortage Contingency Planning</td>
<td>Appendix J (Sections 4.1 and 4.3)</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 8.4.6</td>
<td>10632.5</td>
<td>The plan shall include a seismic risk assessment and mitigation plan.</td>
<td>Water Shortage Contingency Plan</td>
<td>Appendix J (Section 4.6)</td>
</tr>
<tr>
<td>X</td>
<td></td>
<td>Section 8.5</td>
<td>10632(a)(5)(A)</td>
<td>Suppliers must describe that they will inform customers, the public and others regarding any current or predicted water shortages.</td>
<td>Water Shortage Contingency Planning</td>
<td>Appendix J (Section 5.0)</td>
</tr>
<tr>
<td>X</td>
<td></td>
<td>Sections 8.5 and 8.6</td>
<td>10632(a)(5)(B)</td>
<td>Suppliers must describe that they will inform customers, the public and others regarding any shortage response actions triggered or anticipated to be triggered and other relevant communications.</td>
<td>Water Shortage Contingency Planning</td>
<td>Appendix J (Section 5.0)</td>
</tr>
<tr>
<td>X</td>
<td></td>
<td>Section 8.6</td>
<td>10632(a)(6)</td>
<td>Retail supplier must describe how it will ensure compliance with and enforce provisions of the WSCP.</td>
<td>Water Shortage Contingency Planning</td>
<td>Appendix J (Section 6.0)</td>
</tr>
<tr>
<td>X</td>
<td></td>
<td>Section 8.7</td>
<td>10632(a)(7)(A)</td>
<td>Describe the legal authority that empowers the supplier to enforce shortage response actions.</td>
<td>Water Shortage Contingency Planning</td>
<td>Appendix J (Section 7.0)</td>
</tr>
<tr>
<td>X</td>
<td></td>
<td>Section 8.7</td>
<td>10632(a)(7)(B)</td>
<td>Provide a statement that the supplier will declare a water shortage emergency in accordance with Water Code Chapter 3.</td>
<td>Water Shortage Contingency Planning</td>
<td>Appendix J (Section 7.0)</td>
</tr>
<tr>
<td>X</td>
<td></td>
<td>Section 8.7</td>
<td>10632(a)(7)(C)</td>
<td>Provide a statement that the supplier will coordinate with any city or county within which it provides water for the possible proclamation of a local emergency.</td>
<td>Water Shortage Contingency Planning</td>
<td>Appendix J (Sections 2.1 and 7.0)</td>
</tr>
<tr>
<td>X</td>
<td></td>
<td>Section 8.8</td>
<td>10632(a)(8)(A)</td>
<td>Describe the potential revenue reductions and expense increases associated with activated shortage response actions.</td>
<td>Water Shortage Contingency Planning</td>
<td>Appendix J (Section 8.0)</td>
</tr>
<tr>
<td>X</td>
<td></td>
<td>Section 8.8</td>
<td>10632(a)(8)(B)</td>
<td>Provide a description of mitigation actions needed to address revenue reductions and expense increases associated with activated shortage response actions.</td>
<td>Water Shortage Contingency Planning</td>
<td>Appendix J (Section 8.0)</td>
</tr>
<tr>
<td>X</td>
<td></td>
<td>Section 8.8</td>
<td>10632(a)(8)(C)</td>
<td>Retail suppliers must describe the cost of compliance with Water Code Chapter 3.3: Excessive Residential Water Use During Drought</td>
<td>Water Shortage Contingency Planning</td>
<td>Appendix J (Sections 4.2 and 6.0)</td>
</tr>
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<td>X</td>
<td></td>
<td>Section 8.9</td>
<td>10632(a)(9)</td>
<td>Retail suppliers must describe the monitoring and reporting requirements and procedures that ensure appropriate data is collected, tracked, and analyzed for purposes of monitoring customer compliance.</td>
<td>Water Shortage Contingency Planning</td>
<td>Appendix J (Section 9.0)</td>
</tr>
<tr>
<td>X</td>
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<td>Section 8.11</td>
<td>10632(b)</td>
<td>Analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas.</td>
<td>Water Shortage Contingency Planning</td>
<td>Appendix J (Section 11.0)</td>
</tr>
<tr>
<td>X</td>
<td></td>
<td>Sections 8.12 and 10.4</td>
<td>10635(c)</td>
<td>Provide supporting documentation that Water Shortage Contingency Plan has been, or will be, provided to any city or county within which it provides water, no later than 30 days after the submission of the plan to DWR.</td>
<td>Plan Adoption, Submittal, and Implementation</td>
<td>Sections 8.4 and 10.4</td>
</tr>
<tr>
<td>X</td>
<td></td>
<td>Section 8.14</td>
<td>10632(c)</td>
<td>Make available the Water Shortage Contingency Plan to customers and any city or county where it provides water within 30 days after adopting the plan.</td>
<td>Water Shortage Contingency Planning</td>
<td>Sections 8.4 and 10.4</td>
</tr>
<tr>
<td>X</td>
<td></td>
<td>Sections 9.1 and 9.3</td>
<td>10631(e)(2)</td>
<td>Wholesale suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and supplier assistance program.</td>
<td>Demand Management Measures</td>
<td>N/A</td>
</tr>
<tr>
<td>X</td>
<td></td>
<td>Sections 9.2 and 9.3</td>
<td>10631(e)(1)</td>
<td>Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.</td>
<td>Demand Management Measures</td>
<td>Section 9.2</td>
</tr>
<tr>
<td>X</td>
<td></td>
<td>Chapter 10</td>
<td>10608.26(a)</td>
<td>Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets (recommended to discuss compliance).</td>
<td>Plan Adoption, Submittal, and Implementation</td>
<td>Section 10.3.1</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 10.2.1</td>
<td>10621(b)</td>
<td>Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. Reported in Table 10-1.</td>
<td>Plan Adoption, Submittal, and Implementation</td>
<td>Section 10.2</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 10.4</td>
<td>10621(f)</td>
<td>Each urban water supplier shall update and submit its 2020 plan to the department by July 1, 2021.</td>
<td>Plan Adoption, Submittal, and Implementation</td>
<td>N/A (City is submitting after July 1)</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Sections 10.2.2, 10.3, and 10.5</td>
<td>10642</td>
<td>Provide supporting documentation that the urban water supplier made the plan and contingency plan available for public inspection, published notice of the public hearing, and held a public hearing about the plan and contingency plan.</td>
<td>Plan Adoption, Submittal, and Implementation</td>
<td>Section 10.2.2 and Appendix E</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 10.2.2</td>
<td>10642</td>
<td>The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water.</td>
<td>Plan Adoption, Submittal, and Implementation</td>
<td>Section 10.2</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 10.3.2</td>
<td>10642</td>
<td>Provide supporting documentation that the plan and contingency plan has been adopted as prepared or modified.</td>
<td>Plan Adoption, Submittal, and Implementation</td>
<td>Section 10.3.2 and Appendix K</td>
</tr>
</tbody>
</table>
## Appendix D
### UWMP Checklist

<table>
<thead>
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<tr>
<td>X</td>
<td>X</td>
<td>Section 10.4</td>
<td>10644(a)</td>
<td>Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.</td>
<td>Plan Adoption, Submittal, and Implementation</td>
<td>Section 10.4</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 10.4</td>
<td>10644(a)(1)</td>
<td>Provide supporting documentation that the urban water supplier has submitted this UWMP to any city or county within which the supplier provides water no later than 30 days after adoption.</td>
<td>Plan Adoption, Submittal, and Implementation</td>
<td>Section 10.4</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Sections 10.4.1 and 10.4.2</td>
<td>10644(a)(2)</td>
<td>The plan, or amendments to the plan, submitted to the department shall be submitted electronically.</td>
<td>Plan Adoption, Submittal, and Implementation</td>
<td>Sections 10.4 and 10.6</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 10.5</td>
<td>10645(a)</td>
<td>Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the supplier has or will make the plan available for public review during normal business hours.</td>
<td>Plan Adoption, Submittal, and Implementation</td>
<td>Section 10.5</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 10.5</td>
<td>10645(b)</td>
<td>Provide supporting documentation that, not later than 30 days after filing a copy of its water shortage contingency plan with the department, the supplier has or will make the plan available for public review during normal business hours.</td>
<td>Plan Adoption, Submittal, and Implementation</td>
<td>Section 10.5</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 10.6</td>
<td>10621(c)</td>
<td>If supplier is regulated by the Public Utilities Commission, include its plan and contingency plan as part of its general rate case filings.</td>
<td>Plan Adoption, Submittal, and Implementation</td>
<td>N/A</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>Section 10.7.2</td>
<td>10644(b)</td>
<td>If revised, submit a copy of the water shortage contingency plan to DWR within 30 days of adoption.</td>
<td>Plan Adoption, Submittal, and Implementation</td>
<td>Section 10.6</td>
</tr>
</tbody>
</table>
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June 1, 2021

Felix Hernandez III
Maintenance and Utilities Director
City of American Canyon
151 Mezzetta Court
American Canyon, CA 94503

Subject: City of Napa Preparation of Urban Water Management Plan and Addendum to the 2015 Urban Water Management Plan

Dear Mr. Hernandez:

This letter is official notification that the City of Napa is in the process of preparing its 2020 Urban Water Management Plan (UWMP) update, pursuant to the Urban Water Management Planning Act (California Water Code, Division 6, Part 2.6, Sections 10610-10657). The City’s UWMP was last updated in September 2017. The City will simultaneously update its Water Shortage Contingency Plan in accordance with California Water Code Section 10632.

Further, the City is in the process of updating its 2015 Urban Water Management Plan to include elements described in Delta Plan Policy WR P1, Reduce Reliance on the Delta Through Improved Regional Water Self-Reliance (Cal. Code Regs. tit. 23, § 5003). These elements need to be included as an addendum in the City’s 2015 UWMP to support certification of consistency for a future covered action. The City anticipates participating in a covered action and is therefore required to demonstrate reduced Delta reliance.

The City will make drafts of the 2020 UWMP, WSCP update, and addendum to the 2015 UWMP available for public review and comment prior to adoption and your agency is invited to be a part of this process. The City of American Canyon will be given notice of the Napa City Council meeting in which the 2020 UWMP, WSCP update, and addendum to the 2015 UWMP will be considered.

Questions on the City of Napa 2020 UWMP, WSCP update, and addendum to the 2015 UWMP preparation and adoption process can be directed to me at (707) 257-9309 or pcostello@cityofnapa.org.

Sincerely,

Patrick Costello
Water Resources Analyst
June 1, 2021

Joe Tagliaboschi
Public Works Director
Town of Yountville
6550 Yount Street
Yountville, CA 94599

Subject: City of Napa Preparation of Urban Water Management Plan and Addendum to the 2015 Urban Water Management Plan

Dear Mr. Tagliaboschi:

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The City will make drafts of the 2020 UWMP, WSCP update, and addendum to the 2015 UWMP available for public review and comment prior to adoption and your agency is invited to be a part of this process. The City of American Canyon will be given notice of the Napa City Council meeting in which the 2020 UWMP, WSCP update, and addendum to the 2015 UWMP will be considered.

Questions on the City of Napa 2020 UWMP, WSCP update, and addendum to the 2015 UWMP preparation and adoption process can be directed to me at (707) 257-9309 or pcostello@cityofnapa.org.

Sincerely,

Patrick Costello
Water Resources Analyst
June 1, 2021

Clayton Church
Acting Public Works Director
City of St. Helena
1572 Railroad Avenue
St. Helena, CA  94574

Subject:  City of Napa Preparation of Urban Water Management Plan and Addendum to the 2015 Urban Water Management Plan

Dear Mr. Church:

This letter is official notification that the City of Napa is in the process of preparing its 2020 Urban Water Management Plan (UWMP) update, pursuant to the Urban Water Management Planning Act (California Water Code, Division 6, Part 2.6, Sections 10610-10657). The City’s UWMP was last updated in September 2017. The City will simultaneously update its Water Shortage Contingency Plan in accordance with California Water Code Section 10632.

Further, the City is in the process of updating its 2015 Urban Water Management Plan to include elements described in Delta Plan Policy WR P-1, Reduce Reliance on the Delta Through Improved Regional Water Self-Reliance (Cal. Code Regs. tit. 23, § 5003). These elements need to be included as an addendum in the City’s 2015 UWMP to support certification of consistency for a future covered action. The City anticipates participating in a covered action and is therefore required to demonstrate reduced Delta reliance.

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Questions on the City of Napa 2020 UWMP, WSCP update, and addendum to the 2015 UWMP preparation and adoption process can be directed to me at (707) 257-9309 or pcostello@cityofnapa.org.

Sincerely,

Patrick Costello
Water Resources Analyst

For TTY/Speech-to-Speech users, dial 7-1-1 for the California Relay Service or email clerk@cityofnapa.org

California Relay Services offers free text-to-speech, speech-to-speech, and Spanish-language services 24 hours a day, 7 days a week
June 1, 2021

Derek Rayner  
Public Works Director  
City of Calistoga  
414 Washington Street  
Calistoga, CA  94515

Subject: City of Napa Preparation of Urban Water Management Plan and Addendum to the 2015 Urban Water Management Plan

Dear Mr. Rayner:

This letter is official notification that the City of Napa is in the process of preparing its 2020 Urban Water Management Plan (UWMP) update, pursuant to the Urban Water Management Planning Act (California Water Code, Division 6, Part 2.6, Sections 10610-10657). The City’s UWMP was last updated in September 2017. The City will simultaneously update its Water Shortage Contingency Plan in accordance with California Water Code Section 10632.

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Sincerely,

Patrick Costello  
Water Resources Analyst

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June 1, 2021

Steven Lederer  
Director of Public Works  
County of Napa  
1195 Third Street, Suite 101  
Napa, CA 94559

Subject: City of Napa Preparation of Urban Water Management Plan and Addendum to the 2015 Urban Water Management Plan

Dear Mr. Lederer:

This letter is official notification that the City of Napa is in the process of preparing its 2020 Urban Water Management Plan (UWMP) update, pursuant to the Urban Water Management Planning Act (California Water Code, Division 6, Part 2.6, Sections 10610-10657). The City’s UWMP was last updated in September 2017. The City will simultaneously update its Water Shortage Contingency Plan in accordance with California Water Code Section 10632.

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Sincerely,

Patrick Costello  
Water Resources Analyst

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June 1, 2021

David Morrison  
Planning Director  
County of Napa  
1195 Third Street, 2nd Floor  
Napa, CA 94559

Subject: City of Napa Preparation of Urban Water Management Plan and Addendum to the 2015 Urban Water Management Plan

Dear Mr. Morrison:

This letter is official notification that the City of Napa is in the process of preparing its 2020 Urban Water Management Plan (UWMP) update, pursuant to the Urban Water Management Planning Act (California Water Code, Division 6, Part 2.6, Sections 10610-10657). The City’s UWMP was last updated in September 2017. The City will simultaneously update its Water Shortage Contingency Plan in accordance with California Water Code Section 10632.

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Questions on the City of Napa 2020 UWMP, WSCP update, and addendum to the 2015 UWMP preparation and adoption process can be directed to me at (707) 257-9309 or pcostello@cityofnapa.org.

Sincerely,

Patrick Costello  
Water Resources Analyst

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June 1, 2021

Timothy Healy
General Manager
Napa Sanitation District
1515 Soscol Ferry Road
Napa, CA 94558

Subject: City of Napa Preparation of Urban Water Management Plan and Addendum to the 2015 Urban Water Management Plan

Dear Mr. Healy:

This letter is official notification that the City of Napa is in the process of preparing its 2020 Urban Water Management Plan (UWMP) update, pursuant to the Urban Water Management Planning Act (California Water Code, Division 6, Part 2.6, Sections 10610-10657). The City’s UWMP was last updated in September 2017. The City will simultaneously update its Water Shortage Contingency Plan in accordance with California Water Code Section 10632.

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Questions on the City of Napa 2020 UWMP, WSCP update, and addendum to the 2015 UWMP preparation and adoption process can be directed to me at (707) 257-9309 or pcostello@cityofnapa.org.

Sincerely,

Patrick Costello
Water Resources Analyst
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December 3, 2021

Felix Hernandez III  
Maintenance and Utilities Director  
City of American Canyon  
151 Mezzetta Court  
American Canyon, CA 94503

Subject: City of Napa Public Hearing for 2020 Urban Water Management Plan and Addendum to the 2015 Urban Water Management Plan

Dear Mr. Hernandez:

This letter is to notify you that the City of Napa City Council will hold a Public Hearing at the regularly scheduled meeting on Tuesday, December 21 at 6:30 pm in the Council Chambers, City Hall, 955 School Street, Napa to consider adoption of a 2015 Urban Water Management Plan (UWMP) amendment, the 2020 UWMP, and the Water Shortage Contingency Plan (WSCP).

The draft documents have been posted online at www.cityofnapa.org/water and hard copies made available for review at the Utilities Department, the City Clerk, and the Napa City-County Library. I have enclosed a separate hard copy of the draft documents for your department. Should you or your staff have any comments prior to the public hearing, please forward them to me at pcostello@cityofnapa.org. A final copy of the documents will be filed with your agency no later than 30 days after adoption.

Questions on the City of Napa 2020 UWMP, WSCP update, and addendum to the 2015 UWMP adoption process can be directed to me at (707) 257-9309 or pcostello@cityofnapa.org.

Sincerely,

Patrick Costello  
Water Resources Analyst
December 3, 2021

John Ferons
Public Works Director
Town of Yountville
6550 Yount Street
Yountville, CA 94599

Subject: City of Napa Public Hearing for 2020 Urban Water Management Plan and Addendum to the 2015 Urban Water Management Plan

Dear Mr. Ferons:

This letter is to notify you that the City of Napa City Council will hold a Public Hearing at the regularly scheduled meeting on Tuesday, December 21 at 6:30 pm in the Council Chambers, City Hall, 955 School Street, Napa to consider adoption of a 2015 Urban Water Management Plan (UWMP) amendment, the 2020 UWMP, and the Water Shortage Contingency Plan (WSCP).

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Questions on the City of Napa 2020 UWMP, WSCP update, and addendum to the 2015 UWMP adoption process can be directed to me at (707) 257-9309 or pcostello@cityofnapa.org.

Sincerely,

Patrick Costello
Water Resources Analyst
December 3, 2021

Mark Rincon
Public Works Director
City of St. Helena
1572 Railroad Avenue
St. Helena, CA 94574

Subject: City of Napa Public Hearing for 2020 Urban Water Management Plan and Addendum to the 2015 Urban Water Management Plan

Dear Mr. Rincon:

This letter is to notify you that the City of Napa City Council will hold a Public Hearing at the regularly scheduled meeting on Tuesday, December 21 at 6:30 pm in the Council Chambers, City Hall, 955 School Street, Napa to consider adoption of a 2015 Urban Water Management Plan (UWMP) amendment, the 2020 UWMP, and the Water Shortage Contingency Plan (WSCP).

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Questions on the City of Napa 2020 UWMP, WSCP update, and addendum to the 2015 UWMP adoption process can be directed to me at (707) 257-9309 or pcostello@cityofnapa.org.

Sincerely,

Patrick Costello
Water Resources Analyst
December 3, 2021

Derek Rayner  
Public Works Director  
City of Calistoga  
414 Washington Street  
Calistoga, CA 94515

Subject: City of Napa Public Hearing for 2020 Urban Water Management Plan and Addendum to the 2015 Urban Water Management Plan

Dear Mr. Rayner:

This letter is to notify you that the City of Napa City Council will hold a Public Hearing at the regularly scheduled meeting on Tuesday, December 21 at 6:30 pm in the Council Chambers, City Hall, 955 School Street, Napa to consider adoption of a 2015 Urban Water Management Plan (UWMP) amendment, the 2020 UWMP, and the Water Shortage Contingency Plan (WSCP).

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Sincerely,

Patrick Costello  
Water Resources Analyst
December 3, 2021

Steven Lederer  
Director of Public Works  
County of Napa  
1195 Third Street, Suite 101  
Napa, CA 94559  

Subject: City of Napa Public Hearing for 2020 Urban Water Management Plan and Addendum to the 2015 Urban Water Management Plan

Dear Mr. Lederer:

This letter is to notify you that the City of Napa City Council will hold a Public Hearing at the regularly scheduled meeting on Tuesday, December 21 at 6:30 pm in the Council Chambers, City Hall, 955 School Street, Napa to consider adoption of a 2015 Urban Water Management Plan (UWMP) amendment, the 2020 UWMP, and the Water Shortage Contingency Plan (WSCP).

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Sincerely,

[Signature]

Patrick Costello  
Water Resources Analyst
December 3, 2021

David Morrison
Planning Director
County of Napa
1195 Third Street, 2nd Floor
Napa, CA 94559

Subject: City of Napa Public Hearing for 2020 Urban Water Management Plan and Addendum to the 2015 Urban Water Management Plan

Dear Mr. Morrison:

This letter is to notify you that the City of Napa City Council will hold a Public Hearing at the regularly scheduled meeting on Tuesday, December 21 at 6:30 pm in the Council Chambers, City Hall, 955 School Street, Napa to consider adoption of a 2015 Urban Water Management Plan (UWMP) amendment, the 2020 UWMP, and the Water Shortage Contingency Plan (WSCP).

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Sincerely,

Patrick Costello
Water Resources Analyst
December 3, 2021

Timothy Healy
General Manager
Napa Sanitation District
1515 Soscol Ferry Road
Napa, CA 94558

Subject: City of Napa Public Hearing for 2020 Urban Water Management Plan and Addendum to the 2015 Urban Water Management Plan

Dear Mr. Healy:

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Sincerely,

Patrick Costello
Water Resources Analyst
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MEMO

TO: NAPA VALLEY REGISTER
(via email nvrlegals@napanews.com) and Fax 256-0743

FROM: Tiffany Carranza, City Clerk

DATE: December 3, 2021

SUBJECT: PUBLICATION OF LEGAL AD

Please provide two (2) affidavits of publication to the City Clerk Department.

Publish the following as a LEGAL AD on Tuesday, December 7, 2021, and Tuesday, December 14, 2021:

NOTICE OF PLAN AVAILABILITY AND PUBLIC HEARING
CITY OF NAPA
URBAN WATER MANAGEMENT PLAN AND WATER SHORTAGE CONTINGENCY PLAN UPDATES

NOTICE IS HEREBY GIVEN that a 2015 Urban Water Management Plan Amendment, the 2020 Urban Water Management Plan, and the Water Shortage Contingency Plan have been drafted and are available for public review beginning December 7, 2021, on the City Water Division web page, www.cityofnapa.org/water, and at the following locations: City of Napa Utilities Department, 1700 Second Street, Suite 100, City of Napa Office of the City Clerk, 955 School Street, and Napa City-County Library, 580 Coombs Street, Napa, California.

As an urban water supplier, the City of Napa is required to submit an update of its Urban Water Management Plan to the State Department of Water Resources every five years. The 2015 plan is being amended to meet requirements of the Sacramento-San Joaquin Delta Reform Act of 2009. The 2020 plan is a new summary of City water supplies, demands, and conservation, and overall water service reliability through 2045. The Water Shortage Contingency Plan is a stand-alone document that guides the City through supply shortfalls up to 50% or more.

NOTICE IS HEREBY GIVEN that on December 21, 2021, at or after 6:30 p.m. in the City Council Chambers, City Hall, 955 School Street, Napa, California, a public hearing will be conducted by the City Council of the City of Napa at which time and place all persons may attend and be heard upon:
Adoption of an amendment to City of Napa 2015 Urban Water Management Plan.
Adoption of the City of Napa 2020 Urban Water Management Plan.
Adoption of the City of Napa Water Shortage Contingency Plan.

Due to the impacts of the Coronavirus, all persons attending the public hearing will be required to wear a mask. Please visit the following link for full Coronavirus (COVID-19) meeting procedures: https://www.cityofnapa.org/920/CORONAVIRUS-COVID-19-Notice-of-Meeting-P

Supporting documents are available at the City Clerk’s Office at 955 School Street, Napa, or on the City’s website at www.cityofnapa.org on the Friday before the meeting and may be available earlier depending on the completion and photocopying of the report.

Written comments should be directed to the City Council through the City Clerk at PO Box 660, Napa, California, 94559-0660 or by email to clerk@cityofnapa.org.

PLEASE NOTE: Any person challenging any of the above action in Court may be limited to raising only those issues that they or someone else raised at the public hearing described in this notice, or in written correspondence delivered to the City of Napa at, or prior to, the public hearing.

Interested persons needing special accommodations or language translation should contact the Office of the City Clerk at 707-257-9503 or email clerk@cityofnapa.org at least three working days in advance of the meeting. For TTY/ Speech-to-Speech users, dial 7-1-1 for the California Relay Service, offering free text-to-speech, speech-to-speech, and Spanish-language services 24 hours a day, 7 days a week. You may also contact the City Clerk at clerk@cityofnapa.org for more information.

Dated: December 3, 2021
Signed: Tiffany Carranza, City Clerk
901 Public Notices

UNIVERSAL WATER MANAGEMENT PLAN AND WATER SHORTAGE CONTINGENCY PLAN UPDATES NOTICE IS HEREBY GIVEN that the 2015 Universal Water Management Plan Amendment, the 2020 Universal Water Management Plan Amendment, and the 2020 Water Shortage Contingency Plan have been adopted and are available for public review beginning December 7, 2021, on the City of Napa Water website, www.cityofnapa.org/water, and at the following locations: Department of Public Utilities, 1700 Second Street, Suite 100, City of Napa Office, City Clerk, 955 School Street, Napa, CA; City Council Committee Room, 100 Coombs Street, Napa, CA.

As an urban water supply, the City of Napa is required to submit an update of its water management plan to the State Department of Water Resources every five years. The 2015 plan is being amended to meet the requirements of the Sacramento-San Joaquin Delta Reform Act of 2009. The 2020 plan is a new summary of the City's water supply, usage, and overall water management strategy. The Water Shortage Contingency Plan is a stand-alone document that guides the City through supply shortages up to 50% or more.

NOTICE IS HEREBY GIVEN that on December 21, 2021, at or after 6:30 p.m. in the City Council Chambers, 100 Coombs Street, Napa, California, a public hearing will be conducted by the City Council of the City of Napa at which time persons desiring to be heard are invited and heard upon: Adoption of an amendment to City of Napa 2015 Urban Water Management Plan; Adoption of the City of Napa 2020 Urban Water Management Plan; Adoption of the City of Napa 2020 Water Shortage Contingency Plan. Due to the impacts of the Coronavirus, all persons attending the public hearing will be required to wear a mask. Please visit the following link for full Coronavirus (COVID-19) meeting procedures: https://www.cityofnapa.org/2020CORONAVIRUS-

902 FBN

Statement Expires On: 11/22/2026
Signed: Arlena D. Jones
I hereby certify that this copy is a corrected copy of the original statement on file in my office.
Dated: November 02, 2022
JOHN TUTEUR
Napa County Clerk-Recorder
Deputy Clerk-Recorder.

902 FBN

PUBLIC NOTICE
FICTITIOUS BUSINESS NAME STATEMENT
FILE NO. 2021-0901317
The following person(s) is (are) doing business as: STAND AND RIDE STROLLER 190 IRRITATE STREET CALISTOGA CA 94515 Ownership begins: 2021-05-01
(Signature)

902 FBN

PUBLIC NOTICE
FICTITIOUS BUSINESS NAME STATEMENT
FILE NO. 2021-0915311
The following person(s) is (are) doing business as: HURUMPP WIMES 3125 ST HELENA HWY ST HELENA CA 94574 P.O. BOX 1006 COBB CA 95426 County of Napa (707) 287-5532 MICHAEL DEANS

903 Petition to Admin Estate

SUPERIOR COURT OF CALIFORNIA COUNTY OF NAPA CASE NUMBER: 21PC00271 IN THE MATTER OF RODNEY MONTGOMERY CLARK DECEDED.

The petition for probate of the last will and testament of RODNEY MONTGOMERY CLARK, deceased, and for the appointment of LORIE VICKERY, DEPUTY CLERK, of the Superior Court of California, County of Napa, is set for hearing on the 21st day of December, 2021, at 10:00 a.m. in Department 3F of the Superior Court of California, County of Napa, 1000 First Street, Napa, California. All persons interested in the estate are notified that a hearing will be held in this court as follows: DECEMBER 21, 2021 at 8:30 a.m. in Dept. B addressed court, same time and place. If you object to the granting of the petition, you should appear at the hearing and state your objections or file them before the hearing. Your appearance may be in person or by your attorney.

904 Name Chan

PERSONAL NOTICE

904 Name Chan

905 Petition to Admin Estate

PERSONAL NOTICE

905 Petition to Admin Estate
Appendix F

Distribution System Water Loss Audit
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This spreadsheet-based water audit tool is designed to help quantify and track water losses associated with water distribution systems and identify areas for improved efficiency and cost recovery. It provides a "top-down" summary water audit format, and is not meant to take the place of a full-scale, comprehensive water audit format.

Auditors are strongly encouraged to refer to the most current edition of AWWA M36 Manual for Water Audits for detailed guidance on the water auditing process and targetting loss reduction levels.

The spreadsheet contains several separate worksheets. Sheets can be accessed using the tabs towards the bottom of the screen, or by clicking the buttons below.

Please begin by providing the following information

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of Contact Person:</td>
<td>Patrick Costello</td>
</tr>
<tr>
<td>Email Address:</td>
<td><a href="mailto:pcostello@cityofnapa.org">pcostello@cityofnapa.org</a></td>
</tr>
<tr>
<td>Telephone</td>
<td>Ext.:</td>
</tr>
<tr>
<td>Name of City / Utility:</td>
<td>City of Napa</td>
</tr>
<tr>
<td>City/Town/Municipality:</td>
<td>Napa</td>
</tr>
<tr>
<td>State / Province:</td>
<td>California (CA)</td>
</tr>
<tr>
<td>Country:</td>
<td>USA</td>
</tr>
<tr>
<td>Year:</td>
<td>2019 Calendar Year</td>
</tr>
</tbody>
</table>

Audit Preparation Date: 8/13/2020

Volume Reporting Units: Million gallons (US)
PWSID / Other ID: CA2810003

The following guidance will help you complete the Audit

All audit data are entered on the Reporting Worksheet.
Value can be entered by user.
Value calculated based on input data.
These cells contain recommended default values.

Use of Option (Radio) Buttons:
- Select the default percentage by choosing the option button on the left.
- To enter a value, choose this button and enter a value in the cell to the right.

The following worksheets are available by clicking the buttons below or selecting the tabs along the bottom of the page:

- **Instructions**
  - The current sheet. Enter contact information and basic audit details (year, units etc).

- **Reporting Worksheet**
  - Enter the required data on this worksheet to calculate the water balance and data grading.

- **Comments**
  - Enter comments to explain how values were calculated or to document data sources.

- **Performance Indicators**
  - Review the performance indicators to evaluate the results of the audit.

- **Water Balance**
  - The values entered in the Reporting Worksheet are used to populate the Water Balance.

- **Dashboard**
  - A graphical summary of the water balance and Non-Revenue Water components.

- **Grading Matrix**
  - Presents the possible grading options for each input component of the audit.

- **Service Connection Diagram**
  - Diagrams depicting possible customer service connection line configurations.

- **Definitions**
  - Use this sheet to understand the terms used in the audit process.

- **Loss Control Planning**
  - Use this sheet to interpret the results of the audit validity score and performance indicators.

- **Example Audits**
  - Reporting Worksheet and Performance Indicators examples are shown for two validated audits.

- **Acknowledgements**
  - Acknowledgements for the AWWA Free Water Audit Software v5.0.
**AWWA Free Water Audit Software:**

### Reporting Worksheet

**Water Audit Report for:** City of Napa (CA2810003)

**Reporting Year:** 2019 1/2019 - 12/2019

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades.

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

**WATER AUDIT DATA VALIDITY SCORE:**

To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it.

### WATER AUDITED

<table>
<thead>
<tr>
<th>Component</th>
<th>Volume from own sources</th>
<th>Water imported</th>
<th>Water exported</th>
<th>Water supplied - Authorized Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Billed metered</td>
<td>7 4,666.138 MG/Yr</td>
<td>0.000 MG/Yr</td>
<td>477.524 MG/Yr</td>
<td></td>
</tr>
<tr>
<td>Unbilled metered</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WATER SUPPLIED:</td>
<td>4,180.767 MG/Yr</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### AUTHORIZED CONSUMPTION

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorized consumption</td>
<td>3,843.716 MG/Yr</td>
</tr>
</tbody>
</table>

### WATER LOSSES (Water Supplied - Authorized Consumption)

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apparent losses</td>
<td>337.051 MG/Yr</td>
</tr>
</tbody>
</table>

#### Real Losses (Current Annual Real Losses or CARL)

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Losses = Apparent Losses</td>
<td>278.297 MG/Yr</td>
</tr>
</tbody>
</table>

### NON-REVENUE WATER

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>WATER LOSSES:</td>
<td>337.051 MG/Yr</td>
</tr>
</tbody>
</table>

### SYSTEM DATA

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of mains:</td>
<td>357.8 miles</td>
</tr>
<tr>
<td>Number of active AND inactive service connections:</td>
<td>25,891</td>
</tr>
<tr>
<td>Service connection density:</td>
<td>72 conn./mile main</td>
</tr>
<tr>
<td>Average length of customer service line:</td>
<td>Yes</td>
</tr>
<tr>
<td>Average length of customer service line has been set to zero and a grading score of 10 has been applied</td>
<td>70.0 psi</td>
</tr>
</tbody>
</table>

### COST DATA

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total annual cost of operating water system:</td>
<td>$26,507,322</td>
</tr>
<tr>
<td>Customer retail unit cost (applied to Apparent Losses):</td>
<td>$6.07</td>
</tr>
<tr>
<td>Variable production cost (applied to Real Losses):</td>
<td>$1,500.00</td>
</tr>
</tbody>
</table>

### WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 68 out of 100 *****

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score.

### PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

1. Volume from own sources
2. Variable production cost (applied to Real Losses)
3. Customer metering inaccuracies
(THIS PAGE LEFT BLANK INTENTIONALLY)
**SB X7-7 Table 0: Units of Measure Used in 2020 UWMP**

(Select one from the drop down list)

<table>
<thead>
<tr>
<th>Units of Measure</th>
<th>Acre Feet</th>
</tr>
</thead>
</table>

*The unit of measure must be consistent throughout the UWMP, as reported in Submittal Table 2-3.

NOTES:

**SB X7-7 Table 2: Method for 2020 Population Estimate**

<table>
<thead>
<tr>
<th>Method Used to Determine 2020 Population</th>
<th>(may check more than one)</th>
</tr>
</thead>
<tbody>
<tr>
<td>☑ 1. Department of Finance (DOF) or American Community Survey (ACS)</td>
<td></td>
</tr>
<tr>
<td>☑ 2. Persons-per-Connection Method</td>
<td></td>
</tr>
<tr>
<td>☐ 3. DWR Population Tool</td>
<td></td>
</tr>
<tr>
<td>☐ 4. Other</td>
<td></td>
</tr>
</tbody>
</table>

DWR recommends pre-review

NOTES:

**SB X7-7 Table 3: 2020 Service Area Population**

<table>
<thead>
<tr>
<th>2020 Compliance Year Population</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2020</strong></td>
</tr>
</tbody>
</table>

NOTES:

**SB X7-7 Table 4: 2020 Gross Water Use**

<table>
<thead>
<tr>
<th>Compliance Year 2020</th>
<th>2020 Volume Into Distribution System</th>
<th>2020 Deductions</th>
<th>2020 Gross Water Use</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Exported Water*</td>
<td>Change in Dist. System Storage* (+/-)</td>
<td>Indirect Recycled Water</td>
</tr>
<tr>
<td></td>
<td>14,092</td>
<td>588</td>
<td>-</td>
</tr>
</tbody>
</table>

* Units of measure (AF, MG, or CCF) must remain consistent throughout the UWMP, as reported in SB X7-7 Table 0 and Submittal Table 2-3.

NOTES: Volumes are in AF. In 2020, the City exported water to the City of St. Helena, the Town of Yountville, and California Veterans Home.
### SB X7-7 Table 4-A: 2020 Volume Entering the Distribution System(s), Meter Error Adjustment

Complete one table for each source.

<table>
<thead>
<tr>
<th>Name of Source</th>
<th>Local Surface Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>This water source is (check one):</td>
<td></td>
</tr>
<tr>
<td>✓ The supplier's own water source</td>
<td></td>
</tr>
<tr>
<td>□ A purchased or imported source</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Compliance Year</th>
<th>Volume Entering Distribution System</th>
<th>Meter Error Adjustment</th>
<th>Corrected Volume Entering Distribution System</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>5,170</td>
<td>Optional (+/-)</td>
<td>5,170</td>
</tr>
</tbody>
</table>

1. *Units of measure (AF, MG, or CCF)* must remain consistent throughout the UWMP, as reported in SB X7-7 Table 0 and Submittal Table 2-3.

2. *Meter Error Adjustment* - See guidance in Methodology 1, Step 3 of Methodologies Document

NOTES:

---

### SB X7-7 Table 4-A: 2020 Volume Entering the Distribution System(s)

Complete one table for each source.

<table>
<thead>
<tr>
<th>Name of Source</th>
<th>State Water Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>This water source is (check one):</td>
<td></td>
</tr>
<tr>
<td>□ The supplier's own water source</td>
<td></td>
</tr>
<tr>
<td>✓ A purchased or imported source</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Compliance Year</th>
<th>Volume Entering Distribution System</th>
<th>Meter Error Adjustment</th>
<th>Corrected Volume Entering Distribution System</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>8,922</td>
<td>8,922</td>
<td></td>
</tr>
</tbody>
</table>

1. *Units of measure (AF, MG, or CCF)* must remain consistent throughout the UWMP, as reported in SB X7-7 Table 0 and Submittal Table 2-3.

2. *Meter Error Adjustment* - See guidance in Methodology 1, Step 3 of Methodologies Document

NOTES:
### SB X7-7 Table 5: 2020 Gallons Per Capita Per Day (GPCD)

<table>
<thead>
<tr>
<th>2020 Gross Water Fm SB X7-7 Table 4</th>
<th>2020 Population Fm SB X7-7 Table 3</th>
<th>2020 GPCD</th>
</tr>
</thead>
<tbody>
<tr>
<td>13,332</td>
<td>86,906</td>
<td>137</td>
</tr>
</tbody>
</table>

**NOTES:**

Extraordinary Events
Weather Normalization
Economic Adjustment

### SB X7-7 Table 9: 2020 Compliance

<table>
<thead>
<tr>
<th>Actual 2020 GPCD</th>
<th>Optional Adjustments to 2020 GPCD</th>
<th>2020 Confirmed Target GPCD</th>
<th>Did Supplier Achieve Targeted Reduction for 2020?</th>
</tr>
</thead>
<tbody>
<tr>
<td>137</td>
<td>Extraordinary Events</td>
<td>-</td>
<td>137</td>
</tr>
<tr>
<td></td>
<td>Weather Normalization</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Economic Adjustment</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TOTAL Adjustments</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Adjusted 2020 GPCD (Adjusted if applicable)</td>
<td>137</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2020 Confirmed Target GPCD</td>
<td>132</td>
<td>NO</td>
</tr>
</tbody>
</table>

1 All values are reported in GPCD

2 **2020 Confirmed Target GPCD** is taken from the Supplier’s SB X7-7 Verification Form Table SB X7-7, 7-F.

**NOTES:**
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Appendix H

Recycled Water Sales Agreement
AGREEMENT BETWEEN CITY OF NAPA
AND
NAPA SANITATION DISTRICT
FOR
SALE OF RECYCLED WATER WITHIN
CITY OF NAPA WATER SERVICE AREA

This Agreement is made this 4th day of AUG 1998, by and between the City of Napa ("City"), a Charter City incorporated under the laws of the State of California, and Napa Sanitation District ("NSD"), a public district formed and governed by California Health and Safety Code section 4700 et seq.

WHEREAS, under its municipal powers CITY acquires water supplies and treats and delivers potable water to inhabitants and businesses within its water service area:

WHEREAS, NSD treats the wastewater generated by the inhabitants and businesses within the CITY's water service area and thus has a ready supply of recycled water available for non-potable uses:

WHEREAS, both the CITY and NSD desire to utilize the water supplies which they each have available to maximize the efficiency and minimize the costs of water supply for various purposes to the inhabitants and businesses within the CITY's water service area.

NOW THEREFORE, IN CONSIDERATION OF THE MUTUAL PROMISES CONTAINED HEREIN, THE PARTIES DO HEREBY AGREE AS FOLLOWS:

1. CITY Water Service Area Defined
   a. The CITY's water service area covers the area generally shown on the map attached hereto as Exhibit A.
   b. CITY is the sole purveyor of water within its water service area, provided however, that during the term of this Agreement, CITY agrees that NSD may provide and deliver recycled water within the CITY's water service area to the extent provided herein.

2. Service area for Recycled Water Delivery Designated:
   a. Upon execution of this Agreement, and during its term, CITY shall permit NSD to solicit customers for its recycled water and to deliver recycled water to
customers within the portion of the CITY's water service area shown on Exhibit A as the ReUse Area, being:

(1) The area east of the Napa River, south of Imola Avenue, west of Highway 221, and north of the City of American Canyon water service area, and;

(2) The properties known as "Stanley Ranch", "South Napa Market Place", and "Napa State Hospital", and the NSD property north of and adjacent to Imola Avenue east of the Napa River.

b. Delivery of recycled water within additional portions of the CITY's water service area shall require the prior written approval of the CITY notwithstanding any approval or authority from SWRCB to convey recycled water within the entire area set forth on Exhibit A.

c. The area within which NSD may deliver recycled water pursuant to this Agreement or any amendment thereof shall be referred to as the "ReUse Area."

d. CITY shall not agree to or approve of the delivery of recycled water within the ReUse Area other than by NSD during the term of this Agreement.

3. Recycled Water Facilities:

a. Construction of facilities, including without limitation pipelines, meters and pumps, for treatment, conveyance and delivery of recycled water within the ReUse Area shall be subject to all applicable regulatory approvals and procedures, and subject further to the CITY's review and imposition of conditions designed to avoid conflicts with other facilities and utilities to the extent they are within the CITY rights-of-way.

b. NSD shall own, construct, maintain, operate and repair all facilities necessary for the treatment, conveyance, delivery, and measurement of recycled water.

c. NSD shall notify CITY of new recycled water customers within the reuse area at least 60 days prior to connection to NSD recycled water facilities.

4. Reimbursement for Loss of Revenue:

a. NSD shall reimburse CITY for CITY's loss of potable water sales revenue due to CITY's existing customers ("prior CITY customers") taking delivery of recycled water from NSD in lieu of purchasing potable water supplies from the CITY. The amount of reimbursement shall be calculated for the aggregate total of all prior CITY customers, as set forth below:
(1) Within 30 days of [the end of the calendar year], NSD shall report to CITY the identities and addresses of all recycled water customers within the ReUse Area, and the date that each customer connected to the recycled water system.

(2) The CITY shall determine whether each such recycled water customer is a prior CITY customer. For all such prior CITY customers, CITY shall determine the aggregate net revenue CITY would have received from the sale of potable water based on:

a. The quantity of potable water each prior CITY customer consumed the average of three year’s prior to conversion to recycled water, and

b. The applicable potable water rates during the current calendar year that the prior CITY customer would have paid if remaining on CITY’s potable system, less the costs of energy and chemicals required to produce and treat such water. Costs of producing and treating potable water shall be determined on a proportional basis with the cost of producing and treating all potable water delivered by CITY during the same period.

(3) CITY shall notify NSD in writing of its determination of the amount of reimbursement due CITY from NSD pursuant to this Article, together with the costs and calculations supporting its determination, and within 30 days of such notification NSD shall pay to CITY the amount of reimbursement owed (see Exhibit “B” for example calculation). If NSD disagrees with CITY’s determination of the amount of reimbursement due, NSD shall notify CITY within 20 days of NSD’s receipt of notice and pay any undisputed amount within 30 days of CITY’s original notice to NSD. Thereafter, the parties shall meet as soon as possible to discuss the disagreement and attempt to resolve the matter within 60 days of CITY’s original notice to NSD. If no resolution is achieved, the matter shall be arbitrated pursuant to the provisions of Section 10, below.

b. NSD’s reimbursement obligation shall continue from year to year until the amount of CITY potable water sales, measured in gallons, has regained its previous level prior to such conversion. For purposes of calculating the amount of reimbursement due the CITY for conversion to recycled water by a prior CITY customer.

(1) The rate of increase of CITY potable water sales, measured in gallons, is deemed by the parties to be three-quarters of one percent (0.75%) per year, and
(2) The year from which growth in CITY's potable water sales is to be measured in gallons is the last preceding year in which NSD's reimbursement obligation was zero, and

(3) CITY's increase of .75% per year shall be subtracted from CITY's net lost potable water sales measured in gallons as defined in Section 4 a. (2) above (See Exhibit "B" for example calculation).

c. Reimbursement obligations shall apply only to customers which, prior to taking delivery of recycled water from NSD, purchased potable water supplies from CITY.

d. For purposes of water conservation reporting, NSD shall provide CITY with quantities of recycled water delivered to each recycled water customer within the ReUse Area.

5. Disclosure of Recycled Water Costs:

So that potential customers in the ReUse Area understand the cost factors associated with determining the price of recycled water, NSD shall advise all potential customers of the various components of the recycled water rate in advance of obtaining a service commitment including, but not limited to:

a. Capital Costs of Delivery Facilities (Pipelines, Pumps, Meters, etc.)

b. Operating and Maintenance Costs of Delivery Facilities

c. Capital Costs of Wastewater Treatment Facilities

d. Energy and Chemical Costs of Wastewater Treatment

6. Reciprocal Rights to Water Service:

a. NSD shall make available at no cost up to 16,300,000 gallons (approximately 50 acre feet) of recycled water per year to CITY for irrigation of Kennedy Park, not including the Kennedy Golf Course, for irrigation purposes. NSD shall make available at no cost up to 16,300,000 gallons (approximately 50 acre feet) of recycled water per year to Napa Valley College for irrigation purposes. Any water used by CITY's Kennedy Park in excess of 16,300,000 gallons per year shall be billed to CITY at NSD's recycled water rate charged to other comparable recycled water customers. Any water used by the Napa Valley College in excess of 16,300,000 gallons per year shall be billed to Napa Valley College at NSD's recycled water rate charged to other comparable recycled water customers.
b. CITY shall make available to NSD at no cost up to 3,600,000 gallons (approximately 11 acre feet) of potable water per year for use at NSD’s wastewater treatment plants on Imola Avenue and Soscol Ferry Road and for flushing of sewer mains, but not for filling recycled water reservoir at NSD’s Soscol Treatment Facility to allow delivery to NSD’s recycled water customers for irrigation use. All potable water used by NSD in excess of 3,600,000 gallons per year or for filling recycled water reservoir for irrigation water deliveries, shall be billed to NSD at the rates which CITY then imposes on other potable water customers within CITY’s incorporated boundaries.

c. All recycled water use provided for in this Agreement shall be metered and reported to the CITY. In addition, NSD shall meter separately and report to CITY the amount of all potable water used for filling recycled water reservoir for irrigation water deliveries to NSD customers.

d. NSD and City agree to execute the attached Agreement for Supply of Recycled Water to Kennedy Park (Exhibit “C”) obligating NSD to provide and City to utilize NSD recycled water in place of City potable water to irrigate the Kennedy Golf Course and Park. NSD and City agree to treat the Kennedy Golf Course as a “prior City customer” pursuant to Section 4 hereof for purposes of NSD reimbursing City for its “loss of revenues” attributable to the use of reclaimed water for irrigation on the Kennedy Golf Course. NSD shall supply the recycled water to Kennedy Golf Course upon the same favorable rates and terms offered other users; provided, however, that should NSD impose a monthly surcharge on its recycle rates in order to recoup the monies paid to City under the reimbursement requirement of Section 4 hereof, the amount of the monthly surcharge to City together with NSD’s regular rates charged for recycled water shall not exceed eighty percent (80%) of the rates charged by City to its customers within the City of Napa for potable water. The surcharge shall cease when NSD has recouped the reimbursement to City under Section 4.

In the event City chooses to directly bill recycled water costs to an operator, lessee, etc., of the Kennedy Golf Course, City agrees that such billings shall not exceed the rates charged by NSD plus such reasonable charges necessary to cover City’s administrative costs in connection therewith. The City agrees not to utilize the well water on City property for irrigation of the Golf Course except in the event that NSD is unable to deliver sufficient reclaimed water to the City and use is in compliance with all applicable federal and state laws.

NSD and City agree to execute an Agreement for Sale of Recycled Water in substantially the form as attached hereto as Exhibit “C”, within 30 days of this Agreement becoming effective as specified in Section 8 and Section 11, below.

7. **Indemnification and Hold Harmless:**

NSD shall indemnify CITY and hold harmless the CITY, its officers, officials, agents, and employees from and against any and all claims, damages, demands,
liability, costs, losses and expenses, including without limitation court costs and 
reasonable attorneys' fees arising out of or in connection with the treatment, 
conveyance, delivery of NSD's recycled water for subsequent use, except such loss or 
damage which was caused by the active negligence or willful misconduct of CITY.

8. **Term of Agreement:**

This Agreement shall become effective upon the later of the dates of approval 
and adoption of the Agreement by the Napa City Counsel and the NSD Board of 
Directors.

The Agreement shall remain effective until twenty years from its effective date, 
and may be renewed for successive terms upon conditions acceptable to both parties. 
The parties agree that NSD may continue to serve properties receiving recycled water 
pursuant to the terms of this Agreement on the termination date whether or not the 
Agreement is renewed. The parties also agree that Napa Sanitation District shall 
continue to supply recycled water to the City for Kennedy Park and to Napa Valley 
College and that the City will in return provide potable water to the District for main 
flushing and use at Districts treatment plants pursuant to Section 6 after the termination 
date of this Agreement whether or not this Agreement is renewed. District agrees that, 
if by virtue of changes in its treatment process and regulatory requirements, its 
recycled water is deemed "potable" pursuant to state law, it will not deliver said water to 
its recycled water customers within City's service area as "potable" water unless City 
grants written permission.

9. **Miscellaneous:**

a. This Agreement constitutes the entire agreement and under standing 
between the parties, and supersedes all offers, negotiations and other agreements 
concerning the subject matter contained herein. Any amendments to this Agreement 
must be in writing and duly authorized and executed by both parties.

b. If any provision of this Agreement is invalid or unenforceable with respect 
to any party, the remainder of this Agreement or the application of such provision to 
persons other than those as to whom it is held invalid or unenforceable, shall not be 
affected and each provision of this Agreement shall be valid and enforceable to the 
fullest extent permitted by law.

c. This Agreement shall be binding on and inure to the benefit of the 
successors of the respective parties.

d. Any notice of demand required to be given herein shall be made by 
certified or registered mail, return receipt requested, or reliable overnight courier to the 
address of the respective parties set forth below:
Either party may, from time to time, designate any other address for this purpose by written notice to the other party. All notices hereunder shall be deemed received upon actual receipt.

e. This Agreement shall be governed by the laws of the State of California.

f. In any case where the approval or consent of one party hereto is required, requested or otherwise to be given under this Agreement, such party shall not unreasonably delay or withhold is approval or consent.

g. All Exhibits annexed hereto form material parts of this Agreement.

h. This Agreement may be executed in duplicate counterparts, each of which shall be deemed an original.

10. Arbitration:

Any dispute or claim in law or equity between the parties arising out of this Agreement which is not settled through mediation shall be decided by neutral, binding arbitration and not by court action, except as provided by California Law for judicial review of arbitration proceedings. The arbitration shall be conducted in accordance with the rules of the American Arbitration Association. The parties may agree in writing to use different rules and/or arbitrators. In all other respects, the arbitration shall be conducted in accordance with Part 3, Title 9 of the California Code of Civil Procedure. Judgment upon the award rendered by the arbitrator may be entered in any court having jurisdiction thereof. The parties have the right to discovery in accordance with the Code of Civil Procedure Section 1283.05.

11. Effective Date:

NSD has filed a Petition for Change with the State Water Resources Control Board to permit it to convey recycled water within the area specified in the petition which is attached hereto as Exhibit C. This Agreement shall only become effective when NSD secures a permit from the State Water Resources Control Board permitting the change and obtains the required permissions from the Regional Water Quality
Control Board necessary to sell recycled water within the area encompassed by this Agreement.

Executed the day and year first above written, by the parties as follows:

CITY OF NAPA:

Ed Henderson

ATTEST:

Pamela Ingvar
CITY CLERK

COUNTERSIGNED:

Jed Christiansen
FINANCE DIRECTOR

NAPA SANITATION DISTRICT

By:

Susan Staples
SECRETARY
NAPA SANITATION DISTRICT

APPROVED AS TO FORM:

CITY ATTORNEY

APPROVED AS TO FORM:

Date: 7-8-98

DISTRICT LEGAL COUNSEL
EXHIBIT "B"

Example of Reimbursement to the City for Conversion to NSD Recycled Water

Notes:
1. Reimbursement for each customer is calculated independently from other customers converted to NSD Recycled Water.
2. The First year is the full calendar year following the date the potable water customer connects to NSD Recycled Water.
3. The First Year net potable water sales is used for revenue reimbursement calculations until reimbursement obligations are fulfilled.
4. The City of Napa's net potable water sales growth is determined to be 0.75% for the purpose of calculating the City's revenue reduction do to lost customers.
5. Potable annual water consumption is determined to be the average potable water use for the previous three years from the date of connection to NSD Recycled Water. Average annual water consumption will be based on less than three years of water use information if water use history is not available.
6. The current year potable water rate shall be used for calculating revenue loss to the City.

Example One:
Existing City of Napa water customer with the following characteristics:
Water Consumption = 50,000,000 gallons per year (prior 3 year average)
Current Water Rate (year 2000) = $3.00 per thousand gallons
Annual Revenue to City from Customer = $150,000
City Chemical and Energy Costs for Treatment = $0.20/ thousand gallons
City Revenue Reduction from Conversion to NSD = $140,000.00
Net Potable Water Sales (year 2000) = $11,500,000.00

Customer switches to NSD Recycled Water April 1, 1999. NSD notifies City of customer switch to recycled water and reimbursement begins with the following calendar year (for this example the year 2000). In January of 2001 the City bills NSD for Revenue lost due to conversion to Recycled Water for full calendar year.

First Year:
Reimbursement the first year equals the total revenue loss by the City.
City Revenue Reduction from Conversion to NSD:
$150,000 - ($0.20 x 50,000 units) = $140,000.00

Reimbursement to the City for January 1 through December 31, 2000 = $140,000.00.
Second Year:
Reimbursement is reduced by City’s net potable water sales growth for year (0.75%). Use First Year as base year net potable water sales:
Revenue Growth = $11,500,000.00 x 0.0075 = $86,250.00
Current Water Rate (year 2001) = $3.25 per thousand gallons
Annual Revenue Loss to City from Customer = $162,500.00
City Chemical and Energy Costs for Treatment = $0.22/ thousand gallons
City Revenue Reduction from Conversion to NSD:
$162,500 - $86,250 - ($0.22 x 50,000 units) = $65,250.00
Reimbursement to the City for January 1 through December 31, 2001 = $65,250.00.

Third Year:
Reimbursement is reduced by City’s net potable water sales growth for year (0.75%). Use First Year as base year net potable water sales:
Revenue Growth = $86,250 + ($11,586,250 x 0.0075) = $173,146.88
Current Water Rate (year 2002) = $3.35 per thousand gallons
Annual Revenue Loss to City from Customer = $167,500.00
City Chemical and Energy Costs for Treatment = $0.24/ thousand gallons
City Revenue Reduction from Conversion to NSD:
$167,500 - $173,146.88 - ($0.24 x 50,000 units) = $0.00
Reimbursement to the City for January 1 through December 31, 2002 = $0.00. Reimbursement obligation for customer is complete.

Example Two:
Existing City of Napa water customer with the following characteristics:
Water Consumption = 3,500,000 gallons per year (prior 3 year average)
Current Water Rate (year 2003) = $3.55 per thousand gallons
Annual Revenue to City from Customer = $12,425
City Chemical and Energy Costs for Treatment = $0.26/ thousand gallons
City Revenue Reduction from Conversion to NSD = $11,515.00
Net Potable Water Sales (year 2003) = $12,500,000.00

Customer switches to NSD Recycled Water July 25, 2002. NSD notifies City of customer switch to recycled water and reimbursement begins with the following calendar year (for this example the year 2003). In January of 2004 the City bills NSD for Revenue lost due to conversion to Recycled Water for full calendar year.
First Year:
Reimbursement the first year equals the total revenue loss by the City.
City Revenue Reduction from Conversion to NSD:
$12,425 - ($0.26 \times 3,500 \text{ units}) = $11,515.00

Reimbursement to the City for January 1 through December 31, 2003 =
$11,515.00.

Second Year:
Reimbursement is reduced by City’s net potable water sales growth for year
(0.75%). Use First Year as base year net potable water sales:
Revenue Growth = $12,500,000.00 \times 0.0075 = $93,750.00
Current Water Rate (year 2004) = $3.61 per thousand gallons
Annual Revenue Loss to City from Customer = $12,635.00
City Chemical and Energy Costs for Treatment = $0.27/ thousand gallons
City Revenue Reduction from Conversion to NSD:
$12,635 - $93,750 - ($0.27 \times 3,500 \text{ units}) = $0.00

Reimbursement to the City for January 1 through December 31, 2004 =
$0.00. Reimbursement obligation for customer is complete.
AGREEMENT FOR THE SUPPLY OF RECYCLED WATER TO KENNEDY PARK

This Agreement is made and entered into in Napa, California, as of this _____ day of _____, 199_, between NAPA SANITATION DISTRICT, a special district of the State of California (Producer), and the CITY OF NAPA, a Charter City incorporated under the laws of the State of California (User), and provides as follows:

RECITALS:

A. Producer owns and operates a wastewater treatment plant in Napa County, California, which is in the San Francisco Bay Region of the California Regional Water Quality Control Board (the Regional Board), and collects and treats wastewater, discharges treated wastewater to the Napa River and recycles wastewater generated within Producer’s service area.

B. User owns approximately 340 acres of land in Napa County, California, more particularly described in Exhibit “1” attached hereto and incorporated herein by reference, which land has been improved for park and recreation purposes (“Property”) composed of Kennedy Park and Kennedy Golf Course.

C. Producer employs wastewater reclamation as a means of reducing the discharge of treated wastewater to the Napa River.

D. Producer is authorized to sell recycled water, pursuant to Order 96-011 adopted by the Regional Board on January 17, 1996, together with all attachments thereto.
E. User is interested in purchasing recycled water from Producer for use in irrigating its landscaping, to be used and applied only in such ways as are specifically permitted.

F. Producer desires to sell to User, and User desires to purchase from Producer, recycled water on the terms and conditions hereinafter set forth.

G. Producer and User entered into an Agreement for the Sale of Recycled Water within City of Napa Water Service Area dated ________ (hereinafter "Master Agreement")

AGREEMENT:

1. **Term.** This Agreement shall become effective on the date first above written and shall remain in effect through the term of the Master Agreement except that the provisions of Section 2, A and B below, shall be modified effective November 1, 2015 to render User’s payment terms consistent with those of other users being served by Producer at that time.

2. **Purchase Price; Payment.**

   A. From the commencement of delivery of recycled water through the year ending December 2001, the cost of recycled water shall be $.75 per one thousand (1000) gallons. Beginning January 1, 2002, and each calendar year thereafter during the term of this Agreement, the cost of “unrestricted use” recycled water shall be established by the annual CPI adjustment described below.

   B. After December 31, 2001, the rates for recycled water shall be subject to adjustment as of the first day of January every year of the term (the adjustment date) beginning with the year 2002 according to the following computation. The basis for the adjustment is the index figure for the month of January, 2001, as
shown for the Consumer's Price Index for all Urban Consumers, San Francisco-Oakland Metropolitan Area (1982-84 = 100), published by the U. S. Department of Labor's Bureau of Labor Statistics (CPI), which is referred to as the "Beginning Index." The CPI index figure published for the month preceding the adjustment date in question, which is referred to as the "Adjustment Index," shall be utilized in determining the amount of adjustment.

If the Adjustment Index is different than the Beginning Index, the adjusted rates for the period beginning on each adjustment date and continuing to the next adjustment date shall be computed by multiplying the rates for 1000 gallons of recycled water provided in subparagraph B by a fraction, the numerator of which is the Adjustment Index and the denominator of which is the Beginning Index; provided, however, that in no year shall the cost of the recycled water as determined by the Annual CPI Adjustment increase or decrease from the cost for the previous year by more than 5%. For illustrative purposes only, examples of calculations of the cost of "unrestricted use" recycled water in accordance with the Annual CPI Adjustment are set forth in Exhibit "2" hereto.

If the CPI is changed so that the base year differs from that in effect in January, 2001, the index shall be converted in accordance with the conversion factor published by the United States Department of Labor, Bureau of Labor Statistics. If the CPI is discontinued or revised during the term, such other governmental index or computation with which it is replaced shall be used in order to obtain substantially the same result as would be obtained if the CPI had not been discontinued or revised.

C. Maximum cost of water provided to the City shall as be provided in Section 6 of Master Agreement.

D. Notwithstanding subparagraphs A through B above, if Producer is providing recycled water to any user (other than a federal, state or local agency whose use of the recycled water is for the creation, enhancement or restoration of
intermittent wetlands, wetlands or marshes) at a lower cost at any time during the term of this Agreement, that same lower cost shall be charged to User for the period of time during which said lower cost is in effect.

E. User shall be billed monthly for water delivered to the meter which serves the golf course and payment shall be due and payable within thirty (30) days of the date of the bill. Interest shall accrue on any amount not paid within thirty (30) days of the date of the bill at the rate of one (1%) percent per month. If User shall fail to pay any amount due within ninety (90) days of the date of a bill therefore, Producer may at its option suspend deliveries of recycled water until the account is brought current. Except as provided in the Master Agreement, User shall not be billed for Recycled Water supplied to Kennedy Park.

3. Compliance With Water Quality Control Board Order 96-011; Compliance With Requirements of Producer.

A. Producer and User shall comply with all of the provisions and requirements of Order 96-011 adopted by the California Regional Water Quality Control Board, San Francisco Bay Region on January 17, 1996, and all attachments thereto (the Order), as it may subsequently be amended. A copy of the Order is attached hereto as Exhibit “3” and incorporated herein by this reference. User acknowledges to Producer that User is aware that the water sold pursuant to this Agreement is recycled water to be used for only specified and limited uses, that User has received a copy of the Order attached as Exhibit “3” to this Agreement, that User is familiar with and understands all of the provisions and requirements contained in the Order and that those provisions and requirements are reasonable, and that User covenants and warrants that it shall comply with all the provisions and requirements of the Order in the purchase and use of the recycled water.

B. User also shall comply with all of the additional provisions and requirements established by Producer, in the purchase and use of the recycled
water, which are set forth in the Producer's Water Reuse Program Manual, Exhibit “4”, attached hereto and incorporated herein by this reference.

C. User shall use the recycled water delivered hereunder only for those uses authorized in the Recycled Water User permit and consistent with the Order and the requirements of Producer set forth in Exhibit “4”.

4. Quality of Recycled Water Sold.

A. User understands that the recycled water that will be delivered to User hereunder has undergone a tertiary treatment process at Producer's Soscol Water Recycling Facility and is commonly referred to as “Unrestricted Use Recycled Water.”

B. User understands that the recycled water to be purchased and used by User is wastewater that has been reclaimed as a result of sewerage treatment operations, and is suitable only for these uses, and in those areas specified in the permit granted User by Producer. The quality of the recycled water sold pursuant to this Agreement shall comply in all respects with the quality criteria established by the Order, although the recycled water's quality may vary within those criteria. Producer shall test the recycled water as required by the Regional Board to ensure that it meets the quality criteria set forth in the Order. The results of this testing program shall be available to User for its review upon request at any time during Producer's normal business hours. In addition to the monitoring and testing requirements of the Regional Board, Producer will test the recycled water delivered to User for the following parameters listed in Table 1.

(The rest of this page left intentionally blank)
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Desired Agronomic Range</th>
<th>Typical Maximum Values</th>
<th>Testing Frequency</th>
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<tr>
<td>pH (pH units)</td>
<td>6.5 - 8.0</td>
<td>9.0</td>
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<td>EC (mmhos/cm.)</td>
<td>&lt;0.75</td>
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<td>Total Dissolved</td>
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<td>Tin</td>
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<td>Vanadium</td>
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<td>&lt;0.1</td>
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*Results in Table 1 in mg/l unless noted.*
The tests shall be performed according to the "Standards For The Examination of Water And Wastewater" as published jointly by APHA, AWWA, and WEF latest edition.

The results of said tests shall be maintained at Producer's treatment plant and may be reviewed or a copy obtained by User by telephoning Producer. Each February an annual report of the test values will be sent by mail to User. When the test results consistently exceed any of the maximum ranges set forth in Table 1 above, Producer will notify User by telephone or facsimile by the close of the next business day following the day of Producer's receipt of any such test results.

If test results are consistently outside the Maximum Range set forth in Table 1 above, User may, at its option, do the following:

1. Continue receiving the recycled water, as is;
2. Continue receiving the recycled water as is and request in writing that Producer increase the frequency of testing for the item outside the Maximum Range; or
3. Temporarily refuse to accept the recycled water. In this case, User shall notify Producer in writing of its intention to discontinue use and the date on which use will stop. The notice shall include reference to the test results in question (type, test date, etc.).

Upon User having notified Producer as provided for in 3. above, and temporarily refusing to accept the recycled water, User shall be under no obligation to later increase its use to make-up for the water not used. User shall resume acceptance of recycled water within fourteen (14) days after receipt of written notification by Producer that the quality of the recycled water is within the Maximum Ranges set forth in Table 1.

5. Delivery and Availability of Recycled Water;
   Interruption of Service.
A. Producer will deliver the recycled water to User through a pipeline extension from Producer’s reclamation site, located at the end of Soscol Road, Napa, California, to the “Delivery Point” on User’s Property shown on the site plan at Exhibit “5” attached hereto and incorporated herein by this reference. The recycled water shall be delivered to the Delivery Point between 100 and 150 pounds per square inch and at a rate of between 2,150 and 2,200 gallons per minute. User shall install at its own expense, as necessary, a pressure regulator at the Delivery Point. User may have its own irrigation pump stations and reservoirs located on the Property, to be paid for by User. User shall be responsible for the operation, maintenance and repair of any pressure regulator and the pipeline transporting the recycled water and for the recycled water from the Delivery Point to User’s places of use. Producer shall be responsible for the operation, maintenance and repair of the pipeline transporting recycled water and for the recycled water to the Delivery Point.

B. User acknowledges and understands that Producer’s delivery of recycled water during the winter discharge period is subject to the Order and the waste discharge requirements imposed by the Regional Board, as such may be amended from time to time.

C. User agrees to cooperate with Producer, at Producer’s request, in the establishment of reasonable and mutually agreeable delivery schedules for the recycled water. User recognizes that the requests of various users may overload the capacity of Producer’s Water Recycling Facility and delivery system and that Producer therefore may need to reduce the rates at which recycled water is delivered to the various users from time to time. In the event that the Producer reduces User’s requested rate of delivery, Producer shall use its best efforts to restore the rate of delivery as soon as possible and provide User with that amount of water it would have received had its rate of delivery not been reduced.

D. Producer shall insure that the number of new customers and volume of water committed does not exceed the capacity of the plant to supply recycled
water consistently to the City. In the event Producer creates a system of user priorities for use of recycled water, Producer agrees that User shall be in the highest level for water delivered to the golf course.

E. Producer shall use its best efforts to ensure that service to User is provided consistent with the established delivery schedules, and User shall use its best efforts to accept recycled water as provided herein. However, both parties acknowledge that Producer's supply and delivery of recycled water and User's ability to take delivery of said water may occasionally be interrupted or curtailed due to Acts of God, power failures, accident, fire, strikes, riots, war, facility failures, facility improvements, inspection, maintenance and repairs of plant and equipment, actions or decisions by a governmental agency, or any condition outside of a party's control. Each party shall not be liable to the other for damages arising out of interruption or curtailment of service for these reasons. Insofar as feasible, the party whose performance hereunder is affected by such condition shall give the other party at least 72 hours advance notice of a temporary discontinuance or reduction in its delivery (in the case of Producer) or in its acceptance (in the case of User) of recycled water, except in the case of emergency, in which case notice need not be given. In the event of such discontinuance or reduction, the parties shall deliver or accept, as appropriate, upon resumption of service and as nearly as may be feasible, the quantity of recycled water that would have been delivered or accepted in the absence of such discontinuance or reduction.

F. Producer agrees to cooperate with user in delivering water before May 1 and after November 1 if climatic conditions require irrigation to landscaping during those periods.

G. In the event Producer is unable to deliver a sufficient quantity and pressure of water to User, User may utilize alternative sources of water for its Property. Use of alternative sources of water may continue until such time as Producer is able to deliver recycled water in accordance with the terms of this Agreement. User may also utilize alternative sources of water to irrigate the greens of the golf course to supplement its use of recycled water.
6. **Measurement of Delivered Recycled Water.** All recycled water delivered pursuant to this Agreement shall be measured by the Producer at the meter located at the Delivery Point. Producer shall own, inspect operate, maintain, repair and replace the measuring equipment. All determinations relative to the measuring of recycled water shall be made by the Producer. Upon request by User, the accuracy of a measurement shall be investigated by the Producer and any error appearing therein shall be adjusted. User may inspect such measuring equipment for the purpose of determining the accuracy thereof.

7. **Monitoring Reports.** User shall fill out monitoring reports on the form prescribed by the District on a weekly basis or as otherwise required by the Producer and submit them to Producer by the fifth (5th) day of each month with respect to the immediately preceding month. Any loss of recycled water off-site by spray or runoff shall be fully reported by User in such reports stating what corrective action(s) have been taken to prevent the violation from occurring again.

8. **User's Rights to Recycled Water Nontransferable.** User's rights to recycled water deliveries hereunder are not transferable or assignable. User shall not sell, give, transfer or distribute any of the recycled water purchased by it pursuant to this Agreement to any other party for any use, and User shall be the sole party using the recycled water.

9. **Hold Harmless and Indemnification.** Each party hereto agrees to release, indemnify, defend and hold harmless the other party and its directors, officers, employees, agents, successors and assigns from and against any and all actual or potential claims, liabilities, damages, losses, fines, penalties, judgments, awards, costs and expenses (including without limitation reasonable attorneys' fees and costs and all foreseeable, unforeseeable and consequential damages) asserted against, resulting to, imposed upon or incurred by said other party by reason of the first party's breach of any provisions of this Agreement or the Order. This indemnification shall survive the termination of this Agreement.
10. **Notices.** Any notice, action, or demand by either party to the other in connection with this Agreement shall be deemed to have been fully given or made when such notice, action, or demand is written and deposited in a sealed envelope postage prepaid, and addressed as designated at the end of this Agreement. Either party may change its address by giving the other party written notice of its new address as herein provided.

11. **Entire Agreement.** This Agreement and the Master Agreement shall constitute the entire agreement between the parties relating to the rights granted and obligations assumed in this Agreement. Any oral representations or modifications concerning this Agreement shall be of no force and effect unless contained in a subsequent written modification signed by both parties.

12. **Amendments.** This Agreement may not be amended except by a written instrument that is signed by both parties.

13. **Interpretation.** This Agreement shall be construed, interpreted, and applied according to the laws of the State of California.

14. **Attorneys' Fees.** If either party commences an action at law or in equity, arbitration or other proceeding against the other party to enforce or interpret this Agreement, the prevailing party shall be entitled to recover from the losing party reasonable attorneys' fees and costs of such proceeding, in addition to any other amounts which may be awarded.

15. **Severability.** If any clause or provision of the Agreement is or becomes illegal, invalid, or unenforceable because of present or future laws, or any rules or regulations of any governmental body or entity, effective during its term, the intention of the parties is that the remaining parts of this Agreement shall remain in full force and effect if the fundamental purpose of the Agreement is not destroyed.
Executed the day and year first above written, by the parties as follows:

CITY OF NAPA

Ed Henderson  
MAYOR

NAPA SANITATION DISTRICT

James Long
CHAIRMAN

ATTEST:

Amy Warren
CITY CLERK

SUSAN STAPES
SECRETARY
NAPA SANITATION DISTRICT

COUNTERSIGNED:

Fred Christensen
FINANCE DIRECTOR

APPROVED AS TO FORM:

[Signature]
CITY ATTORNEY

APPROVED AS TO FORM:

[Signature]
DISTRICT LEGAL COUNSEL

DATED: 4 August 1998

C:\AGREEMENTS\REC\WATER\CITY
AMENDMENT NO. 1 TO CITY AGREEMENT NO. 7247
AGREEMENT FOR SALE OF RECYCLED WATER WITHIN CITY OF NAPA WATER SERVICE AREA

City Budget Code: ______________________

This Amendment No. 1 ("Amendment") to City Agreement No. 7247, entitled "Agreement between City of Napa and Napa Sanitation District for Sale of Recycled Water" ("Agreement"), by and between the City of Napa, a California charter city ("City"), and the Napa Sanitation District, a public district formed and governed by California Health and Safety Code section 4700 et seq. ("NSD") is effective on the Effective Date identified on the signature page.

RECITALS

A. On or about August 4, 1998, the City and NSD entered into the Agreement, which describes the terms by which the City authorizes NSD to sell recycled water within a portion of the City’s water service area, as identified as the "Original ReUse Area" depicted on Exhibit "A," attached hereto and incorporated herein by reference.

B. NSD has constructed recycled water pipelines to serve areas outside the City’s water service area to the east of the City limits, and those pipelines have capacity to serve additional properties that are outside the Original ReUse Area but within the City’s water service area, generally located along Coombsville Road, in the areas as identified as the "Additional ReUse Area" ("Tulocay Cemetery" and "Silverado Middle School") depicted on Exhibit "D," attached hereto and incorporated herein by reference.

C. NSD has requested approval from the City, in accordance with the terms of this Amendment, to allow the sale of recycled water within the Additional ReUse Area.

NOW, THEREFORE, the City and NSD, for the mutual consideration described herein, agree as follows:

1. INCORPORATION BY REFERENCE. This Amendment incorporates the Agreement by reference, except and only to the extent that any terms or conditions of the Agreement are specifically modified by this Amendment. All terms and conditions in the Agreement that are not specifically modified by this Amendment remain in full force and effect.

2. AMEND AGREEMENT SECTION 1. Agreement Section 1 is hereby deleted in its entirety and replaced with the following:

   "1. "City is the sole purveyor of water within its water service area; provided however, City agrees that NSD may provide and deliver recycled water within a portion of the City’s water service area designated herein as the ReUse Area, in accordance with the terms of this Agreement."

3. AMEND AGREEMENT SECTION 2. Agreement Section 2 is hereby deleted in its entirety and replaced with the following:

   "2. Service area for Recycled Water Delivery Designated:

   a. Upon execution of this Agreement, and during its term, City shall permit NSD to solicit customers for its recycled water and to deliver recycled water to customers within the portion of the City’s water service area defined and referred to herein as the "ReUse Area." The ReUse Area shall include the "Original ReUse Area" (as shown on Exhibit "A") and the "Additional ReUse Area" (as shown on Exhibit "D"). The ReUse Area includes:

   

Amendment No. 1 to Agreement 7247 Agreement for Sale of Recycled Water Page 1 of 3 Form 2.2.1 (2018-01-12)
(1) The portion of the Original ReUse Area shown on Exhibit “A” as the area east of the Napa River, south of Imola Avenue, west of Highway 221, and north of the City of American Canyon water service area, and;

(2) The portion of the Original ReUse Area shown on Exhibit “A” as the properties known as “Stanley Ranch”, “South Napa Market Place”, “Napa State Hospital”, and the former NSD property north of and adjacent to Imola Avenue east of the Napa River, and;

(3) The Additional ReUse Area shown on Exhibit “D” as the properties on Coombsville Road designated as “Tulocay Cemetery” and “Silverado Middle School”.

b. Delivery of recycled water within any portions of the City’s water service area that are outside the ReUse Area shall require the prior written approval of the City.

c. City shall not agree to or approve of the delivery of recycled water within the ReUse Area other than by NSD during the term of this Agreement.”

4. ENTIRE AGREEMENT. The Agreement, as modified by this Amendment, constitutes the entire integrated understanding between the parties concerning the delivery of recycled water service within the ReUse Area. This Amendment supersedes all prior negotiations, agreements and understandings regarding the delivery of recycled water service within the ReUse Area, whether written or oral. The documents incorporated by reference into this Amendment are complementary; what is called for in one is binding as if called for in all, except and only to the extent otherwise specified. If any provision in an exhibit to this Amendment conflicts with or is inconsistent with a provision in the body of this Amendment, the provisions in the body of this Amendment will control over any such conflicting or inconsistent provisions.

5. SIGNATURES. The individuals executing this Amendment represent and warrant that they have the right, power, legal capacity, and authority to enter into and to execute this Amendment on behalf of the respective legal entities of NSD and City. This Amendment shall inure to the benefit of and be binding upon the parties hereto and their respective successors and authorized assigns.
IN WITNESS WHEREOF, the Parties have executed this Amendment to be effective on the Effective Date set forth below.

CITY:
CITY OF NAPA, a California charter city

By: Jacques R. LaRochelle, Public Works Director

ATTEST:
Dorothy Roberts, City Clerk
Date: 01/18/18

(City Clerk's signature)

NSD:
Napa Sanitation District, a public district formed and governed by California Health and Safety Code Sections 4700, et seq.

By: Timothy B. Healy, General Manager

ATTEST:
Cheryl Schuh, NSD Clerk of the Board

COUNTERSIGNED:
Desiree Brun, City Auditor

APPROVED AS TO FORM:
Michael W. Barrett, City Attorney

APPROVED AS TO FORM:
John Bakker, NSD Legal Counsel
Napa Sanitation District Recycled Water Policy
(Resolution No. 11-004)
RESOLUTION NO. 11-004

A RESOLUTION
OF THE BOARD OF DIRECTORS OF THE NAPA SANITATION DISTRICT TO
PROVIDE POLICY FOR FUTURE ACTIVITIES ASSOCIATED WITH THE RECYCLED
WATER PROGRAM

WHEREAS, the Napa Sanitation District and its ratepayers have invested significant funds to enable reliable compliance with its NPDES permit; and

WHEREAS, the Board of Directors desires to retain its NPDES permit for discharge to the Napa River but supports increasing water recycling for agricultural, urban and environmental uses; and

WHEREAS, the District has spent much time, effort and money on performing studies, completing designs and seeking funding for various expansion projects, but until recently did so without formal partnership with the beneficiaries of the expansion; and

WHEREAS, the District has determined that this approach would be more effective with partners committing to both sharing of project costs and the use of the recycled water; and

WHEREAS, the District has determined that the maximum amount of recycled water that can be treated and delivered to customers using existing treatment plant pond storage is between 3,700 and 4,600 acre-feet per year, and potential near-term demand for recycled water may be between 5,000 and 6,000 acre-feet per year; and

WHEREAS, existing treatment plant recycled water capacity is approximately 1,700 acre-feet per year; and

WHEREAS, the Wastewater Treatment Plant Master Plan identified phased capital projects to increase high quality recycled water capacity from 1,700 acre-feet per year up to a capacity that maximizes pond storage and plant influent; and

WHEREAS, the District desires to set priorities for the allocation of recycled water to potential users, based on existing commitments to users and input from potential users, and

WHEREAS, there exist properties within the District’s service area and near the District’s existing recycled water system that either have not developed or have not yet connected to the District’s recycled water system, but have or will be paying sewer service charges to the District that support the recycled water system, and
WHEREAS, the Board of Directors has deliberated various options for recycled water policies and received input from affected stakeholders in the region on this matter; and

WHEREAS, the Board of Directors desires to adopt various recycled water policies to provide direction to staff for future recycled water activities;

NOW THEREFORE BE IT RESOLVED, the Board of Directors of the Napa Sanitation District hereby authorizes and directs the implementation of the following policies for future recycled water activities:

1. The priorities for supply of available recycled water are set as follows, and are based on the planning information contained in Table 1, attached:
   (a) Current recycled water customers;
   (b) Parcels within the District’s existing service area close to the District’s existing recycled water system that either have not yet developed, or have already developed but not yet connected to the District’s recycled water;
   (c) Parcels for which an agreement has been executed with the District committing recycled water in the future (e.g. MST);
   (d) Parcels that have been or will be required to use recycled water by local land use authorities or retail water suppliers; and
   (e) Parcels in areas where a recycled water delivery system has been studied and funding is being arranged for construction of piping (e.g. Los Carneros).

2. In order to maximize the availability of recycled water to the most customers, the District may require the user to store recycled water where feasible. The District may utilize pricing to encourage storage, discourage wasteful usage, and stretch water supply.

3. The District supports expansion of the recycled water system to areas outside the District’s service area for the purpose of water supply, but the costs of expansion (such as studies, design, funding, construction and operation) cannot be solely the burden of the District’s ratepayers. For new recycled water projects, the District may require an agreement addressing both funding of the costs of expansion and a commitment to use recycled water. The District will respect service boundaries of adjacent utilities and agreements executed with those utilities for the orderly provision of service.

4. Grant programs for the purpose of expanding recycled water to new customers will be pursued when a partnering agreement with that potential customer or beneficiary is in place.

5. The District, in partnership with Napa County, will continue pursuit of federal, state or other funding.
I hereby certify that the foregoing is a full, true and correct copy of a Resolution duly adopted and passed by the Board of Directors of the Napa Sanitation District, Napa County, California, on the 6th day of April, 2011, by the following vote:

AYES: GRAVETT, LUCE, SHINNAMON, TECHEL, VAN GORDER
NOES: NONE
ABSENT: NONE
ABSTAIN: NONE

[Signature]
Secretary, Napa Sanitation District
Napa County, California

[Signature]
Chair

Resolution of the Board of Directors of the Napa Sanitation District to
Provide Policy for Future Activities Associated with the Recycled Water Program
### Table 1. Planning Information for Allocation of Summer Recycled Water

<table>
<thead>
<tr>
<th>Type of User</th>
<th>Estimated Demand (acre-feet per year)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Existing Uses/Commitments</strong></td>
<td></td>
</tr>
<tr>
<td>Existing Customers in Service Area</td>
<td>1,400</td>
</tr>
<tr>
<td>Montelcino Golf Course (Somky)</td>
<td>300</td>
</tr>
<tr>
<td>Valley Gate Vineyards &amp; Kirkland Ranch</td>
<td>100</td>
</tr>
<tr>
<td>MST (could be as little as 500 AF)*</td>
<td>700</td>
</tr>
<tr>
<td>Los Carneros Water District*</td>
<td>450</td>
</tr>
<tr>
<td>District Use (Jameson Ranch)</td>
<td>100</td>
</tr>
<tr>
<td><strong>SUBTOTAL EXISTING USES/COMMITMENTS</strong></td>
<td><strong>3,050</strong></td>
</tr>
<tr>
<td><strong>Probable Commitments</strong></td>
<td></td>
</tr>
<tr>
<td>Infill (Kennedy Park, Industrial Parks)*</td>
<td>250</td>
</tr>
<tr>
<td>Napa State Hospital</td>
<td>200</td>
</tr>
<tr>
<td>Stanly Ranch (St. Regis)</td>
<td>200</td>
</tr>
<tr>
<td><strong>SUBTOTAL PROBABLE COMMITMENTS</strong></td>
<td><strong>650</strong></td>
</tr>
<tr>
<td><strong>Other Areas Being Discussed in Near-Term</strong></td>
<td></td>
</tr>
<tr>
<td>Los Carneros Water District*</td>
<td>1,200</td>
</tr>
<tr>
<td>Suscol Mountain Vineyards</td>
<td>150</td>
</tr>
<tr>
<td><strong>SUBTOTAL OTHER POSSIBLE AREAS</strong></td>
<td><strong>1,350</strong></td>
</tr>
<tr>
<td><strong>TOTAL PROBABLE DEMAND (acre-feet per year)</strong></td>
<td><strong>5,050</strong></td>
</tr>
</tbody>
</table>

*This table includes changes made by the NSD Board of Directors since its initial adoption on April 6, 2011.*
Appendix J

Water Shortage Contingency Plan
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LIST OF ACRONYMS AND ABBREVIATIONS

AB Assembly Bill
AF Acre-Feet
AWSDA Annual Water Supply and Demand Assessment
City City of Napa
County Napa County
CRMM Community Relations & Media Manager
CWC California Water Code
Delta Sacramento-San Joaquin Delta
DWR Department of Water Resources
ERP Emergency Response Plan
FEMA Federal Emergency Management Agency
GPCD Gallons Per Capita Per Day
HMP Hazard Mitigation Plan
MGD Million Gallons Per Day
NMC Napa Municipal Code
PIO Public Information Officer
RRA Risk and Resilience Assessment
SB Senate Bill
SEMS Standardized Emergency Management System
Supervisor Water Treatment Facility Supervisor
SWP State Water Project
USGS United States Geological Survey
UWMP Urban Water Management Plan
WSCP Water Shortage Contingency Plan
WTP Water Treatment Plant
Water shortages occur whenever the available water supply cannot meet the normally expected customer water use. This can be due to several reasons, such as climate change, drought, and catastrophic events. Drought, regulatory action constraints, and natural and manmade disasters may occur at any time. In 2018, the California State Legislature (Legislature) enacted two policy bills (Senate Bill (SB) 606 (Hertzberg) and Assembly Bill (AB) 1668 (Friedman)) (2018 Water Conservation Legislation) to establish a new foundation for long-term improvements in water conservation and drought planning to adapt to climate change and the resulting longer and more intense droughts in California. The 2018 Water Conservation Legislation set new requirements for water shortage contingency planning.

This Water Shortage Contingency Plan (WSCP) describes the City of Napa’s (City) strategic plan for preparing for and responding to water shortages, including defining water shortage stages and associated shortage response actions. This WSCP provides a guide for the City to proactively prevent catastrophic service disruptions and has been updated to be consistent with the 2018 Water Conservation Legislation requirements. As part of this WSCP, the City’s legal authorities, communication protocols, compliance and enforcement, and monitoring and reporting are described. Chapters 13.10 and 13.12 of the Napa Municipal Code (NMC) support the City’s WSCP. It should be noted that the City is in the process of updating the NMC to be consistent with this WSCP.

The City intends for this WSCP to be dynamic so that it may assess response action effectiveness and adapt to emergencies and catastrophic events. Refinement procedures to this WSCP are provided to allow the City to modify this WSCP outside of the Urban Water Management Plan (UWMP) process.

1.0 WATER SUPPLY RELIABILITY ANALYSIS

Chapters 6 and 7 of the City’s 2020 UWMP present the City’s water supply sources and reliability, respectively. Findings show the City can reliably meet its projected demands through 2045 in normal hydrologic conditions. In single dry year and multiple dry year scenarios, supply shortfalls can be eliminated by reducing demand with the appropriate stage of this WSCP.

Statewide water supply conditions and actions by other agencies may impact the City’s available water supply. A water shortage condition occurs when the available supply of potable water cannot meet ordinary water demands for human consumption, sanitation, fire protection, and other beneficial uses. In some cases, the City may foresee a water shortage, but an unforeseen sudden or emergency event may also cause a water shortage. In general, the City’s water supply conditions may be affected by the following:

- Local surface water availability (Lake Hennessey and Milliken Reservoir yields and available storage for drawdown in dry years)
- State Water Project (SWP) annual supply allocations
- Sacramento-San Joaquin Delta (Delta) and North Bay Aqueduct vulnerability to seismic events, changing environmental and regulatory requirements, and climate change
- Climatic variability and drought conditions

In the future, the City will conduct an annual water supply and demand assessment as described in Section 2.0. The analysis associated with this WSCP was developed in the context of the City’s water supply sources and reliability.
2.0 ANNUAL WATER SUPPLY AND DEMAND ASSESSMENT PROCEDURES

Beginning July 1, 2022, California Water Code (CWC) Section 10632.1 requires water suppliers to submit an Annual Water Supply and Demand Assessment (AWSDA) and an Annual Water Shortage Assessment Report to the Department of Water Resources (DWR). This section provides the procedures for the City to conduct its AWSDA, which will inform the City’s Annual Water Shortage Assessment Report and assist the City with planning for potential water supply shortages. The objective of the AWSDA is to forecast near-term supply conditions so that the City can prepare logistically and financially for any anticipated water supply constraints, as well as enact appropriate shortage response actions in a timely manner.

This section provides the decision-making process, key data inputs, and methodology necessary for the City to produce its AWSDA. This includes steps the City may take to declare a water shortage emergency and associated water shortage stage (see Section 3.0) and implement water shortage response actions (see Section 4.0).

2.1 Decision-Making Process

The City will use the decision-making process described below to consistently produce its AWSDA. The City may adjust and improve this process as needed.

The Deputy Utilities Director (or designee) is responsible for preparing the City’s AWSDA and Annual Water Shortage Assessment Report and submitting them to DWR by July 1st of each year (starting in 2022). This team will gather key data inputs described in Section 2.2 and conduct the assessment in accordance with Section 2.3. In May of each year, the Deputy Utilities Director will finalize the AWSDA based on that year’s final SWP allocation. The AWSDA and Annual Water Shortage Assessment Report will be presented to the Utilities Director for review and approval. If the AWSDA finds that available water supply will be sufficient to meet expected demands for the current year and one subsequent dry year, the AWSDA and Annual Water Shortage Assessment Report will be completed for submittal to DWR.

To conduct the AWSDA, the Deputy Utilities Director (or designee) will follow the schedule of activities shown in Table 1. Due to variations in climate and hydrologic conditions, the timeframes shown in the tables are approximate and may be adjusted as needed. The City intends to implement shortage response actions to effectively address anticipated water shortage conditions in a timely manner while complying with the State’s reporting requirements.
Table 1. Schedule of Annual Water Supply and Demand Assessment Activities

<table>
<thead>
<tr>
<th>Schedule</th>
<th>Activity</th>
<th>Responsible Party</th>
</tr>
</thead>
<tbody>
<tr>
<td>March</td>
<td>Gather applicable information and considerations for the preparation of AWSDA.</td>
<td>Deputy Utilities Director or designee</td>
</tr>
<tr>
<td>Late March</td>
<td>Determine water demands for the current year and one subsequent dry year. Describe demand types and quantities, considering factors affecting demand as described in Section 2.2.</td>
<td>Deputy Utilities Director or designee</td>
</tr>
<tr>
<td>Late March/Early April</td>
<td>Determine water supply sources for the current year and one subsequent dry year. Describe sources and quantities considering factors affecting supply as described in Section 2.2.</td>
<td>Deputy Utilities Director or designee</td>
</tr>
<tr>
<td>Early April</td>
<td>Calculate the City’s water supply reliability for the current year and one subsequent dry year using the methodology described in Section 2.3.</td>
<td>Deputy Utilities Director or designee</td>
</tr>
<tr>
<td>April</td>
<td>Based on determinations of the AWSDA, prepare the Annual Water Shortage Assessment Report with recommendations on water shortage condition determination and response actions. Submit to Utilities Director for review.</td>
<td>Deputy Utilities Director or designee</td>
</tr>
<tr>
<td>April</td>
<td>Review AWSDA and Annual Water Shortage Assessment Report and provide comments as needed.</td>
<td>Utilities Director</td>
</tr>
<tr>
<td>May</td>
<td>Finalize and approve AWSDA and Annual Water Shortage Assessment Report.</td>
<td>Deputy Utilities Director or designee</td>
</tr>
<tr>
<td>By July 1</td>
<td>Submit finalized AWSDA and Annual Water Shortage Assessment Report to DWR.</td>
<td>Deputy Utilities Director or designee</td>
</tr>
</tbody>
</table>

Should the AWSDA find that available supply will not meet expected demands, the City will coordinate internally, with the region’s other water service providers, and with Napa County (County) for the possible proclamation of a local emergency. The Utilities Director will present the finalized assessment to the City Council, along with recommendations on water shortage condition determination and actions. Recommended actions may include declaration of a water shortage emergency, declaration of a water shortage stage, and water shortage actions.

Based on the findings of the AWSDA, the City Council will determine if a water shortage condition exists and, if needed, adopt a resolution declaring a water shortage emergency and an associated water shortage stage and authorizing water shortage actions. The Deputy Utilities Director (or designee) will then prepare the City’s Annual Water Shortage Assessment Report, incorporating City Council determinations and approved actions. The schedule of decision-making activities is provided in Table 2. The timeframes and the activities shown in this table are approximate and may be adjusted as needed.
Table 2. Schedule of Decision-Making Activities if Water Shortage Condition Exists

<table>
<thead>
<tr>
<th>Timeframe</th>
<th>Activity</th>
<th>Responsible Party</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early/Mid-April</td>
<td>If a water shortage emergency condition exists, prepare recommendations on water shortage condition determination and action based on AWSDA findings. Prepare resolutions approving determinations and actions.</td>
<td>Deputy Utilities Director</td>
</tr>
<tr>
<td>Mid-April</td>
<td>Coordinate with the region’s water service providers and with Napa County for the possible proclamation of a local emergency.</td>
<td>Utilities Director</td>
</tr>
<tr>
<td>Late April/Early May</td>
<td>Prepare finalized determinations and recommendations for the City Council, along with resolutions for determinations and actions.</td>
<td>Utilities Director</td>
</tr>
<tr>
<td>May</td>
<td>Receive presentation of finalized determinations and recommendations. Make determination of degree of emergency and act on resolutions that declare a water shortage emergency condition. Authorize water shortage response actions for implementation.</td>
<td>City Council</td>
</tr>
<tr>
<td>After City Council Meeting</td>
<td>If a water shortage emergency condition is declared, implement the WSCP (follow Section 5.0) and the water shortage response actions as approved by the City Council.</td>
<td>Utilities Director</td>
</tr>
<tr>
<td>June</td>
<td>Finalize AWSDA and Annual Water Shortage Assessment Report.</td>
<td>Deputy Utilities Director</td>
</tr>
<tr>
<td>By July 1</td>
<td>Submit final AWSDA and Annual Water Shortage Assessment Report to DWR.</td>
<td>Deputy Utilities Director</td>
</tr>
</tbody>
</table>

2.2 Key Data Inputs

The State requires that the AWSDA evaluate supplies and demands for, at a minimum, the current year and one subsequent dry year. The planned water supply and demand for the current year and a subsequent dry year will be used to evaluate the City’s water supply reliability.

In planning for water supplies, the following factors are considered, as applicable and appropriate:

1. SWP annual supply allocation
2. Lake Hennessey and Milliken Reservoir storage levels
3. Options for supplemental water purchases
4. Hydrological conditions
5. Regulatory conditions
6. Contractual constraints
7. Surface water quality
8. Infrastructure capacity constraints or changes
9. Capital improvement project implementation

Planned water supply sources and quantities will be described and be reasonably consistent with the supply projections in Chapter 6 (Water Supply Characterization) of the City’s most recent UWMP. Should
supply sources and projections differ significantly between the AWSDA and the UWMP, the City will explain the difference.

The AWSDA will examine unconstrained water demands, which are customer demands where no water conservation measures are in effect. In planning for water demands, the following factors are considered, as applicable and appropriate:

1. Weather conditions
2. Water year type
3. Population changes (e.g., due to development projects)
4. Demand trends and anticipated new demands (e.g., changes to land use)
5. Pending policy changes that may impact demands
6. Infrastructure operations

Planned water demand types and quantities will be described and should be reasonably consistent with the demand projections in Chapter 4 (Water Use Characterization) of the City’s most recent UWMP. Should demand projections deviate significantly between the AWSDA and the UWMP, the City will explain the difference.

2.3 Assessment Methodology

In preparing the AWSDA, the City will use the following assessment methodology and criteria to evaluate the agency’s water supply reliability for the current year and following one dry year.

The City uses a spreadsheet to plan for current year and future year supplies and demands. Planned supply and demand inputs described in Section 2.2 will be entered in the spreadsheet in annual increments. As needed, the increments may be revised to monthly or seasonal periods to more closely evaluate specific conditions and needs.

Supply and demand will be compared to determine the City’s water supply reliability in the current year and the following one dry year. The City’s water supply will be deemed reliable if it can meet planned water demands in both the current year and the following dry year. If water supply cannot meet planned water demands in the current year or the following dry year, the extent of the water shortage condition will be determined, and the City will prepare response actions in accordance with this WSCP.

Findings from the AWSDA will be presented to the City Council for consideration, along with recommendations for action.

3.0 SIX STANDARD WATER SHORTAGE LEVELS

To provide a consistent regional and statewide approach for conveying the relative severity of water supply shortage conditions, the 2018 Water Conservation Legislation mandates that water suppliers plan for six standard water shortage levels that correspond to progressive reductions of up to 10, 20, 30, 40, 50 percent, and greater than 50 percent from the normal reliability condition. Each shortage condition should correspond to additional actions water suppliers would implement to meet the severity of the impending shortages.
Water Shortage Contingency Plan

For each of the State’s standard shortage levels (also called “stages”), Table 3 summarizes the water shortage range (i.e., percent shortage from normal supplies) and a brief narrative description of the corresponding water shortage condition. These water shortage stages apply to both foreseeable and unforeseeable water supply shortage conditions. The City’s 2015 UWMP included five stages that addressed up to 50 percent water supply reduction in the first four stages and more than 50 percent in Stage 5. Table 3 presents the City’s reorganized stages, which align with the State’s standard stages.

As described in Section 2.0, the City will conduct an AWSDA to determine its water supply condition for the current year and the following one dry year. Preparing the AWSDA helps the City ascertain the need to declare a water shortage emergency and water shortage stage. In other cases, the City may need to declare a water shortage emergency due to unforeseen water supply interruptions. When the City anticipates or identifies that water supplies may not be adequate to meet the normal water supply needs of its customers, the City Council may determine that a water shortage exists and consider a resolution to declare a water shortage emergency and associated stage. The shortage stage provides direction on shortage response actions.

<table>
<thead>
<tr>
<th>Shortage Level</th>
<th>Percent Shortage Range</th>
<th>Water Shortage Condition Definition</th>
<th>Shortage Response Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Up to 10%</td>
<td>Insufficient carryover storage and supplemental water to provide for 90% of normal supplies.</td>
<td>Voluntary conservation; implement actions per Table 4</td>
</tr>
<tr>
<td>2</td>
<td>Up to 20%</td>
<td>Insufficient carryover storage and supplemental water to provide for 80% of normal supplies.</td>
<td>Voluntary or mandatory conservation; implement actions per Table 4</td>
</tr>
<tr>
<td>3</td>
<td>Up to 30%</td>
<td>Insufficient carryover storage and supplemental water to provide for 70% of normal supplies.</td>
<td>Mandatory conservation; implement actions per Table 4</td>
</tr>
<tr>
<td>4</td>
<td>Up to 40%</td>
<td>Insufficient carryover storage and supplemental water to provide for 60% of normal supplies.</td>
<td>Mandatory conservation; implement actions per Table 4</td>
</tr>
<tr>
<td>5</td>
<td>Up to 50%</td>
<td>Insufficient carryover storage and supplemental water to provide for 50% of normal supplies.</td>
<td>Mandatory conservation; implement actions per Table 4 and Table 5</td>
</tr>
<tr>
<td>6</td>
<td>&gt;50%</td>
<td>Insufficient carryover storage and supplemental water to provide for less than 50% of normal supplies.</td>
<td>Mandatory conservation; implement actions per Table 4 and Table 5</td>
</tr>
</tbody>
</table>
4.0 SHORTAGE RESPONSE ACTIONS AND EFFECTIVENESS

CWC Section 10632 (a)(4) requires shortage response actions that align with the defined shortage levels. The City’s shortage response actions consist of a combination of demand reduction, supply augmentation, and operational changes. The specific suite of response actions implemented depends on the event that precipitates a water shortage stage, the time of the year the event occurs, the water supply sources available, and the condition of the City’s water system infrastructure. In general, the City plans to use a balanced and dynamic approach, adapting its response actions to meet the water use goals associated with the declared water shortage stage.

The City will track progress toward water use reduction goals by analyzing weekly or monthly water production. The analysis will compare the drought production with the previous non-drought production to obtain a percent reduction. The City will increase or decrease its public outreach efforts based on observed usage reduction.

The shortage response actions discussed below may be considered tools that allow the City to respond to water shortage conditions. Because the City may continuously monitor and adjust its response actions to reasonably equate demands with available supply, the extent to which implementation of each action reduces the gap between water supplies and water demand is difficult to quantify and thus only estimated. Certain response actions, such as public outreach and enforcement, boost the effectiveness of other response actions and do not have a quantifiable effect on their own.

4.1 Demand Reduction

The City may request that its customers reduce their water demands during moderate or severe water shortages through NMC Chapters 13.10 and 13.12, respectively. NMC Chapter 13.10 will define a moderate water shortage as requiring a reduction in consumption of up to 30 percent. Therefore, this WSCP presents the water use restrictions to be defined in NMC Chapter 13.10 as being implemented in water shortage Stages 1, 2, and 3, while the prohibitions and limitations defined in NMC Chapter 13.12 are associated with water shortage Stages 4 through 6.

During water shortage conditions, the City plans to reduce demand by implementing the actions shown in Table 4. Demand reduction actions are organized by the triggering water shortage stage, and each action includes an estimate of how much its implementation will reduce the shortage gap. For each demand reduction action, Table 4 also indicates if the City uses compliance actions such as penalties, charges, or other enforcement. Demand reduction actions are only listed in Table 4 in the stage when they are first implemented. The City will continue to use these actions in higher stages unless otherwise noted.
## Water Shortage Contingency Plan

**Table 4. Water Shortage Contingency Plan Demand Reduction Actions (DWR Table 8-2)**

<table>
<thead>
<tr>
<th>Shortage Level</th>
<th>Demand Reduction Actions</th>
<th>How much is this going to reduce the shortage gap?</th>
<th>Additional Explanation or Reference</th>
<th>Penalty, Charge, or Other Enforcement?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Expand Public Information Campaign</td>
<td>See Note 1</td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>1</td>
<td>Offer Water Use Surveys</td>
<td>0-5%</td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>1</td>
<td>Provide Rebates for Turf Replacement</td>
<td>0-5%</td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>2</td>
<td>Landscape - Limit landscape irrigation to specific days</td>
<td>0-20%</td>
<td>No person shall use water to irrigate landscaping on consecutive days. See Note 2.</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>Landscape - Limit landscape irrigation to specific times</td>
<td>0-5%</td>
<td>No person shall use water to irrigate landscaping between the hours of 10:00 a.m. and 5:00 p.m. See Note 2.</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>Landscape - Other landscape restriction or prohibition</td>
<td>0-1%</td>
<td>No person shall use water to irrigate ornamental turf on public street medians.</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>Landscape - Other landscape restriction or prohibition</td>
<td>0-1%</td>
<td>No person shall use water to irrigate landscaping during a measurable rainfall event or within 48 hours thereafter</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>Landscape - Restrict or prohibit runoff from landscape irrigation</td>
<td>0-5%</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>Other - Require automatic shut off hoses</td>
<td>0-1%</td>
<td>When washing a motor vehicle with a hose, the hose must be fitted with a shutoff nozzle or similar device.</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>Other water feature or swimming pool restriction</td>
<td>0-1%</td>
<td>No person shall drain and refill any swimming pool unless that person establishes that it is needed for the purpose of pool repair or to correct a severe chemical imbalance. No person shall drain and refill any decorative pond or lake unless that person establishes that it is needed for the purpose of lining the bottom to prevent absorption.</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>Water Features - Restrict water use for decorative water features, such as fountains</td>
<td>0-1%</td>
<td>Water shall not be used in a decorative fountain or other decorative water feature, except where water is part of a recirculating system.</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>CII - Restaurants may only serve water upon request</td>
<td>0-1%</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>CII - Lodging establishment must offer opt out of linen service</td>
<td>0-1%</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>Other - Prohibit use of potable water for washing hard surfaces</td>
<td>0-1%</td>
<td>Except where necessary to address an immediate health and safety need.</td>
<td>Yes</td>
</tr>
<tr>
<td>3</td>
<td>Landscape - Limit landscape irrigation to specific days</td>
<td>10-25%</td>
<td>No person shall irrigate landscaping more than two days per week.</td>
<td>Yes</td>
</tr>
<tr>
<td>3</td>
<td>Increase Water Waste Patrols</td>
<td>5-10%</td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>3</td>
<td>Other</td>
<td>0-3%</td>
<td>Interruptible-surplus agricultural water agreements may be reduced or suspended.</td>
<td>Yes</td>
</tr>
<tr>
<td>3</td>
<td>Other</td>
<td>0-2%</td>
<td>Water for hauling shall be limited to indoor domestic uses within Napa County and shall be supplied from the City Corporation Yard only. Verification of delivery to approved address is required.</td>
<td>Yes</td>
</tr>
<tr>
<td>3</td>
<td>Pools and Spas - Require covers for pools and spas</td>
<td>0-1%</td>
<td>Pools and spas should remain covered when not in use.</td>
<td>Yes</td>
</tr>
<tr>
<td>4</td>
<td>Implement or Modify Drought Rate Structure or Surcharge</td>
<td>5-30%</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>4</td>
<td>Other</td>
<td>0-3%</td>
<td>Interruptible-surplus agricultural water agreements are suspended.</td>
<td>Yes</td>
</tr>
<tr>
<td>4</td>
<td>Landscape - Limit landscape irrigation to specific days</td>
<td>15-30%</td>
<td>No person shall irrigate landscaping more than one day per week.</td>
<td>Yes</td>
</tr>
<tr>
<td>4</td>
<td>Other - Prohibit use of potable water for construction and dust control</td>
<td>0-1%</td>
<td>Water shall not be used for grading, dust control, street, pipeline or similar heavy construction. Hydrant meters shall not be issued for construction purposes.</td>
<td>Yes</td>
</tr>
<tr>
<td>4</td>
<td>Water Features - Restrict water use for decorative water features, such as fountains</td>
<td>0-1%</td>
<td>Water shall not be used for decorative fountains or the filling of decorative lakes or ponds.</td>
<td>Yes</td>
</tr>
<tr>
<td>4</td>
<td>Other - Prohibit vehicle washing except at facilities using recycled or recirculating water</td>
<td>0-1%</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>5</td>
<td>Landscape - Other landscape restriction or prohibition</td>
<td>0-1%</td>
<td>The installation of new or replacement lawn, sod, or turf is prohibited.</td>
<td>Yes</td>
</tr>
<tr>
<td>5</td>
<td>Landscape - Prohibit certain types of landscape irrigation</td>
<td>5-30%</td>
<td>Residential outdoor watering shall be limited to hand-watering using a hose with a shutoff nozzle, drip, or subsurface irrigation only.</td>
<td>Yes</td>
</tr>
<tr>
<td>5</td>
<td>Other</td>
<td>Depends on extent of existing activities.</td>
<td>Water shall not be used for cleaning streets during or following construction activities; flushing sewers, hydrants, storm drains; flow testing for fire sprinkler design and training of fire fighting personnel.</td>
<td>No</td>
</tr>
<tr>
<td>6</td>
<td>Landscape - Prohibit all landscape irrigation</td>
<td>10-40%</td>
<td>Irrigation of turf or lawn is prohibited.</td>
<td>Yes</td>
</tr>
<tr>
<td>6</td>
<td>Other water feature or swimming pool restriction</td>
<td>0-1%</td>
<td>No person shall drain and refill swimming pools or spas, nor shall new pools be filled.</td>
<td>Yes</td>
</tr>
<tr>
<td>6</td>
<td>Landscape - Prohibit certain types of landscape irrigation</td>
<td>0-5%</td>
<td>Water shall not be used for the irrigation of any commercial crops, including vineyards.</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**NOTES:**
- This action boosts the effectiveness of other actions, so a shortage gap reduction estimate cannot be quantified.
- Except for the initial watering of newly planted landscaping and germination requirements of newly seeded lawns.
- Actions introduced in a lower stage will also be used in higher stages, unless otherwise noted.
The City will monitor water production, water demands, and changing conditions to determine the intensity of its public outreach, the extent of its enforcement actions, and the need to adjust its water shortage stage declaration as discussed in Section 9.0.

### 4.2 Additional Mandatory Restrictions

Beginning with water shortage stage 5, the City may assign maximum water use allocations to customers, as summarized in Table 5. Water use beyond the allocation will subject customers to administrative citation and fines and potential surcharges directly on their water bill. Allocations are designed to avoid penalizing any customer who has undertaken conservation measures in the past for having saved water on an ongoing basis. Water use allocation variances will be granted on a case-by-case basis at the discretion of the Utilities Director.

<table>
<thead>
<tr>
<th>Customer Type</th>
<th>Water Shortage Stage(a)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Stage 5</td>
</tr>
<tr>
<td>Single-Family Residential Residential</td>
<td>48 GPCD + minimal landscape allotment (1,000 gallons per month)(b)</td>
</tr>
<tr>
<td></td>
<td>Stage 6</td>
</tr>
<tr>
<td></td>
<td>40 GPCD + no landscape allotment</td>
</tr>
<tr>
<td>Multi-Family Residential Residential</td>
<td>48 GPCD + minimal landscape allotment (1,000 gallons per month)(b, c)</td>
</tr>
<tr>
<td></td>
<td>Stage 6</td>
</tr>
<tr>
<td></td>
<td>40 GPCD + no landscape allotment</td>
</tr>
<tr>
<td>Commercial, Industrial, and Institutional</td>
<td>80 percent of baseline(d)</td>
</tr>
<tr>
<td></td>
<td>Stage 6</td>
</tr>
<tr>
<td></td>
<td>70 percent of baseline(d)</td>
</tr>
<tr>
<td>Dedicated Irrigation Account</td>
<td>50 percent of baseline(d)</td>
</tr>
<tr>
<td></td>
<td>Allotment only for mature trees and shrubs</td>
</tr>
</tbody>
</table>

(a) Maximum water use allocations begin in water shortage Stage 5. There are no maximum water use allocations for water shortage Stages 1, 2, 3, and 4.
(b) Average monthly landscape allotments per bimonthly billing period from May through October. A minimal landscape allotment is 2,000 gallons per bimonthly billing period.
(c) Landscape allotment provided if irrigation usage is not on a separate dedicated service.
(d) Baseline is defined as either the previous year’s usage or the most recent 12-month period with no water shortage restrictions in place.

### 4.3 Supply Augmentation and Other Actions

Chapter 6 of the City’s 2020 UWMP describes the City’s normal water supply portfolio, which includes local surface water and imported water through the SWP. In emergencies, the City can receive water via intertie connections with the cities of American Canyon, St. Helena, and Calistoga, and the Town of Yountville. In dry years, the City may participate in the DWR Dry Year Transfer Program or the Yuba Accord Dry Year Water Purchase Program to bolster supplies. Table 6 summarizes the City’s supply augmentation and other actions.
4.4 Operational Changes

The City can make several operational changes to address a water shortage, including increasing water waste patrols and decreasing line flushing and flow testing (e.g., for fire sprinkler design or training of firefighting personnel). While the City always seeks to reduce water losses, these actions will further those efforts during a shortage. These operational changes are included in Table 4, as they either directly or indirectly reduce demands. Capital improvement projects can also be delayed or accelerated as needed.

4.5 Emergency Response Plan

As stated in Section 3.0, the City’s water shortage stages outlined in Table 3 apply to both foreseeable and unforeseeable water supply shortage conditions. The latter includes catastrophic water shortage conditions, which are addressed in the City’s Emergency Response Plan (ERP). The ERP outlines preparation, response, and recovery procedures associated with unforeseeable incidents such as water supply contamination, earthquake, infrastructure failure, and other events. Concurrent with the preparation of this UWMP, the City is updating its ERP for compliance with the America’s Water Infrastructure Act. Due to the confidential nature of the ERP, the document is not included with this plan, but some key provisions are discussed below.

For significant disasters, the City uses the Standardized Emergency Management System (SEMS) to allow rapid and effective coordination in the field. For example, in a major earthquake event, all Water Division employees fall under the Utilities Department’s direction, the Operations section as defined by SEMS. The ERP includes these chain-of-command details for incidents, along with mutual aid agreements, emergency resources, emergency water supply calculations, and public notification procedures.

The South Napa Earthquake of August 24, 2014 provided a real-life exercise for the ERP. None of the three water treatment plants (WTPs) were significantly damaged or forced offline during that event, but main breaks caused customer outages.

The Water Division has developed a redundant system in the event of a disaster. The main points of this redundant system are:

1. The City has two major WTPs, each capable of producing 20 million gallons per day (MGD).
2. Each WTP has its own auxiliary power supply.
3. Each WTP has its own raw water source.
4. The two WTPs are more than 20 miles apart, which reduces the risk of a single event affecting both plants simultaneously.
5. Both WTPs were designed with redundant process components.

In the extremely unlikely event that the City loses all its water sources at once, the system’s tank storage of 33 million gallons can help the City respond to the emergency. The City’s best security in an extreme emergency may be the ability to deliver raw water to its customers from both Lake Hennessey and Milliken Reservoir. That allows the City to provide water for fire protection even if the pipelines have numerous leaks. The raw water would also be available for human consumption as long it was boiled or treated with iodine.

With some events, it could be necessary for the City to use an emergency supply source to maintain system pressure. The City has intertie connections with the cities of American Canyon, St. Helena, and Calistoga, and the Town of Yountville. The City of American Canyon can supply the City with approximately 4 MGD for a limited time.

Overall, the ERP points out the flexible design of the water system and the City's ability to minimize service disruptions in the worst of emergencies. For all conceivable emergencies, a specific plan is in place to rapidly restore water service, ensure water for firefighting, and minimize adverse impacts on public health and safety.

### 4.6 Seismic Risk Assessment and Mitigation Plan

CWC Section 10632.5(a) requires that UWMPs include a plan to assess and mitigate a water system’s seismic vulnerabilities. The City’s Hazard Mitigation Plan\(^1\) (City HMP, adopted in 2015 and currently being updated) meets this requirement because it addresses seismic risk. It is incorporated into this plan by reference. The City HMP was submitted to the Federal Emergency Management Agency (FEMA), which found it in conformance with Title 44 Code of Federal Regulations Part 201.6 Local Mitigation Plans.

While California experiences hundreds of earthquakes each year, most are below 3.0 on the Richter Scale (i.e., magnitude 3.0) and cause minimal damage. The United States Geological Survey (USGS) roughly defines strong earthquakes (which can cause moderate damage to structures) as measuring greater than 5.0 on the Richter Scale, while major earthquakes measure more than 7.0 on the Richter Scale. Generally, in California, strong earthquakes occur every two to three years, and major earthquakes occur once a decade.

The City is in a seismically active region. In August 2014, a 6.0 magnitude earthquake centered in South Napa caused significant damage throughout the region, including numerous water main breaks. The West Napa Fault runs along the western edge of the City, while the Rodgers Creek Fault and Green Valley/Concord Fault run through the County. A 2016 report\(^2\) by the USGS estimated the probabilities for magnitude-6.7 (or larger) earthquakes on major fault lines in the San Francisco Bay Area by the year 2043. The Rodgers Creek Fault

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   [https://pubs.usgs.gov/fs/2016/3020/fs20163020.pdf](https://pubs.usgs.gov/fs/2016/3020/fs20163020.pdf)
has a 33 percent chance of one or more earthquakes of magnitude-6.7 or larger by 2043, while the Green Valley/Concord Fault has a 16 percent chance of one or more such earthquakes in that timeframe.

The City HMP identifies risks posed by disasters (including earthquakes) and ways to minimize damage from those disasters. To promote an earthquake-safe community, the City HMP proposes two objectives: (1) continue requiring all new buildings and infrastructure to be designed and constructed to resist earthquake stresses; and (2) identify options, incentives, and funding sources for retrofitting seismically vulnerable structures. Each objective is associated with implementation actions, many of which the City is already implementing. The implementation actions relevant to the City’s water system include:

- Discourage locating facilities necessary for emergency services and major utility lines and facilities within areas subject to strong or violent ground shaking.
- Require that facilities necessary for emergency services be capable of withstanding a maximum credible earthquake from any of the seven known active faults in the region and remaining operational to provide emergency response.
- Design and install seismic-resistant transmission and distribution pipeline joints across known faults and on newly constructed bridges.
- Invest in automation and control features on asbestos cement transmission pipeline to protect against catastrophic failures.

To address the seismic vulnerabilities of its water system facilities, the City completed a Risk and Resilience Assessment (RRA) of its water system in December 2020. Completed in accordance with America’s Water Infrastructure Act, the RRA systematically evaluated the City’s assets, threats, and risks, as well as countermeasures that might be implemented to minimize overall risk to the system. To ensure the security of the City’s water system, the RRA is retained by the City as a confidential document.

5.0 COMMUNICATION PROTOCOLS

In the event of a water shortage, the City must inform its customers, the general public and interested parties, and local, regional, and state entities. Communication protocols for foreseeable and unforeseeable events are provided in this section. In any event, timely and effective communication must occur for appropriate response to the event. Key City staff communicate via radio or cell phones, and all City staff are provided email accounts to communicate internally and externally.

5.1 Communication for Foreseeable Events

A water shortage may be foreseeable when the City prepares its AWSDA, as described in Section 2.0. When the City determines the potential of a water shortage event, the City Council may declare a water shortage emergency.

If a water shortage emergency is anticipated, City staff will coordinate interdepartmentally, with the region’s water service providers, and with the County for the possible proclamation of a local emergency. If needed, City staff will communicate with the appropriate State agencies regarding the water shortage emergency.

In a duly noticed meeting, the City Council will receive a presentation of the current or predicted shortage as determined by the AWSDA. The City Council will determine if a water shortage emergency condition
exists and the degree of the emergency, while considering the shortage response actions triggered or anticipated to be triggered by the shortage level. As necessary, the City Council will act on the water shortage emergency declaration, associated water shortage stage, and shortage response actions.

If the City Council declares a water shortage emergency, the Community Relations & Media Manager (CRMM) and City staff will coordinate to communicate with its customers and the public to inform them about the declared water shortage emergency, water shortage level, and authorized water use restrictions. The City may use any combination of the following outreach formats: newspaper publications, mailers, bill stuffers, newsletters, social media, its website, local radio, public event appearances, mobile lighted message signs, and press releases.

5.2 Communication for Unforeseeable Events

A water shortage may occur during unforeseeable events such as earthquakes, fires, infrastructure failures, civil unrest, and other catastrophic events. The City’s ERP provides specific communication protocols and procedures to convey water shortage contingency planning actions during these events. The City may trigger any of these communication protocols at any water shortage stage, depending on the event.

In general, communications and notifications should proceed along the chain of command. Notification decisions will be made under the direction of the Director of Emergency Services, with external communications managed by the CRMM. The ERP provides a list of relevant contacts to notify at the local, regional, and state level.

The CRMM is the official spokesperson for the City and is responsible for establishing an information center and providing information for news media. In addition, the CRMM maintains a list of contacts to disseminate information to the public, typically via electronic media, radio, television, or newspapers.

6.0 COMPLIANCE AND ENFORCEMENT

After the City Council adopts a water shortage stage, customers will be notified as described in Section 5.0. NMC Chapters 13.10 and 13.12 include demand reduction actions and compliance and enforcement measures the City may implement when a water shortage is declared.

The Utilities Director is authorized to issue administrative citations for violations of demand reduction actions as noted in Table 4. After an initial educational warning, escalating fines of $100, $200, and $500 may be imposed for repeated violations. Exceptions to demand reduction actions may be requested in writing, with customer providing sufficient information, documentation, and verification, which establishes that the requested exception is necessary in order to: (1) protect the public health or safety, or (2) avoid undue hardship (including adverse economic impacts such as loss of production or jobs). The request shall also document that all feasible conservation measures are being used, and that there are no alternative available sources of water. The request shall be subject to the review and approval of the Utilities Director, whose decision will be final.

In very severe water shortages (i.e., Stages 5 and 6), customers are required to maintain water use within the allocations described in Section 4.2. Upon completion of each billing cycle, customers in violation will be notified via letter and are subject to the administrative citation process described above. They may also be subject to surcharges for the usage above their allocation that would be applied directly to their
Water Shortage Contingency Plan

water bill. Customers will receive prior notification of their standard allocation and will have the opportunity to request exceptions (e.g., change number of household occupants).

7.0 LEGAL AUTHORITIES

NMC Chapter 2.89 includes provisions to the preparation and implementation of plans in the event of local emergencies. NMC Chapters 13.10 and 13.12 support the City’s water shortage contingency actions. These chapters include provisions for declaring a water shortage emergency, determining customer use reductions, water use regulations and restrictions, and compliance and enforcement.

When a water shortage is determined, the City will coordinate with the region’s other water service providers and the County for the possible proclamation of a local emergency in accordance with California Government Code, California Emergency Services Act (Article 2, Section 8558).

In a duly noticed meeting, the City Council will determine whether a water shortage emergency condition exists and, if so, the degree of the emergency and what regulations and restrictions should be enforced in response to the shortage. The City shall declare a water shortage emergency in accordance with CWC Chapter 3 of Division 1.

California Water Code Division 1, Section 350
...The governing body of a distributor of a public water supply...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 water shortage emergency declaration triggers communication protocols described in Section 5.0 and compliance and enforcement actions described in Section 6.0.

8.0 FINANCIAL CONSEQUENCES OF WSCP

This section describes the financial impacts associated with implementing the WSCP and mitigation actions needed to address these impacts. During water shortages, revenue is expected to decrease due to reduced customer consumption. Some expenditures are also expected to decrease due to the decreased demand for water; however, implementing water conservation measures is anticipated to increase expenditures (e.g., for customer service activities and water waste patrols). To compensate for lost revenue and possible increase in expenditures, the City may need to use drought rates or financial reserves to maintain fiscal health. Both components are discussed in this section.

8.1 Drought Rate Structures and Surcharges

Current standard water rates are available on the City’s website. Standard rates consist of a fixed service charge based on meter size and a water quantity charge. For single-family residential customers, the water quantity charge is tiered, with higher rates charged for greater amount of water consumed. The City

3 https://www.cityofnapa.org/606/Rate-Schedules
reserves the right to change the water rate structure during a declared water shortage to more strongly encourage customers to reduce water use, to help cover water system costs, and to protect the financial stability of the water system as water demands are reduced.

In its next water rate study in 2022, the City will consider a drought rate structure. This drought rate structure would be adopted in adherence to Proposition 218 with required public hearings. As part of the water rate study, the City may consider a drought surcharge on each unit of water sold. Beginning with water shortage Stage 4, the drought surcharge would be applied to all customers with an escalating amount through Stages 5 and 6.

8.2 Use of Financial Reserves

As part of the Water Fund, the City maintains an Emergency Reserve, a Water Supply Reserve, and a Stabilization Reserve. In the event of a significant drop in revenue during a drought, these funds are available to maintain operations and potentially augment supplies to reduce the water shortage. To compensate for loss of revenue from reduced water sales and increased staffing for the water shortage response effort, the reserves may be employed in water shortage Stages 4 through 6.

9.0 MONITORING AND REPORTING

The City’s water system is fully metered, from its water supply sources to individual customer meters. Meters may be used as monitoring tools for compliance and reporting purposes. Production meters at the three WTPs provide a systemwide overview of water supply and demand.

In normal water supply conditions, production figures are recorded daily. Production totals are reported daily to the Water Treatment Facility Supervisor (Supervisor) and weekly to the Deputy Utilities Director. During a Stage 1, 2, or 3 water shortage, the Supervisor compares the weekly production to the target to verify that the demand reduction goal is being met. If reduction goals are not met, the Deputy Utilities Director will notify the City Council so that corrective action can be taken. The City Council receives monthly production reports during Stage 1, 2, or 3 water shortages. In Stage 4 and higher, the same procedure is followed, with the addition of a daily production report to the Deputy Utilities Director.

Customer meters are used to determine adherence to water allocations described in Section 4.2. This information will allow the City to adjust public outreach, enforcement, and other water shortage response actions as needed to meet available supplies.

The State Water Resources Control Board has adopted regulations for monthly reporting of water production and other uses, along with associated enforcement metrics. The City regularly records its water meter readings, along with enforcement actions, ensuring that the City is able to comply with these reporting requirements.

10.0 WSCP REFINEMENT PROCEDURES

This WSCP is an adaptive management plan. It is subject to refinements as needed to ensure that the City’s shortage response actions and mitigation strategies are effective and produce the desired results. Based on monitoring described in Section 9.0 and the need for compliance and enforcement actions
described in Section 6.0, the City may adjust its response actions and modify its WSCP. The City will also seek input from staff and the public regarding the effectiveness of its WSCP and ideas for improvements.

When a revised WSCP is proposed, the revised WSCP will undergo the process described in Section 12.0 for adoption by the City Council and distribution to the County and the general public.

11.0 SPECIAL WATER FEATURE DISTINCTION

The City distinguishes special water features, such as decorative fountains and ponds, from pools and spas. Special water features are regulated separately. Regulations under NMC Chapter 13.10 prohibit the use of potable water in non-recirculatory fountains or decorative water features, while NMC Chapter 13.12 prohibits using water for decorative fountains or to fill decorative lakes or ponds.

12.0 PLAN ADOPTION, SUBMITTAL, AND AVAILABILITY

This WSCP is adopted concurrently with the City’s 2020 UWMP, by separate resolution. Prior to adoption, a duly noticed public hearing was conducted. A copy of this WSCP will be submitted to DWR within 30 days of adoption.

No later than 30 days after submittal to DWR, copies of this WSCP will be available at the Utilities Department, 1700 Second Street, the City Clerk’s office, and at the Napa City-County Library. A copy will also be provided to the County. An electronic copy of this WSCP will also be available for public review and download on the City’s website.
Appendix K

UWMP and WSCP Adoption Resolutions
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RESOLUTION R2021-125

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF NAPA, STATE OF CALIFORNIA, AMENDING THE 2015 URBAN WATER MANAGEMENT PLAN TO MEET REQUIREMENTS OF THE SACRAMENTO-SAN JOAQUIN DELTA REFORM ACT OF 2009, AND DETERMINING THAT THE ACTIONS AUTHORIZED BY THIS RESOLUTION ARE EXEMPT FROM CEQA

WHEREAS, California’s Urban Water Management Planning Act requires urban water suppliers providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet annually to prepare an Urban Water Management Plan and submit a complete update to the State Department of Water Resources every five years; and

WHEREAS, the Sacramento-San Joaquin Delta Reform Act of 2009 (“Delta Reform Act”) requires agencies participating in a “covered action” in the Delta to demonstrate consistency with reduced reliance on the Delta and improved regional self-reliance (Delta Plan Policy WR P1); and

WHEREAS, as a State Water Project subcontractor receiving water via the North Bay Aqueduct, the City could potentially be involved in a “covered action” as defined in the Delta Reform Act; and

WHEREAS, amending the City’s 2015 Urban Water Management Plan originally adopted September 5, 2017, with a reduced reliance analysis is required to assure consistency with Delta Plan Policy WR P1; and

WHEREAS, the City has prepared a document labeled the “Demonstration of Reduced Delta Reliance” (which is set forth on Attachment 4 to the staff report to City Council for the meeting on December 21, 2021, accompanying this resolution), which is intended to amend the City’s 2015 Urban Water Management Plan, in compliance with Delta Plan Policy WR P1; and

WHEREAS, public notification of the completion and availability of this amendment to the 2015 Urban Water Management Plan was completed pursuant to California Government Code Section 6066; and

WHEREAS, a public hearing was held by the City Council on December 21, 2021 to receive public comments regarding the 2015 Urban Water Management Plan Amendment prior to approval of this resolution; and

WHEREAS, the City Council has considered all information related to this matter, as presented at the public meetings of the City Council identified herein, including any supporting reports by City Staff, and any information provided during public meetings.
NOW, THEREFORE, BE IT RESOLVED, by the City Council of the City of Napa, as follows:

1. The City Council hereby finds that the facts set forth in the recitals to this Resolution are true and correct, and establish the factual basis for the City Council's adoption of this Resolution.

2. The City Council hereby determines that the actions authorized by this Resolution are exempt from CEQA pursuant to California Water Code Section 10652, which exempts the preparation and adoption of urban water management plans from the requirements of CEQA.

3. The City Council hereby: (a) adopts the “Demonstration of Reduced Delta Reliance,” as defined in the recitals to this resolution, as an amendment to the 2015 Urban Water Management Plan of the City of Napa; and (b) authorizes and directs the Utilities Director to file the 2015 Urban Water Management Plan Amendment with the State Department of Water Resources and the California State Library.

4. This Resolution shall take effect immediately upon its adoption.

I HEREBY CERTIFY that the foregoing Resolution was duly adopted by the City Council of the City of Napa at a public meeting of said City Council held on the 21st day of December, 2021, by the following vote:

AYES: Narvaez, Painter, Alessio, Sedgley

NOES: None

ABSENT: Luros

ABSTAIN: None

ATTEST: Tiffany Carratiza
City Clerk

Approved as to form:

Michael W. Barrett
City Attorney
RESOLUTION R2021-126

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF NAPA, STATE OF CALIFORNIA, ADOPTING THE 2020 URBAN WATER MANAGEMENT PLAN, A SUMMARY OF CITY POLICIES AND PROCEDURES ADDRESSING WATER SUPPLY, DEMAND, AND CONSERVATION REQUIRED BY THE STATE DEPARTMENT OF WATER RESOURCES, AND DETERMINING THAT THE ACTIONS AUTHORIZED BY THIS RESOLUTION ARE EXEMPT FROM CEQA

WHEREAS, California's Urban Water Management Planning Act requires urban water suppliers providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet annually to prepare an Urban Water Management Plan and submit a complete update to the State Department of Water Resources every five years; and

WHEREAS, the City has prepared a document labeled the “2020 Urban Water Management Plan” (which is set forth on Attachment 5 to the staff report to City Council for the meeting on December 21, 2021, accompanying this resolution), which is intended to address all changes in the Urban Water Management Planning Act since 2015, including incorporation of a drought risk assessment, energy use information, and a lay description of the plan findings; and

WHEREAS, public notification of the completion and availability of the 2020 Urban Water Management Plan was completed pursuant to California Government Section 6066; and

WHEREAS, a public hearing was held by the City Council on December 21, 2021 to receive public comments regarding the 2020 Urban Water Management Plan prior to approval of this resolution; and

WHEREAS, the City Council has considered all information related to this matter, as presented at the public meetings of the City Council identified herein, including any supporting reports by City Staff, and any information provided during public meetings.

NOW, THEREFORE, BE IT RESOLVED, by the City Council of the City of Napa, as follows:

1. The City Council hereby finds that the facts set forth in the recitals to this Resolution are true and correct, and establish the factual basis for the City Council’s adoption of this Resolution.

2. The City Council hereby determines that the actions authorized by this Resolution are exempt from CEQA pursuant to California Water Code Section 10652,
which exempts the preparation and adoption of urban water management plans from the requirements of CEQA.

3. The City Council hereby adopts the 2020 Urban Water Management Plan of the City of Napa (as defined in the recitals to this resolution) and authorizes and directs the Utilities Director to file the 2020 Urban Water Management Plan with the State Department of Water Resources and the California State Library.

4. This Resolution shall take effect immediately upon its adoption.

I HEREBY CERTIFY that the foregoing Resolution was duly adopted by the City Council of the City of Napa at a public meeting of said City Council held on the 21st day of December, 2021, by the following vote:

AYES: Narvaez, Painter, Alessio, Sedgley

NOES: None

ABSENT: Luros

ABSTAIN: None

Approved as to form:

[Signature]
Michael W. Barrett
City Attorney
RESOLUTION R2021-127

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF NAPA, STATE OF CALIFORNIA, ADOPTING THE WATER SHORTAGE CONTINGENCY PLAN, A STRATEGIC PLAN FOR PREPARING FOR AND RESPONDING TO WATER SHORTAGES REQUIRED BY THE STATE DEPARTMENT OF WATER RESOURCES, AND DETERMINING THAT THE ACTIONS AUTHORIZED BY THIS RESOLUTION ARE EXEMPT FROM CEQA

WHEREAS, California’s Urban Water Management Planning Act requires urban water suppliers providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet annually to prepare an Urban Water Management Plan and submit a complete update to the State Department of Water Resources every five years; and

WHEREAS, the California Water Code requires urban water suppliers to prepare a Water Shortage Contingency Plan to be included in its Urban Water Management Plan; and

WHEREAS, the City has prepared a document labeled “City of Napa Water Shortage Contingency Plan” (which is set forth on Attachment 6 to the staff report to City Council for the meeting on December 21, 2021, accompanying this resolution, and which is also included as a part of the City’s Urban Water Management Plan), which is intended to reflect current operations, including the incorporation of six water shortage stages as required by the Department of Water Resources, and which revises the City’s previous water shortage contingency plan; and

WHEREAS, public notification of the completion and availability of the Water Shortage Contingency Plan was completed pursuant to California Government Code Section 6066; and

WHEREAS, a public hearing was held by the City Council on December 21, 2021 to receive public comments regarding the Water Shortage Contingency Plan prior to approval of this resolution; and

WHEREAS, the City Council has considered all information related to this matter, as presented at the public meetings of the City Council identified herein, including any supporting reports by City Staff, and any information provided during public meetings.

NOW, THEREFORE, BE IT RESOLVED, by the City Council of the City of Napa, as follows:
1. The City Council hereby finds that the facts set forth in the recitals to this Resolution are true and correct, and establish the factual basis for the City Council's adoption of this Resolution.

2. The City Council hereby determines that the actions authorized by this Resolution are exempt from CEQA pursuant to California Water Code Section 10652, which exempts the preparation and adoption of urban water management plans from the requirements of CEQA.

3. The City Council hereby adopts the City of Napa Water Shortage Contingency Plan (as defined in the recitals to this resolution) and authorizes and directs the Utilities Director to file the Water Shortage Contingency Plan with the State Department of Water Resources and the California State Library.

4. This Resolution shall take effect immediately upon its adoption.

I HEREBY CERTIFY that the foregoing Resolution was duly adopted by the City Council of the City of Napa at a public meeting of said City Council held on the 21st day of December, 2021, by the following vote:

AYES: Narvaez, Painter, Alessio, Sedgley

NOES: None

ABSENT: Luros

ABSTAIN: None

ATTEST: Tiffany Carranza
City Clerk

Approved as to form:

Michael W. Barrett
City Attorney