COUNCIL AGENDA: 06/15/21
FILE: 21-1396
ITEM: 6.1

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: HONORABLE MAYOR AND CITY COUNCIL

FROM: Kerrie Romanow

SUBJECT: SEE BELOW

DATE: June 1, 2021

Approved

Date **6/3/2021**

COUNCIL DISTRICT: 2, 4, 7, 8

SUBJECT: PUBLIC HEARING AND RESOLUTION APPROVING THE SAN JOSE MUNICIPAL WATER SYSTEM 2020 URBAN WATER MANAGEMENT PLAN AND WATER SHORTAGE CONTINGENCY PLAN

RECOMMENDATION

(a) Hold a public hearing to allow community input regarding the draft Water Shortage Contingency Plan prior to its adoption.

(b) Hold a public hearing to allow community input regarding the draft Urban Water Management Plan prior to its adoption.

(c) Adopt a resolution:
   (1) Approving the San Jose Municipal Water System 2020 Water Shortage Contingency Plan (WSCP);
   (2) Approving the Urban Water Management Plan (UWMP); and
   (3) Directing staff to file the plans with the California Department of Water Resources (DWR).

OUTCOME

The approval and adoption of the 2020 UWMP will allow the City's Municipal Water System (SJMWS) staff to submit the plans to the DWR, which will fulfill the requirements of the California Urban Water Management Plan Act (Water Code Sections 10610, *et seq.*). Additionally, it will enable the City to be to be eligible for a water management grant or loan administered by DWR, the State Water Resources Control Board, and/or the Delta Stewardship Council.

BACKGROUND

The Urban Water Management Planning Act (AB 797), enacted in 1983, requires all California urban water retailers supplying more than 3,000 acre-feet (AF) (1 AF = 325,000 gallons) per year or providing water to more than 3,000 customers to develop a UWMP. The UWMP is required to be updated every five years. The City filed its initial UWMP with the DWR in 1985 and filed updates every five years through 2015. The deadline to submit the 2020 UWMP to DWR is July 1, 2021. The draft 2020 UWMP incorporates provisions required under State law, including demonstration of compliance with the Water Conservation Bill of 2009 and Assembly Bill (AB) 1420 Water Demand Management Measures, which required the Municipal Water System to ensure 20% per capita water use reduction by 2020.

A WSCP is a detailed plan for how a water provider intends to respond to and address a water supply shortage. Components of a WSCP were last adopted as part of the 2015 UWMP. In response to the severe drought in California between 2012-2016, new legislation updated and revised WSCP requirements. Among the changes to WSCP requirements was that it be separated from the UWMP and become a standalone document. DWR recommends that it be adopted first, but for this memorandum it will be addressed after the UWMP.

ANALYSIS

Urban Water Management Plan

The 2020 UWMP (Attachment A) satisfies the requirements of AB 797 and discusses the following:

- Water sources, water supply outlook, and water use
- Reliability of water supply and actions to be taken to ensure a reliable water supply
- Compliance with established water use targets as required by the Water Conservation Bill of 2009
- Water conservation measures currently implemented and additional measures to implement in the event of water shortages.

The main objective of the updated UWMP is to address and analyze long-term water management planning. The UWMP evaluates the water supply available to San José Municipal Water System up to the year 2045 under normal and drought conditions and projects water demand based on expected new development. Water demand projections are based on growth as identified in the City's Envision San Jose 2040 General Plan. SJMWS relies upon the information relating to water supply availability and allocations provided by wholesalers and assumes the accuracy of the data for this UWMP.

San José Municipal Water System's water demands are projected to approximately double by 2045. Demands will be met from a combination of increased potable and recycled water supplies. Potable demands are met from several sources:

1. San Francisco Public Utilities Commission (SFPUC)
   Hetch Hetchy water is supplied to the North San Jose/Alviso area.

2. Valley Water
   Valley Water supplies treated surface water to the Evergreen area.

3. Groundwater
   Groundwater is available from existing wells throughout all of San José Municipal Water System's service areas.

Long-term planning and modeling analysis of all countywide supplies and demands performed by Valley Water as part of its draft 2020 UWMP indicates that future countywide demands can reliably be met under normal and dry year conditions. Valley Water's analysis is based on projected demands within the County, and the existing and planned supplies and projects as reflected in its Water Supply Master Plan. To help bridge any gap between supplies and demands during a multi-year drought, Valley Water would likely implement a combination of calls for countywide short-term water use reductions, use of reserves, and obtaining additional supplement supplies through transfers and/or exchanges. The actual mix of these options would be determined through Valley Water's annual operations planning process.

For decades, the SFPUC and its 26 Wholesale Customers, including San José, have been parties to a Water Supply Agreement (WSA) regarding the supplies from the SFPUC system. The cities of San José and Santa Clara are not permanent customers under the WSA, and supplies can be interrupted on 10-years notice. In 2018, the parties entered into an amended and restated WSA, which continued deadlines for an additional ten years. By 2028, the SFPUC will determine:

- Whether or not to make the cities of San José and Santa Clara permanent customers,
- Whether or not to supply the additional unmet supply needs, and
- Whether or not to increase the contractual supply obligations.

San José continues to coordinate regularly with SFPUC to support and offer assistance to help enable SFPUC to establish San José as a permanent customer.

In December 2018, the State Water Resources Control Board adopted amendments to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan Amendment) to establish water quality objectives to maintain the health of the Bay-Delta ecosystem. If the Bay-Delta Plan Amendment is implemented as currently planned, the SFPUC will be able to meet the projected water demands in normal years but would experience supply shortages in single dry years or multiple dry years occurring after 2022. Supplies available from SFPUC are projected to be reduced between 46% to 64% during dry years. Based on cumulative available water supplies, this represents a total SJMWS potable supply shortage between approximately 5-10% during a given multiple year drought, which will be managed utilizing the conservation measures detailed within SJMWS' WSCP.

Prior UWMPs documented historical customer water use and set an urban water use target of 163 gallons per person per day (GPCD) by 2015 and 145 GPCD by 2020, based on target use calculation methodologies set by DWR. The city met both established targets. Actual water

usage was calculated to be 126 GPCD in 2015 and 118 GPCD in 2020.

Water Shortage Contingency Plan

The Water Code requires retailers to prepare and adopt a separate WSCP (Attachment B) with conservation actions to be taken during water supply shortages. WSCPs must include restrictions to be enforced at water shortage levels ranging from less than 10 percent shortage in Stage 1 to greater than 50 percent shortage in Stage 6. The San José Municipal Code (Chapter 15.10) contains several water conservation measures based upon the levels of the water shortage emergency.

In response to the 2012-2016 drought, the DWR updated WSCP requirements. Updates in this WSCP include Annual Water Supply and Demand Assessment procedures, the standardization of water supply stages of action for the WSCP, and the quantification of how each contingency action affects supply and demand. No changes are required to the City's water conservation measures.

CONCLUSION

The UWMP summarizes projected water demands and available water supplies for the next 25 years. The WSCP outlines actions to be taken in the event of a water supply shortage. Approval of these plans will allow them to be filed with DWR in accordance with California Water Code requirements.

EVALUATION AND FOLLOW UP

The City will continue to work with Valley Water and SFPUC to ensure long-term water supply reliability and avoid water shortages. Staff will submit the adopted 2020 UWMP to DWR, the California State Library, and Santa Clara County within 30 days of adoption.

CLIMATE SMART SAN JOSE

The recommendation in this memo has no effect on Climate Smart San José energy, water, or mobility goals.

POLICY ALTERNATIVES

Alternative #1: Not adopt the resolution approving the 2020 UWMP.
Pros: None
Cons: Violation of AB 797.

Reasons for not recommending: Public water systems failing to prepare and adopt an updated UWMP will not be eligible for grant and loan funding administered by DWR, the State Water Resources Control Board, and/or the Delta Stewardship Council.

PUBLIC OUTREACH

Coordination during the planning process was maintained with local agencies, including Valley Water and SFPUC, as well as other local retailers sharing the same drinking water sources. Notifications were emailed to local governing agencies in March and April 2021, to inform them that the UWMP was being revised and to invite their participation in the process. Notice of the required UWMP and WSCP adoption hearings was published as required by law, was posted on the City Clerk's Council Agenda website, and Muni Water's website.

COORDINATION

This memo was coordinated with the City Attorney's Office and Department of Planning, Building, and Code Enforcement.

COMMISSION RECOMMENDATION/INPUT

No commission recommendation or input is associated with this action.

CEQA

Statutorily Exempt, File No. PP17-001, CEQA Guidelines Section 15262, Feasibility and Planning Studies. Not a Project, File No. PP17-009. Staff Reports, Assessments, Annual Reports, and Informational Memos that involve no approvals of any City action Water Code Section 10652 exempts the preparation and adoption of an UWMP and WSCP from CEQA.

/s/
KERRIE ROMANOW
Director, Environmental Services

For questions please contact Jeff Provenzano, Deputy Director, at (408) 277-3288.

Attachment A: Urban Water Management Plan (UWMP)
Attachment B: San Jose Municipal Water System 2020 Water Shortage Contingency Plan (WSCP)

ATTACHMENT A

DRAFT | JUNE 2021

CITY OF SAN JOSE

2020 URBAN WATER MANAGEMENT PLAN

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

PREPARED WITH ASSISTANCE FROM

Luhdorff & Scalmanini
Consulting Engineers

DRAFT - Contact the Office of the City Clerk at (408) 535-1260 or CityClerk@sanjoseca.gov for final document, or access online here: https://www.sanjoseca.gov/your-government/environment/water-utilities/drinking-water

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ABBREVIATIONS AND ACRONYMS

ABAG	Association of Bay Area Governments
Act	1983 California Urban Water Management Act
AF	acre-feet
AFY	acre-feet per year
BAIRWMP	Bay Area Integrated Regional Water Management Plan
BARDP	Bay Area Regional Desalination Project
BARR	Bay Area Regional Reliability Partnership
BAWSCA	Bay Area Water Supply and Conservation Agency
BMO	basin management objectives
BMP	best management practices
CIMIS	California Irrigation Management Information System
City	The City of San José
CSA	City Service Area
CUWCC	California Urban Water Conservation Council
CVP	Central Valley Project
CWC	California Water Code
CY	calendar year
DMM	Demand Management Measures
DWR	Department of Water Resources
ETo	evapotranspiration
FHRP	fish habitat restoration plan
FTE	Full time employee
ISA	Interim Supply Allocations
ISG	Individual Supply Guarantees
ISL	Interim Supply Limitation
IWIP	Integrated Water Infrastructure Program
LOS	Level of Service
MAF	million acre feet
MGD	million gallons per day
MOU	Memorandum of Understanding
NCDC	National Climatic Data Center
NSJ/Alviso	North San José/Alviso
RWS	Regional Water System
SBWR	South Bay Water Recycling
SCRWA	South County Regional Wastewater Authority
SFPUC	San Francisco Public Utilities Commission
SJMWS	San José Municipal Water System
SWP	State Water Project
SWRCB	State Water Resources Control Board

ABBREVIATIONS AND ACRONYMS

TDS	total dissolved solids
USDM	U.S. Drought Monitor
UWMP	Urban Water Management Plan
WMP	Water Master Plan
WRCC	Western Regional Climate Center
WSA	Water Supply Agreement between the City and County of San Francisco and Wholesale Customers in Alameda County, San Mateo County and Santa Clara County
WSAP	Water Shortage Allocation Plan
WSCP	Water Shortage Contingency Plan
WSIP	Water System Improvement Program
WUE	Water Use Efficiency
WTP	Water Treatment Plant
TAZ	Transportation Analysis Zone

DEFINITIONS

Chapter 2, Part 2.6, Division 6 of the California Water Code provides definitions for the construction of Urban Water Management Plans. Appendix A contains the full text of the Urban Water Management Planning Act.

CHAPTER 2. DEFINITIONS

10611. Unless the context otherwise requires, the definitions of this chapter govern the construction of this part.

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.

10612. "Customer" means a purchaser of water from a water supplier who uses the water for municipal purposes, including residential, commercial, governmental, and industrial uses.

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.

10614. "Person" means any individual, firm, association, organization, partnership, business, trust, corporation, company, public agency, or any agency of such an entity.

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.

10616. "Public agency" means any board, commission, county, city and county, city, regional agency, district, or other public entity.

10616.5. "Recycled water" means the reclamation and reuse of wastewater for beneficial use.

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

Executive Summary

The City of San José Municipal Water System (SJMWS) has prepared this 2020 Urban Water Management Plan (UWMP) update to comply with the legislative requirements of the UWMP Act and subsequent California Water Code requirements.

An UWMP is a water supply planning tool that evaluates the agency's water supply reliability in five-year increments over a 20-to-25-year planning horizon. Thus, the UWMP provides an assessment of projected water demands and water supplies. The following summary provides a simple description of the UWMP contents (Water Code § 10630.5.).

ES 1. Introduction

UWMPs are State-mandated water supply planning documents required by the Department of Water Resources (DWR) to be completed every five years by all urban water suppliers that have 3,000 or more service connections or supply 3,000 or more acre-feet of water per year (AFY). This UWMP meets the requirements of the DWR's *UWMP Guidebook 2020.*

ES 2. Plan Preparation

The SJMWS submitted its first SJMWS UWMP in 1985 in compliance with the California Water Code and submitted updates every five years including the last update for 2015. The SJMWS supplies water to four service areas within the City of San José (City) including: North San José/Alviso, Evergreen, Edenvale, and Coyote Valley. The SJMWS operates two permitted water systems and is required to prepare an UWMP as they provide water to over 3,000 service connections and supply more than 3,000 AFY.

To prepare for the 2020 UWMP update, the SJMWS coordinated with its two wholesale water suppliers, Valley Water and the San Francisco Public Utilities Commission (SFPUC), local agencies, and the general public.

ES 3. System Description

The City of San José is located in Santa Clara County, south of the San Francisco Bay. It was founded in 1777 and incorporated in 1850 and is the third largest city in California.

The SJMWS is one of three retail water suppliers in the City and only supplies water to a portion of the City. The SJMWS provides water to the four service areas listed in ES.2 above: North San José/Alviso, Evergreen, Edenvale, and Coyote Valley.

In 2020, the SJMWS provided water service to 26,094 metered connections with a population of over 130,000 which is approximately 12% of the City. The City estimated future population projections by an alternative method utilizing Transportation Analysis Zone (TAZ) boundaries rather than Census Tracts. The current and projected population for the SJMWS service area is shown in **Table ES-1.**

Table ES-1: Population – Current and Projected						
Population[1]	2020	2025	2030	2035	2040	2045
	132,644	150,368	168,092	194,983	217,685	222,661

Notes:
[1] Population is defined as the population served by SJMWS

The City's General Plan (Envision San José 2040) identified the addition of 120,000 dwelling units and 470,000 new jobs throughout the City limits. By 2045, within the SJMWS service area, jobs are projected to increase to 118,367 as shown in **Table ES-2**.

Table ES-2. Proposed Jobs within SJMWS						
Jobs	2020	2025	2030	2035	2040	2045
	90,001	94,006	95,626	100,473	111,355	118,367

ES 4. System Water Use

Actual water use for 2020 for the City is from the City's water meter readings and billing system, except for information on water loss. Billed water use is categorized by the City as: single-family, multi-family, commercial, industrial, institutional/governmental, and landscape irrigation. In 2020, water use for the SJMWS service area was 17,546 Acre-feet (AF) of potable water and 4,097 AF of recycled water.

For water demand projections through 2040, the City used the information from its 2015 UWMP which included information on water use, sorted by service area and user type, to identify use trends. That study included projected growth as included within the Envision San José 2040 General Plan. To be consistent with that General Plan, demands for the year 2040 are the same in this UWMP, except for an update to reflect a new conservation easement over a large portion of SJMWS' Coyote Valley area. The rate of demand growth between 2020 and 2045 was adjusted to match the growth rate of current population and jobs. By 2045, potable water use is projected to be 33,552 AF and recycled water use is projected to be 7,413.

Table ES-3 provides a summary of projected water use.

Table ES-3. Water Use – Projected						
	2020	2025	2030	2035	2040	2045
Potable Water	17,546	21,080	24,156	27,343	32,815	33,552
Recycled Water	4,097	4,776	5,456	6,279	7,368	7,413
TOTAL	21,643	25,856	29,612	33,622	40,183	40,965

ES 5. SB X7-7 Baselines and Targets

SB X7-7 required water agencies to reduce water use by 20% by 2020. In the 2010 UWMP, the SJMWS established an average baseline of 181 gallons per capita per day (gpcd). A 20% reduction of the baseline water use gave a target for 2020 of 145 gpcd. The SJMWS's actual 2020 water usage was 118 gpcd, which meets the 20% by 2020 target.

ES 6. System Supplies

Supply sources received by SJMWS are generally considered to be consistent sources, except during times of prolonged drought during which supplies would be decreased based on reduced availability of wholesale supplies. Water supply sources for each of the City's four service areas include a combination of groundwater, purchased water from its two wholesale water suppliers, Valley Water and San Francisco Public Utilities Commission (SFPUC) and recycled water. The water supply source for each service area includes:

- **North San José/Alviso** – SFPUC and groundwater
- **Evergeen** – Valley Water and groundwater
- **Edenvale** – groundwater
- **Coyote Valley** – groundwater

Each of the SJMWS supply sources is discussed below.

- **SFPUC** – the SFPUC has a Water Supply Agreement from 2009 with its wholesale customers, which was amended and restated in 2018. This supply is mostly from the Hetch Hetchy reservoir, with additional local surface water.
- **Valley Water** – The SJMWS purchases treated surface water from Valley Water (previously called the Santa Clara Valley Water District) under a treated water contract. This supply include water from the Sacramento-San Joaquin Delta, and local surface water.
- **Groundwater** – Groundwater provides about half of the County's water supply for potable use, through pumping by retail water agencies or individual well owners. Valley Water acts as the Groundwater Sustainability Agency for Santa Clara County and prepared an alternative plan to a groundwater sustainability plan in 2016 to meet the requirements of the Sustainable Groundwater Management Act of 2014.
- **Recycled Water** – The City of San José operates the South Bay Water Recycling (SBWR) system and distributes disinfected treated wastewater for non-drinking water uses.

The SJMWS is a member of the Bay Area Water Supply and Conservation Agency (BAWSCA) which represents the interests of the 26 agencies in Alameda, Santa Clara, and San Mateo counties that purchase water from SFPUC. BAWSCA provides regional water reliability planning and conservation programming for the benefit of its member agencies.

Projected water supplies for the SJMWS through 2045 are shown in Table ES-4.

Table ES-4: Water Supplies – Projected

Water Supply	Additional Detail on Water Supply	2025 Reasonably Available Volume	2030 Reasonably Available Volume	2035 Reasonably Available Volume	2040 Reasonably Available Volume	2045 Reasonably Available Volume
Purchased or Imported Water	Potable Water – Valley Water and SFPUC	21,080	24,156	27,343	32,815	33,552
Recycled Water	SBWR	4,776	5,456	6,279	7,368	7,413
	TOTAL	25,856	29,612	33,622	40,183	40,965

ES 7. Water Supply Reliability Assessment

Water wholesalers are facing various challenges associated with imported water supplies, such as operational challenges and climate change. Both Valley Water and SFPUC are addressing future supply planning and are making efforts to address these challenges.

- The supply of imported water from SFPUC is constrained by hydrology, infrastructure, and institutional parameters. In general, the SFPUC supply depends on reservoir storage for water reliability. During dry periods, imported water through SFPUC is allocated using a water shortage allocation plan. Climate change may affect the reliability of this resource.

- Valley Water supplies include groundwater, local surface water, and imported water, as well as recycled and purified water. Their sources may be vulnerable to climate change, hydrologic variability, infrastructure failure, regulatory actions, or invasive species. In general, the reservoirs are sized for annual operations, and it can be challenging to capture all the available water.

SJMWS is able to meet water demands within its service area in normal water years through 2045. However, during a single dry year or multiple dry years, the SJMWS would experience a supply shortage and would need to implement conservation measures identified in its Water Shortage Contingency Plan (WSCP). Based on total potable water supplies, SJMWS may experience supply shortages between approximately 5-10% during a drought.

The UWMP includes a discussion on drought risk assessment which shows a comparison of water supplies and demands for a drought beginning in 2021 and lasting for five consecutive years. The analysis shows that it is necessary to implement the WSCP response actions to reduce water demands to offset a water supply shortfall.

ES 8. Water Shortage Contingency Planning

The SJMWS adopted their WSCP in 2015 as part of the 2015 UWMP. The 2020 UWMP discusses the SJMWS's planned response to various water shortage stages. In periods of water shortage, the SJMWS has shortage response actions to decrease customer water demands including demand reduction actions, operational changes, and mandatory restrictions.

ES 9. Demand Management Measures

SJMWS partners with Valley Water to encourage water conservation in the SJMWS service areas and the rest of the county. Valley Water provides demand management resources for public outreach and landscape programs targeted to improve irrigation efficiency.

The City has required water conservation measures that are always in effect to prohibit waste. The City also utilizes additional demand management measures including: metering, public education and outreach, programs to assess and manage distribution system real loss, a water conservation program, rebates and retrofits, and residential water surveys.

1. INTRODUCTION

Background

The 1983 California Urban Water Management Act (Act), also referred to as Assembly Bill 797, requires all urban water suppliers who directly serve 3,000 or more customers or who provide 3,000 or more-acre feet of water per year to prepare an Urban Water Management Plan (UWMP) every 5 years and submit the UWMP to the California Department of Water Resources (DWR). The purpose of the Act is to ensure that water suppliers plan for the long-term conservation and efficient use of the State's limited urban water supplies. The City of San José (City) operates the San José Municipal Water System (SJMWS), a retail water supplier that provides water service within the City. The City submitted the first SJMWS UWMP in 1985 in compliance with the Act. The City prepared updates to the SJMWS UWMP in 1990, 1995, 2000, 2005, 2010 and 2015. The Act requires that the SJMWS UWMP be updated and submitted every five years on or before July 1, in years ending in six and one. For the 2020 UWMP update, each urban water supplier must submit its UWMP by July 1, 2021. This SJMWS UWMP is referred to as the 2020 UWMP to retain consistency with the five-year submittal cycle.

In 2009, State officials determined that for California to continue to have enough water to support its growing population, it needs to reduce the amount of water each person uses per day (Per Capita Daily Consumption). This reduction of urban per capita use, commonly called the 20x2020 plan, was codified through SBX 7-7 (Steinberg) in November 2009 with the goal of reducing California's urban per capita water use by 20% by December 31, 2020, with an interim goal of reducing urban per capita water use by 10% by December 31, 2015. Each urban water supplier is also required to meet SBX 7-7 goals by specifically identifying the Base Daily per Capita Water Use (Baseline GPCD), *2020 Urban Water Use Target, and Compliance Daily per Capita Water Use. These terms are defined in Appendix P: Calculating Baselines and Targets of DWR's UWMP 2020 Guidebook (Guidebook). The document can be found online at: https://water.ca.gov/Programs/Water-Use-And-Efficiency/Urban-Water-Use-Efficiency/Urban-Water-Management-Plans*.

In adopting SBX7-7, the Legislature found and declared, as follows:

Section 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.

(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.

(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.

Section 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.

(b) The management of urban water demands and efficient use of urban water supplies shall be a guiding criterion in public decisions.

(c) Urban water suppliers shall be required to develop water management plans to actively pursue the efficient use of available supplies.

Changes to the California Urban Water Management Planning Act

Major amendments made to the California Urban Water Management Plan Act (Water Code Sections 10610, *et seq*.) and obligations of urban retail water suppliers since preparation of the City's 2015 UWMP include the following:

- ***Five Consecutive Dry-Year Water Reliability Assessment:*** Water suppliers are required to analyze the reliability of its water supplies to meet its water use over an extended drought period lasting five consecutive years

- ***Drought Risk Assessment:*** Water suppliers must 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

- ***Seismic Risk:*** Water suppliers are required to specifically address seismic risk to various water system facilities and to have a mitigation plan

- ***Energy Use Information:*** Water suppliers are required to include readily obtainable information on estimated amounts of energy for their water supply uses

- ***Water Loss Reporting for Five Years:*** Water suppliers are required to include the past five years of water loss audit reports as part of their UWMP

- ***Water Shortage Contingency Plan (WSCP):*** Additional specific elements are now required to be included within each water supplier's WSCP

- ***Groundwater Supplies Coordination:*** In 2014, the Legislature enacted the Sustainable Groundwater Management Act to address groundwater conditions throughout California. Water suppliers' UWMPs are required to be consistent with Groundwater Sustainability Plans in areas where such plans have been completed by Groundwater Sustainability Agencies

- ***Lay Description:*** Water suppliers must include a lay description of the fundamental determinations of the UWMP, including key information regarding water supplies, water demands, water service reliability, and drought risk assessments.

The complete text of the Act is in Appendix A of the Department of Water Resources' *Urban Water Management Plan Guidebook 2020* (2020 Guidebook). Guidance for addressing the requirements of the Act is found in the Guidebook and Guidebook appendices. Retail water agencies are required to set targets and track progress toward decreasing daily per capita urban water use in their service area, which will assist the State in meeting its 20% reduction goal by 2020.

Urban Water Management Plans in Relation to Other Planning Efforts

This UWMP provides information on water management specific to the SJMWS service areas. However, water management happens in conjunction with other planning processes that integrate with the UWMP to accomplish urban planning. Some of these plans include: the City's General Plan (Envision San José 2040) (https://www.sanjoseca.gov/home/showpublisheddocument?id=22359), Santa Clara County's General Plan (https://www.sccgov.org/sites/dpd/OrdinancesCodes/GP/Pages/GP.aspx), Recycled Water Master Plan (http://www.sanjoseca.gov/DocumentCenter/View/40416), Integrated Regional Water Management Plan, Groundwater Management Plan (https://www.valleywater.org/your-water/where-your-water-comes-from/groundwater/sustainable-groundwater-management), and others. Each of these planning efforts is greatly enhanced when it relies upon the information found in the other documents. The City utilized other planning processes and documents when developing this UWMP and shared this UWMP with other agencies.

The 2020 UWMP must include water deliveries and uses; water supply sources; efficient water uses; and demand management measures, including the nature and extent of each water demand management measure implemented over the past five years and planned to be implemented to achieve its water use targets. The DWR has the responsibility for the review and certification process of the UWMP pursuant to the Act. A current UWMP is required to be eligible for water management grants or loans administered by DWR, the State Water Resources Control Board, or the Delta Stewardship Council.

This document presents the City's UWMP for SJMWS, the retail water supplier operated by the City. This UWMP examines SJMWS' current and projected water supplies, demands, and sources; details SJMWS' water shortage contingency plan; presents a comparison of the 20x2020 water use target; and discusses the City's conservation efforts. The UWMP documents the City's planning efforts involved in ensuring a reliable, high quality supply of water to the public.

2020 UWMP Organization

The 2020 UWMP (this document) is an update to the City's 2015 Plan. The 2020 UWMP includes new elements in accordance with DWR's 2020 Guidebook and new elements as required by law. This UWMP utilizes the organization outlined in the 2020 Guidebook. Tables provided by DWR for each section are also added into this plan.

Each section in this UWMP follows the 2020 Guidebook outline. Required elements from the Act and subsequent amendments are presented in italicized text in the beginning of each section/sub-section. A checklist of the required elements addressed in this UWMP is provided in Appendix B. The checklist has been numbered and those numbers are included at the beginning of each section in italicized text.

The requirements for Section 1 are a description of the supplier's UWMP per Water Code Sections 10615 and 10630.5 (items are from the 2020 Guidebook – Appendix F, UWMP checklist):

#1. A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses, reclamation and demand management activities. (*Water Code § 10615.)*

#2. 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. (Water Code § 10630.5.)

The required simple description is fully contained within the Executive Summary of this UWMP.

In response to the requirements of the Water Code, standardized tables provided by DWR for the reporting and submittal of UWMP data have been used and are included in Appendix C. Standardization of data tables allows for more efficient data management, expedited review of UWMPs by DWR, and easier compilation of data for regional and statewide planning.

2. PLAN PREPARATION

Water Code Sections 10620 and 10642 requires a description of the basis and approach for developing the UWMP (items are from the 2020 Guidebook: Appendix F, UWMP checklist):

#3. 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. 10620(b)

#4. 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. 10620(d)(2)

#5. 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. 10642

This section provides the basis and approach that the City used to update its UWMP. It also includes the data reporting periods (calendar vs. fiscal year) and units of measure used by the City to report water volumes. This section also includes the details of the coordination and outreach activities conducted by the City during the preparation of this UWMP.

Basis and Approach for Preparing the UWMP

As mentioned in Section 1, the City submitted the first SJMWS UWMP in 1985 and subsequently submitted updates to the SJMWS UWMP in 1990, 1995, 2000, 2005, 2010, and 2015. The California Water Code requires urban water suppliers with 3,000 or more service connections or supplying 3,000 or more AF of water per year are required to prepare an UWMP every five years. As an urban water supplier, the City is required to update and submit the 2020 SJMWS UWMP to DWR by July 1, 2021, as SJMWS served 26,094 municipal connections and supplied 17,546 AF in 2020 (**Table 2-1**).

Table 2-1. Public Water System

Public Water System Number	Public Water System Name	Number of Municipal Connections [1]	Volume of Water Supplied (AF)
CA4310019	City of San José – North San José/Alviso	2,203	4,767
CA4310020	City of San José – Evergreen/Edenvale/Coyote	23,891	12,779
	TOTAL	26,094	17,546

Notes:
1 Active potable connections as of July 2020

The City utilized DWR's Guidebook and Senate Bill X 7-7 (SB X 7-7) to prepare this UWMP. Per the SB X 7-7 requirements, each urban water supplier is required to meet its goals, which are discussed later in this UWMP. This UWMP includes projections of the future demands and supplies for SJMWS, based on estimates of future growth in its two service areas: North San José/Alviso (NSJ/Alviso) and Evergreen/Edenvale/Coyote Valley (EVG/EDV/COY). The UWMP also discusses the steps the City has taken to promote water conservation and to ensure water is being used wisely.

The City utilized planning documents that have been prepared over the years by the City and other entities to inform this UMWP. The results of those documents have been incorporated, as applicable, into this UWMP. The list of the documents is provided for reference in Section 11.

The adopted 2020 SJMWS UWMP will be made available for public review on the City of San José website (http://www.sanjoseca.gov/your-government/environment/water-utilities/drinking-water/muni-water-documents-reports). Copies of the UWMP will be submitted to DWR, cities and counties within the service area, the State Library, and other applicable institutions within 30 days after approval of the UWMP by the City Council.

The City prepared this UWMP with the assistance of its consultant, Luhdorff and Scalmanini, Consulting Engineers (LSCE), as well as additional support on some report content from Todd Groundwater, as permitted by Section 10620 (e) of the Water Code.

Level of Planning and Compliance

The City is a retail water agency, preparing an individual UWMP as mentioned in **Table 2-2**.

Table 2-2. Plan Identification

Select Only One	Type of Plan		Name of RUWMP or Regional Alliance
X	Individual UWMP		
		Water Supplier is also a member of a RUWMP	
		Water Supplier is also a member of a Regional Alliance	
	Regional Urban Water Management Plan (RUWMP)		

The City has reported its records of water use on a calendar year (CY) basis that runs from January 1 through December 31 (**Table 2-3**). In this document, projections of water demand and water supply over the course of a year are also reported on a calendar year basis.

Table 2-3. Supplier Identification	
Type of Supplier (select one or both)	
	Supplier is a wholesaler
X	Supplier is a retailer
Fiscal or Calendar Year (select one)	
X	UWMP Tables are in calendar years
	UWMP Tables are in fiscal years
Units of Measure Used in UWMP (select from drop down)	
Unit	Acre Feet (AF)

Agency Coordination and Outreach

Wholesale and Retail Coordination

The City has coordinated the preparation of the SJMWS UWMP with other appropriate agencies in the area, including its wholesalers, i.e., San Francisco Public Utilities Commission (SFPUC) and Valley Water (**Table 2-4**). Since the City relies upon the water supply from these wholesalers, the City has worked with the wholesalers and shared information for water supply and demand projections.

Table 2-4. 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.
Valley Water
San Francisco Public Utilities Commission

Coordination with Other Agencies and the Community

The City implemented two key elements - coordination and outreach - in developing this UWMP. The City initiated agency coordination with e-mailed notices to the two wholesale water agencies, SFPUC and Valley Water; water management agencies within and outside its service area including other retail water suppliers that contract with the wholesalers; the regional coordinator, Bay Area Water Supply and Conservation Agency (BAWSCA); the local wastewater agency; and the County of Santa Clara. The notifications informed these agencies of the City's intent and that the planning efforts were underway and welcomed any comments or other participation. Coordination with the wholesalers also included requested data for the preparation of the UWMP. Follow up with staff from the agencies was conducted. The goal of coordination was to encourage input and participation in its planning.

To maintain a level of plan consistency throughout the planning process and to collect relevant information from other agencies, the City attended and participated in meetings among other local retailers hosted by the wholesalers, Valley Water and SFPUC, and by BAWSCA. By consulting with the planning documents completed by the wholesalers and by BAWSCA, including water supply studies and the Groundwater Management Plan, the City is better able to plan for future water supplies and minimize the need to import water from other regions by creating a realistic, consistent source supply plan.

Notification to Agencies and Public

The City encouraged community participation in its urban water management planning efforts since the first plan was developed in 1985. Pursuant to the requirement in CWC Section 10642, the City notified the appropriate agencies that the 2020 UWMP was being reviewed and changes were being considered. The notification was sent 60 days prior to the UWMP public hearing. **Table 2-5** lists the agencies contacted during the preparation of this UWMP. Information was made available to the public in multiple locations in order to reach a broad audience. In addition to information published in the local newspaper and in the City Council Agenda, information was also made available on the City's website which includes a tool that allows users to translate website content into twelve languages.

For consistency in planning and reporting, the City coordinated and solicited input from other City departments and other agencies responsible for developing related reports or planning documents such as Master Plans, General Plans, and Groundwater Management Plan.

Table 2-5. Coordination with Notified Agencies				
Coordinating Agencies	Sent Notification	Participated in UWMP Development	Commented on the Draft	Was Contacted for Assistance
Wholesale Water Supplier				
Valley Water	x			x
San Francisco Public Utilities Commission	x			x
Other Coordination				
Alameda County Water District	x			
City of Hayward	x			
City of Milpitas	x			
City of Mountain View	x			
City of Palo Alto	x			
City of Sunnyvale	x			
Purissima Hills Water District	x			
City of Burlingame	x			
City of Daly City	x			
Town of Hillsborough	x			
City of Menlo Park	x			
City of Millbrae	x			
City of Redwood City	x			
City of San Bruno	x			
City of Santa Clara	x			
City of Brisbane/Guadalupe Valley Municipal Improvement District	x			
Stanford University	x			
Coastside County Water District	x			
Mid-Peninsula Water District	x			
Westborough Water District	x			
North Coast County Water District	x			
California Water Service Company - Los Altos District	x			
Great Oaks Water Company	x			
San Jose Water Company	x			

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Table 2-5. Coordination with Notified Agencies				
Coordinating Agencies	Sent Notification	Participated in UWMP Development	Commented on the Draft	Was Contacted for Assistance
City of East Palo Alto	x			
City of Gilroy	x			
City of Morgan Hill	x			
County of Santa Clara	x			
Bay Area Water Supply & Conservation Agency	x			x
San José/Santa Clara Regional Wastewater Facility				x
Estero Municipal Improvement District/City of Foster City	x			
General Public	x			

Plan Adoption

This 2020 UWMP was presented at a public hearing immediately prior to adoption by the City Council on the same day. Additional information on UWMP adoption is included within Section 10.

3. SYSTEM DESCRIPTION

Water Code Section 10631 (a) requires the UWMP include a detailed description of the City's service area. (items are from the 2020 Guidebook: Appendix F, UWMP checklist):

#6. Describe the service area of the supplier (10631(a)).

#7. (Describe the service area) climate (10631(a)).

#8. Provide population projections for 2025, 2030, 2035, 2040 and optionally 2045. (10631(a)).

#9. Describe other social, economic and demographic factors affecting the supplier's water management planning. (10631(a)).

#10. Indicate the current population of the service area. (10631(a)).

#11. Describe the land uses within the service area.

This section summarizes the City's water system service area and presents an analysis of available information on demographics, population growth projections, and climate data to provide a basis for estimating future water requirements.

Service Area General Description

History

The City was founded in 1777 and incorporated in 1850. The City consists of 179.2 square miles. It is the third largest city in California following Los Angeles and San Diego, and it is the 10th largest city in the US. It is located in Santa Clara County, south of the San Francisco Bay and is the center of a large and expanding metropolitan area commonly known as Silicon Valley. The City is bordered by the Santa Cruz Mountains on the west and the Diablo Mountain range on the east. The majority of the City lies in the bay flats with various hills subdividing the valley into smaller areas such as Almaden Valley, Blossom Valley, and Evergreen Valley.

As stated earlier in Section 1, SJMWS is one of the retail water suppliers in San José. SJMWS entered the water business in May 1961 with the purchase of the Evergreen Water Company. The Evergreen system served a 6,000-acre franchise area with several hundred customers. The City was concerned that a safe, adequate, and reliable supply of water be assured for new development within this and other areas newly annexed to the City. It was felt that the extension of City services and facilities to these newly annexed areas would greatly encourage their improvement and development. When the City of Alviso was annexed, SJMWS acquired the North San José and Alviso areas. The Edenvale service area was established in 1983, and the Coyote Valley service area was established in 1988.

Organization Structure

The City operates under the City Council/City Manager form of government, a system that combines the policy leadership of elected officials in the form of a City Council, with the managerial expertise of an appointed City Manager. The City Council is the legislative body that represents the community and is empowered by the City Charter to formulate citywide policy. The City Council is comprised of the Mayor, who is elected by the community at-large, and ten council members who are elected by districts. Under the City Charter, the Mayor is responsible for recommending policy, program, and budget priorities to the City Council, which in turn approves policy direction for the City. The City Charter limits the Mayor and Council members from serving more than two consecutive terms.

The City Manager is appointed by the City Council and serves as the chief administrative officer of the organization. The City Manager is responsible for administration of City affairs, day-to-day operations, and implementation of City Council policies.

The City is organized by City Service Areas (CSAs) that best reflect the way the organization delivers services to the residents. A CSA represents the policy-making level for strategic planning, policy setting, and investment decisions in the critical functions the City provides to the community. SJMWS operates under the CSA of Environmental and Utility Services.

Service Area Boundary and Land Use

SJMWS services four different areas of the city: North San José/Alviso, Evergreen, Edenvale, and Coyote Valley (**Figure 3-1**). The service area boundaries and land use for each service area is described below. As mentioned in Section 2, the City's service area is classified as two Public Water Systems:

- CA4310019 - consists of NSJ/Alviso area
- CA4310020 - consists of Evergreen/ Edenvale/ Coyote Valley (EVG/EDV/COY) areas

North San José/Alviso

The North San José/Alviso (NSJ/Alviso) Service Area consists of 5,600 acres and extends from Trimble Road on the south to the Alviso Slough on the north. The area is bordered on the west by the Guadalupe River and on the east by Coyote Creek. The land use is predominantly industrial, with some residential and commercial.

Evergreen

The Evergreen Service Area consists of approximately 10,750 acres and extends from Highway 101 on the west to the foothills of the Mount Diablo Range on the east. The area is bounded on the north by Tully Road and on the south by the City limits. The current land use in Evergreen is predominantly residential with some commercial.

Edenvale

The Edenvale Service Area consists of about 700 acres and the area is located east of Coyote Creek and south of Hellyer Avenue. Edenvale is zoned for industrial and commercial use.

Coyote Valley

The Coyote Valley Service Area consists of approximately 7,500 acres and the area is located west of Highway 101, south of Tulare Hill, and north of Palm Avenue. The area is currently largely undeveloped (not including 51% as permanent open space lands).

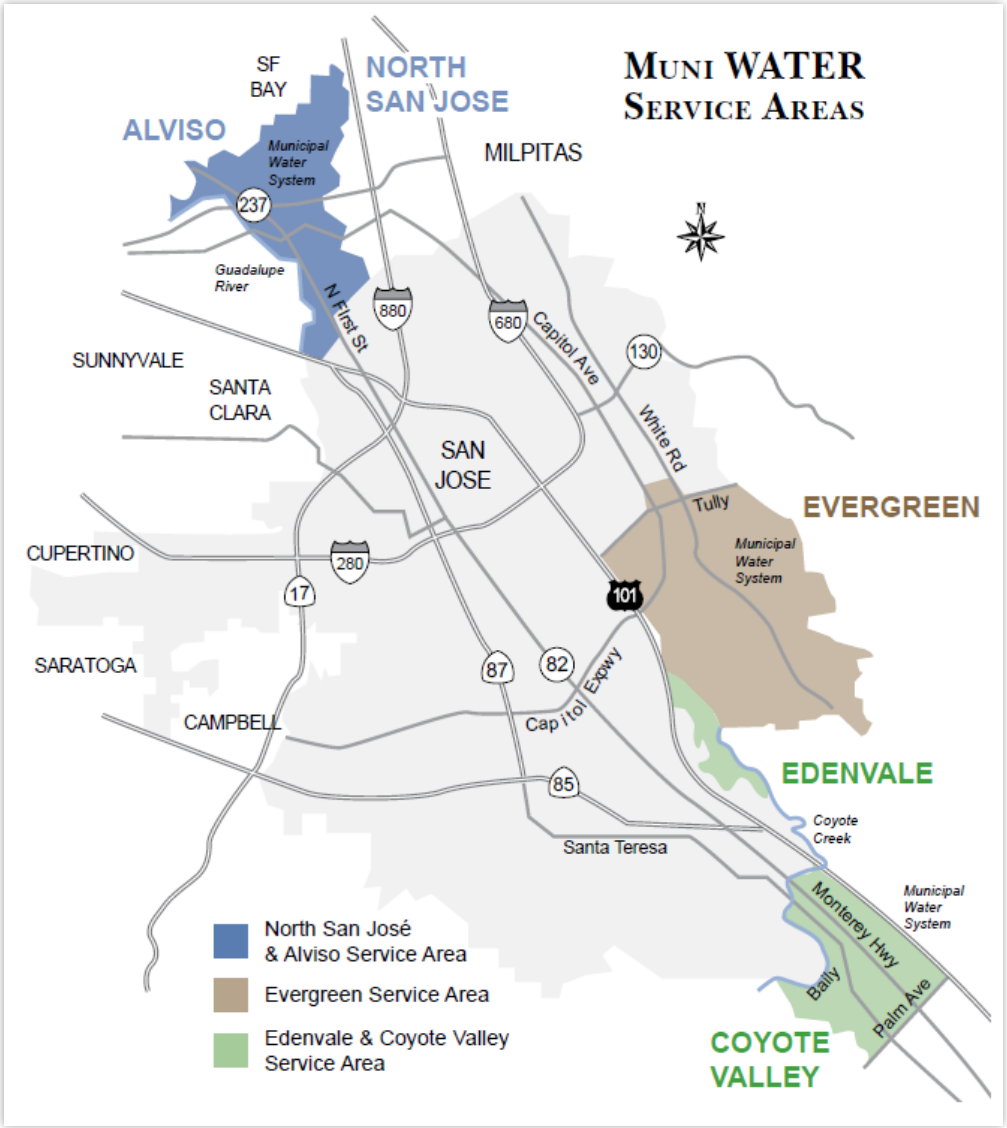

Figure 3-1 City of San José Municipal Water System Service Areas

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Service Area Climate

The City has a semiarid, Mediterranean climate, characterized by warm dry summers and cool winters. Irrigation water demand is often high in the dry summer months and in winter is partially fulfilled by rainfall. The City averages 300 days of sunshine annually, with temperatures varying from an average of 50 degrees Fahrenheit in January to an average of 70 degrees in July with a mean precipitation of 15.08 inches. In addition to seasonal variation, the area's climate is subject to periodic droughts that impact water supply. An extreme single-year drought occurred in 1976, when annual rainfall amounted to only 7.2 inches, or about one-half of the average rainfall. A severe, prolonged drought occurred in the late 1980s and early 1990s; over a four-year period, annual rainfall averaged only two-thirds of the annual average.

Recently, the area experienced a prolonged drought that lasted from 2012 to 2016. Water demands have been slowly rebounding since that drought. The City continues to promote efficient water use by encouraging residents and businesses to do their part to preserve the drinking water supply at all times. Water rules have remained in effect to promote efficient water use (http://www.sanjoseca.gov/your-government/environment/water-utilities/drinking-water/water-efficiency/water-use-rules-for-residents).

The Western Regional Climate Center (WRCC) web site (www.wrcc.dri.edu) maintained historical climate records for 123 years (1/1/1893 to 6/09/2016) for San José (Archived San José Station: http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca7821). **Table 3-1** presents the monthly average climate summary based on 123 years of historical data. The annual average minimum monthly temperature is approximately 48.9 degrees Fahrenheit while the annual average maximum monthly temperature is approximately 70.8 degrees Fahrenheit (**Figure 3-2). Figure 3-3** presents the monthly average precipitation based on 123 years of historical data (1/1/1893 to 1/09/2016). The rainy season is from November through April. Monthly precipitation during the winter months ranges from 1 to 3 inches. Annual total rainfall is about 14.6 inches. Low humidity occurs in the summer months from May through October. The moderately hot and dry weather during the summer months typically results in moderately high water demand.

Similar to the WRCC in the San José area, the California Irrigation Management Information System (CIMIS) (web site: https://cimis.water.ca.gov/Default.aspx; accessed on March 3, 2021) tracks and maintains records of evapotranspiration (ETo) for numerous weather stations located throughout the state. The monthly summary of ETo statistics used for this system are derived from the reference evapotranspiration zones map developed by DWR (https://cimis.water.ca.gov/App_Themes/images/etozonemap.jpg) ETo is a standard measurement of environmental parameters that affect the water use of plants. ETo is given in inches per day, month, or year and is an estimate of the ETo of a large field of well-watered, cool-season grass that is 4 to 7 inches tall. The monthly average ETo is presented in inches in **Table 3-1**. As the table indicates, a greater quantity of water evaporates from May through September, which may result in higher water demand than winter months.

Table 3-1. City of San José Monthly Average Climate Data				
Month	Standard Monthly Average ETo (inches)[1]	Average Total Rainfall[2] (inches)	Average Temperature (degrees Fahrenheit)[2]	
			Min	Max
January	1.24	2.88	40.9	58.1
February	1.68	2.69	43.5	61.9
March	3.41	2.31	45.2	65.4
April	4.80	1.20	46.9	69.5
May	6.20	0.44	50.5	74.2
June	6.90	0.10	53.8	79.0
July	7.44	0.02	56.1	81.8
August	6.51	0.07	56.2	81.3
September	5.10	0.19	55.2	80.4
October	3.41	0.76	51.3	74.3
November	1.80	1.50	45.3	65.2
December	0.93	2.41	41.5	58.5

Notes:
1 ETo Overview from https://cimis.water.ca.gov/App_Themes/images/etozonemap.jpg
2 Rainfall and temperature data from http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca7821 (Archived San José station)

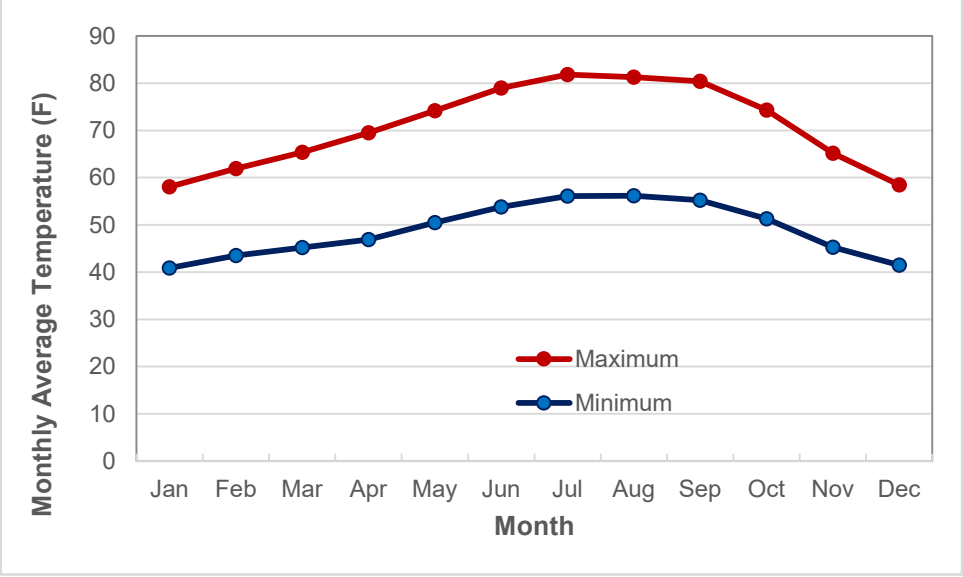

Figure 3-2. Maximum and Minimum Monthly Average Temperature in the City of San José based on Historical Data (1893-2016)

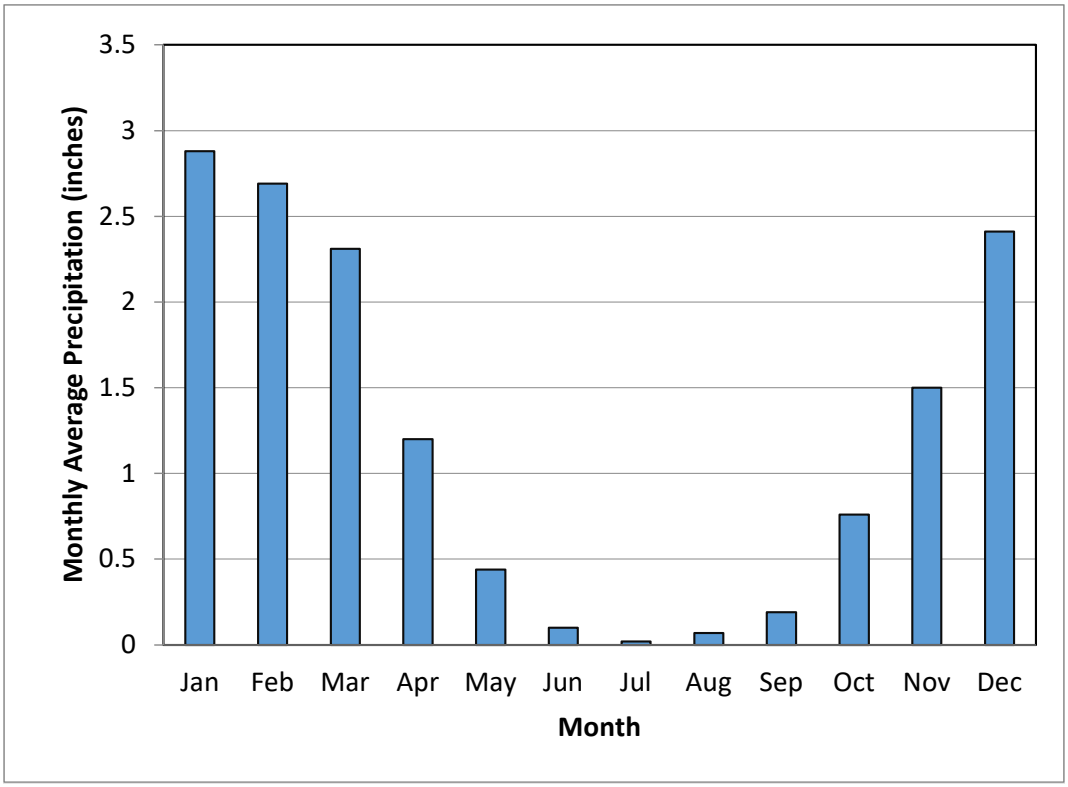

Figure 3-3. Monthly Average Precipitation in the City of San José (1893-2016)

Climate Change and Recent Drought Affecting Water Resources

In March 2016, the U.S. Drought Monitor (USDM) (https://droughtmonitor.unl.edu/Maps.aspx) classified the majority of California as being in extreme drought to exceptional drought (**Figure 3-4**). However, by March 2017, the USDM classified the majority of California as having no drought conditions (**Figure 3-5**). The trend reversed by December 2020, when the USDM classified the majority of California as being in severe drought to extreme drought **(Figure 3-6).**

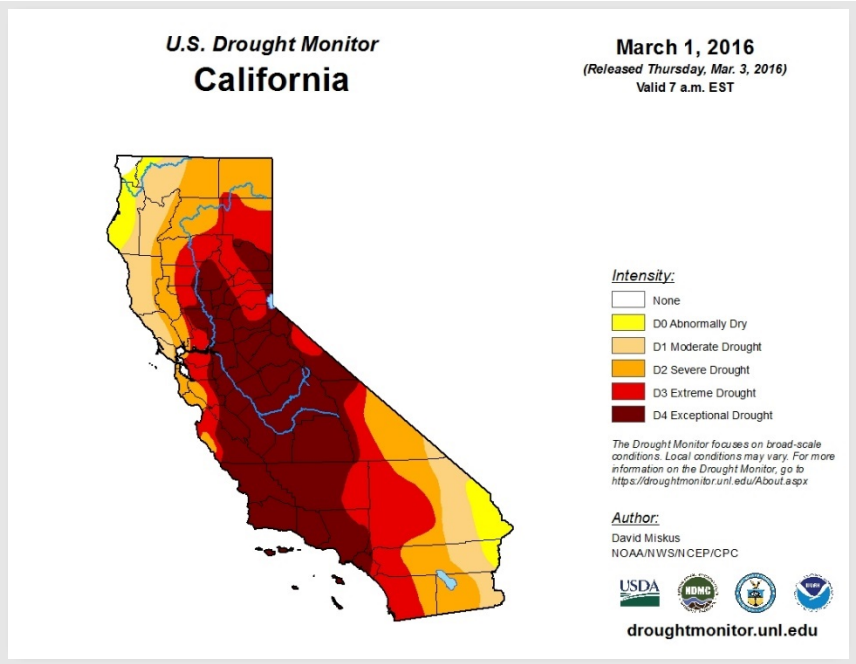

Figure 3-4. USDM drought map of California on March 1, 2016 (US Drought Monitor)

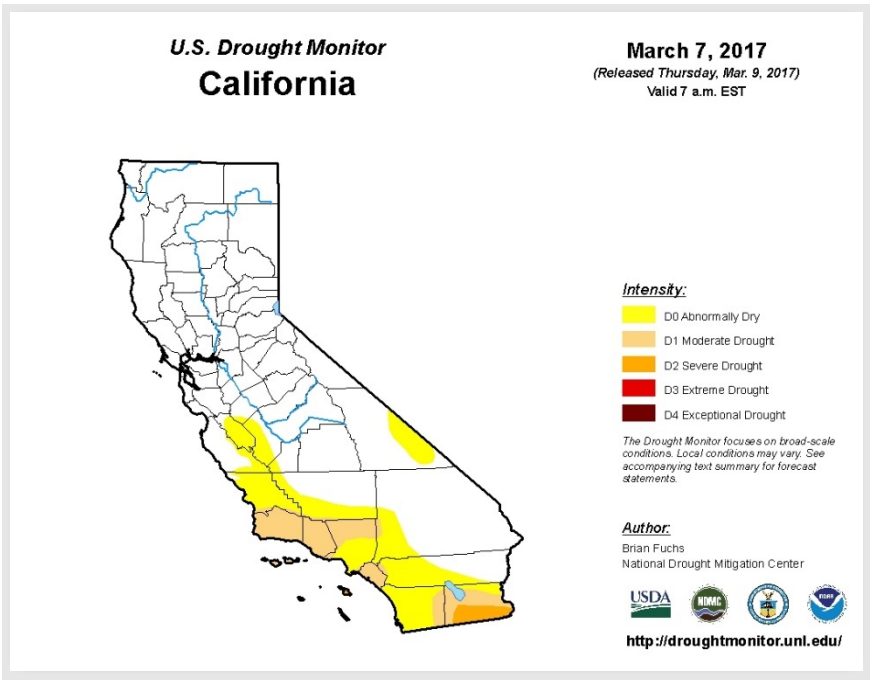

Figure 3-5 USDM drought map of California on March 7, 2017 (US Drought Monitor)

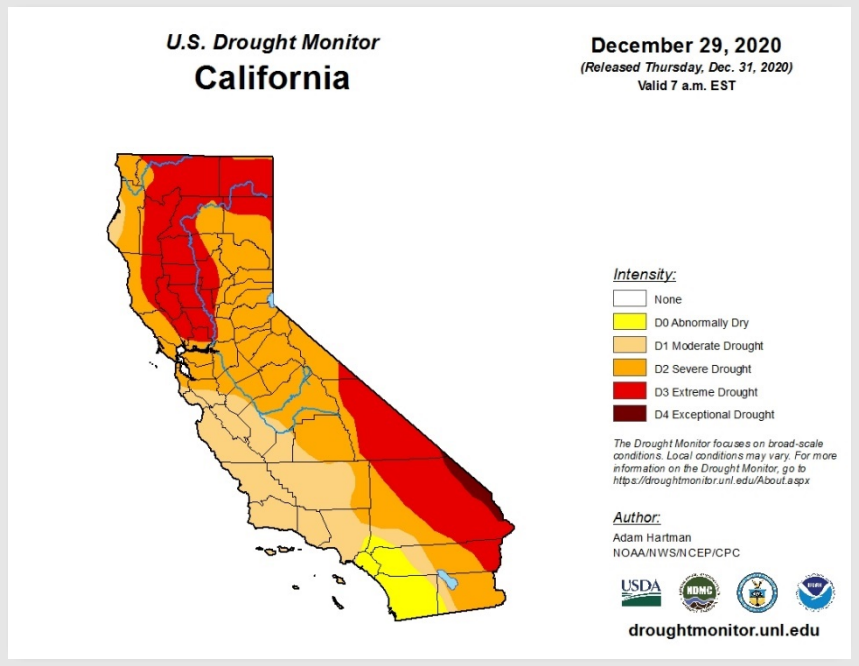

Figure 3-6 USDM drought map of California on December 29, 2020 (US Drought Monitor)

Reservoirs in California are largely fed by water from the mountains, especially the Sierra Nevada and southern Cascades which constitute more than 60% of California's water supply. As of December 31, 2020, 154 reservoirs in California held 18.0 million acre feet (MAF) of water, which was 82% of average and 47% of capacity (http://cdec.water.ca.gov/reportapp/javareports?name=STORAGEW.202012; accessed on March 15, 2021). The largest reservoir in California, Lake Shasta, was at around 2.31 MAF, which was 50% of capacity by the end of water year 2020 (https://www.usbr.gov/mp/cvo/reports.html; accessed on March 15, 2021).

The vast majority of water resources in the state are stored as snowpack and released into streams and reservoirs as spring snow melts. According to data obtained from the DWR (https://cdec.water.ca.gov/snowapp/sweq.action), the average December 31, 2020 statewide snowpack was 5.2-inch snow water equivalent or 51% of normal. On April 21, 2021, Governor Newsom declared a drought emergency in two California counties and on May 10, 2021, he expanded the emergency to 39 additional counties, for a total of 41 of the 58 counties. The emergency does not yet extend to Santa Clara County, but it is likely to do so. In anticipation of potentially worsening drought conditions, on April 27, 2021, Valley Water increased its call for voluntary water conservation to 25%.

The competing demand for water to meet agriculture, urban and environmental needs created significant challenges in managing the state's water supply, especially with respect to groundwater. In 2014, California Governor Jerry Brown signed the Sustainable Groundwater Management Act, a historical law to strengthen local management and monitoring of groundwater basins.

Service Area Population and Demographic

SJMWS currently provides water service to approximately 12% of the City or 130,000 residents, through 26,791 metered connections. Population growth in SJMWS service areas is expected to increase in the next 25 years by approximately 67%.

The City estimated the future population projections by an alternative method utilizing Transportation Analysis Zone (TAZ) boundaries instead of Census Tracts. This alternative method allows for collection of data that more closely reflects the boundaries of the water system. Current and future residential and commercial land use and development levels were identified based on aerial imagery and the City's General Plan zoning, and then percentages were identified of the proportion of each TAZ that is within the SJMWS service area. These TAZ percentages were then applied to population/job projections included within the Metropolitan Transportation Commission's Plan Bay Area 2040 report. This alternative method was approved by DWR staff through e-mail correspondence (July 2020). Population estimates can be updated in the future by applying the same percentages to future Plan Bay Area report data.

This alternative method was utilized since the City's service area boundaries do not coincide with Census tract boundaries, and there are many Census tracts that contain varying amounts of the service area. Proportioning out the Census tracts is difficult due to the overlap with different jurisdictional areas, including City land outside the City's service area, adjacent cities, and county land. Small changes in the percent of Census tract data used for estimating can lead to relatively large swings in total population estimates, particularly in one area of the City where significant development is planned.

The current and projected population for the SJMWS service area is shown in **Table 3-2**.

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

Population[1]	2020	2025	2030	2035	2040	2045
	132,644	150,368	168,092	194,983	217,685	222,661

Notes:
1 Population is defined as the population served by SJMWS

Demographics

According to the US census website (https://www.census.gov/quickfacts/fact/table/sanjosecitycalifornia/PST045219, accessed on March 3, 2021), San José has an average household size of 3.12 people and a median household income of approximately $109,593.

Residential developments along with commercial and industrial uses represent the predominant land uses in the City of San José. Per the US census website for the period between 2015 to 2019, about 56% of residential units were occupied by owners with a median housing unit value of $864,600.

According to the US census website for the period between 2010 and 2019, the estimated total population in households in the City of San José increased by 69,267 or equivalent to 7.3%. As of the time this report was written, the 2020 Census data has not been released.

San José is the capital of Silicon Valley, where many high-tech companies are located. The area is also one of the world's leading centers for medical treatment and research. As the Capital of Silicon Valley, San José is recognized regionally, nationally, and internationally for its leadership in business innovation. The city continues to be the distribution and food-processing center for the surrounding rich agricultural region, which produces seasonal fruits and grapes. More than 50 wineries grace the valley. San José has healthy retail, transportation, and tourism industries and is the primary center for real estate and industrial development in the area.

The General Plan identifies the addition of 120,000 dwelling units and 470,000 new jobs throughout the City limits. The City utilized the same TAZ methodology described above to project jobs through 2045 for the SJMWS service area. By 2045 within the SJMWS service area, jobs will increase to 118,367 as shown in **Table 3-3**.

Table 3-3. Projected Jobs within SJMWS Service Area

	2020	2025	2030	2035	2040	2045
Jobs	90,001	94,006	95,626	100,473	111,355	118,367

4. SYSTEM WATER USE

A detailed description of the system's water use is required by Water Code Section 10631 (a) (items are from the 2020 Guidebook: Appendix F, UWMP checklist):

#12. Quantify past, current, and projected water use, identifying the uses among water use sectors. 10631(d)(1).

#13. Retail suppliers shall provide data to show the distribution loss standards were met. 10631 (d)(3)(C).

#14. In projected water use, include estimates of water savings from adopted codes, plans, and other policies or laws. 10631(d)(4)(A).

#15. Provide citations of codes, standards, ordinances, or plans used to make water use projections. 10631(d)(4)(B).

#16. Report the distribution system water loss for each of the 5 years preceding the plan update. 10631(d)(3)(A).

#17. Include projected water use needed for lower income housing projected in the service area of the supplier. 10631.1(a).

#18. Demands under climate change considerations must be included as part of the drought risk assessment. 10635(b).

As part of the UWMP, California regulation requires water suppliers to quantify past and current water use and to project the total water demand for the water system, including calculations of its baseline (base daily per capita) water use and interim and urban water use targets. Projections of future water demand allow a water supplier to analyze if future water supplies are adequate, as well as help the agency when sizing and staging future water facilities to meet water use targets. Projected water use, combined with population projections, provide the basis for estimating future water requirements.

This section provides the City's current water use and water use projections through the year 2045. In this section, the terms "water use" and "water demand" are used interchangeably. Recycled water is addressed comprehensively in Section 6, but a summary of recycled water demands is also included in this section.

Potable Water Demand

Table 4-1 provides the historical (actual) water use data for the City for various water use categories (e.g., single-family, multi-family, industrial, institutional, and others) for 2020. There is no other water use for purposes such as saline water intrusion barrier or groundwater recharge in the City's system besides those reported in **Table 4-1**. Note that the City did not use any raw water for meeting demands in 2020. Only potable water was used for all water use categories. The categorical water demands in the following tables were prepared from the City's water meter readings and a new billing database, with the exception of data associated with losses in the City's system. Water losses were calculated by subtracting actual metered use from the volume of water supplied. The 2020 actual potable water use data is shown in **Table 4-1**. The City does not sell any water to other agencies.

The actual water use in 2020 was lower than the projected water use for 2020 in the 2015 UWMP, likely attributed to slow rebound following the drought that ended in 2014. SJMWS and its wholesalers implement robust water conservation programs. Valley Water estimates that as of 2020, approximately 75,000 AF has been conserved throughout the County from programs they implement (compared to a 1992 baseline). The impact to SJMWS can be estimated based on the portion of the overall population served. Valley Water serves 1.9 million people county-wide, and SJMWS serves 132,644 people, or approximately seven percent of the county. Assuming the water savings is proportional, SJMWS's water demand is reduced by approximately 5,000 AF (7 percent of the 75,000 AF county-wide total).

Table 4-1. Demands for Potable Water - Actual

Use Type	2020 Actual		
	Additional Description	Level of Treatment When Delivered	Volume[1]
Single Family		Drinking Water	7,920
Multi-Family		Drinking Water	2,694
Commercial		Drinking Water	1,040
Industrial		Drinking Water	1,837
Institutional/Governmental		Drinking Water	176
Landscape	Irrigation	Drinking Water	2,873
Losses[2]			1,006
		TOTAL	17,546

Notes:
1 Demand projections include water savings estimated to result from adopted codes, standards, and ordinances.
2 For current and future water demand projections, water losses are reflected as the difference between water supplied and water consumed (based on customer billing records) to reflect the overall mass balance of supplies compared to demands. These values may differ slightly from water losses as calculated in AWWA Water Loss Audits.

Historical and Projected Water Uses by Sector

For the water demand projections through 2040, the City used the information developed and included within its 2015 UWMP. The prior analysis included an assessment of metered water usage data, consolidated by service area and user type, to identify and quantify seasonal trends in the use of potable water for the four service areas of the SJMWS. This assessment included projected growth as included within the Envision San José 2040 General Plan. To remain consistent with that General Plan, the demands associated with the year 2040 remain unchanged in this UWMP, with the exception of an update to reflect a new conservation easement over a large portion of SJMWS' service area within the Coyote Valley. The rate of demand growth between 2020 and 2045 was adjusted to correspond with the rate of growth reflected in current population and job growth projections. Demand growth between 2040 and 2045 was calculated using methodology used and described in the Environmental Impact Report for the Envision San José 2040 General Plan 4-Year (https://www.sanjoseca.gov/home/showpublisheddocument?id=22023: Appendix D).

Projected water use in the SJMWS service area is summarized by type of customer use in **Table 4-2**. SJMWS supplies water to meet the demands of the population within its service areas and does not supply the demands of any other city, local agencies, or the environment. Population and land use are primary factors that affect urban water demand. Requests for new service connections were growing at about 750 service connections per year in 2000; between 2000 and 2004 the demand for service connections grew at about 500 service connections per year; followed by a decreasing trend in new service connections. Approximately 450 service connections have been added from 2015 to 2020.

It is assumed that water demands will grow at the same rate as population and jobs (to reach buildout population/jobs in the service areas in the SJMWS), so the same percentage growth identified for each of the 5-year intervals was used to interpolate the demand growth for each of the 5-year intervals between 2020 and 2040.

The projected potable water demand for SJMWS, as shown in **Table 4-2**, indicates that SJMWS anticipates significant growth in demand from 2020 to 2045. The increase in demand is attributable to the proposed development as identified within the Envision San José 2040 General Plan. Some demand reduction as a result of conservation is included within the projected demands, particularly within the residential sectors. This projected growth in demand reflects an anticipated recovery from decreased demand between 2005 and 2010 due to the economic downturn, and between 2010 and 2015 due to the drought.

Table 4-2. Use Projections for Potable Water					
Use Type	Projected Water Use				
	2025	2030	2035	2040	2045
Single Family	9,107	10,293	10,917	12,338	12,621
Multi-Family	2,932	3,171	3,463	3,763	3,849
Commercial	1,642	1,920	2,436	3,376	3,446
Industrial	2,562	3,197	4,086	5,546	5,665
Institutional/Governmental	208	239	286	356	365
Landscape (irrigation)	3,401	3,930	4,586	5,584	5,712
Losses	1,228	1,406	1,569	1,852	1,894
TOTAL	21,080	24,156	27,343	32,815	33,552

Note: Demand projections include water savings estimated to result from adopted codes, standards, and ordinances.

SJMWS estimates the projected water loss (specifically, unaccounted-for water loss) to be approximately 5.8% of the projected water use. Water conservation practices implemented in recent years due to the drought that ended in 2014 have remained in place.

Total Water Demands

Table 4-3 presents the total water demands for the SJMWS. These water demands are calculated based on the summary of data presented in **Tables 4-1, 4-2 and 6-4**. **Table 6-4** discusses recycled water demands, which are further detailed in Section 6.

Table 4-3. Total Gross Water Use (Potable and Recycled)						
	2020	2025	2030	2035	2040	2045
Potable Water	17,546	21,080	24,156	27,343	32,815	33,552
Recycled Water	4,097	4,776	5,456	6,279	7,368	7,413
TOTAL	21,643	25,856	29,612	33,622	40,183	40,965

Distribution System Water Losses

Water losses include “real losses” and unaccounted-for water loss. Real water losses are physical water losses from the water distribution system and storage facilities, up to the points of delivery to customers. Unaccounted-for water is defined as the difference between annual supply production and annual sales. Included in the unaccounted-for water are system losses (due to leaks, unauthorized consumption,

reservoir overflows, or inaccurate meters) and water used in system operations. Water lost during conveyance as well as unaccounted-for water must be incorporated when projecting total water demand.

As required by DWR, SJMWS used the most recent 12-months of data to calculate the unaccounted-for water losses using the American Water Works Association tool. Water audits for the past five years are shown in **Table 4-4**. Copies of the SJMWS' Water Loss Audit reports for the past four years are provided in **Appendix E** (excluding draft audit for the reporting period starting 01/2020). Note that water losses in **Appendix E** are reported in million gallons per year and water losses in **Table 4-4** are reported in Acre-Feet per year. The water loss shown in **Table 4-4** differs from losses reported in **Tables 4-1** and **4-2** due to different methodologies.

Table 4-4. 12 Month Water Loss Audit Reporting

Reporting Period Start Date	Volume of Water Loss[1]
01/2016	2,244
01/2017	774
01/2018	925
01/2019	1,285
01/2020[2]	970

Notes:
1 Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet.
2 Estimated water loss for the reporting period starting 01/2020, based on a draft, un-validated Water Loss Audit

The State is developing water loss performance standards which would propose that the City would need to maintain water losses to less than 23 gallons per connection per day, which is less than its 2017-2019 baseline period of 38 gallons per connection per day based on submitted water audit reports to the SWRCB. When the SWRCB adopts a final water loss performance standard, the City will track compliance progress based on the results of annual water audit data and water system management measures to ensure compliance with the City's water loss performance standard target. The State's preliminary water loss targets can be found here: https://www.waterboards.ca.gov/water_issues/programs/conservation_portal/docs/waterlosscontrol/2020/proposed_water_loss_standards_1dec2020.pdf.

To reduce water losses, the City continues to implement the following actions:

- Continue to promptly repair identified water system leaks.
- Monitor water consumption versus production so that potential water loss can be identified.
- Calibrate water meters periodically.
- Replace less accurate water meters.

Future Water Savings

The City's water savings plan includes the implementation of codes, ordinances, and land use plans, as presented in Section 8, to reduce overall water use. **Table 4-5** presents information on future water saving factors that have been included in water use projections.

Table 4-5. Inclusion in Water Use Projections	
Are Future Water Savings Included in Projections?	Yes
If "Yes" to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, etc. utilized in demand projections are found.	1
Are Lower Income Residential Demands Included in Projections?	Yes

Notes:
1 Refer to San José Municipal Code Chapter 15.10 and 15.11 (Appendix F)

Water Use for Lower Income Households

The City included water use for lower income households in projected water demands based on single-family and multi-family household estimates (**Table 4-3**). Note that a lower income household has an income below 80% of area median income, adjusted for family size. Per City's estimate, about 3% of total demands are attributable to use at low-income housing.

Climate Change

The effect of climate change on the City's water portfolio is described in Section 3 of the UWMP. Water resources in California are vulnerable to climate change impacts stemming from a modified hydrology that affects the frequency, intensity, and duration of extreme events, which, in turn, affect water quantity, quality, and infrastructure.

As climate change continues to impact the State's water resources, the City is continuously reviewing and updating new strategies and reevaluating existing policies, regulations, facilities, and funding priorities to mitigate the effects of climate change on water resources. Some of the mitigation and adaptation strategies under consideration include:

- Promoting recycled water use.
- Developing long-term plans that utilize climate change adaptation elements.
- Making use of groundwater resources.
- Promoting water use efficiency for urban, agricultural, commercial, and industrial water users.
- Increasing investments in infrastructure that promote adaptation strategies and mitigate the loss of existing supplies that are susceptible to climate change impacts.

5. SB X7-7 BASELINES, TARGETS AND 2020 COMPLIANCE

With the adoption of the Water Conservation Act of 2009, also known as SB X7-7, the State is required to set a goal of reducing urban water use by 20% by the year 2020. The Water Conservation Act requires that each retail urban water supplier must determine its baseline water use during its baseline period and water use target 2020, in order to achieve a statewide 20% reduction target. In this UWMP, water agencies must demonstrate compliance with their 2020 target.

Water Code requires that an evaluation of baseline (daily per capita) water use and 2020 urban water use target be performed for the City of San José's SJMWS. Water Code Section 10608 requires the following (items are from the 2020 Guidebook: Appendix F, UWMP checklist):

#19. 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. 10608.20(e).

#20. Retail suppliers shall meet their water use target by December 31, 2020. 10608.24(a).

#21. 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. 10608.24(d)(2).

#22. Retail suppliers' per capita daily water use reduction shall be no less than 5% of base daily per capita water use of the 5-year baseline. This does not apply if the supplier's base GPCD is at or below 100. 10608.22.

#23. Retail suppliers shall report on their progress in meeting their water use targets. The data shall be reported using a standardized form in the SBX7-7 2020 Compliance Form. 10608.4.

This section provides the City's calculation for the urban water use targets. The 2020 UWMP uses the 2020 urban water use target calculated in the 2015 UWMP without update. The 2015 UWMP utilized population estimates for the historic time period using the DWR population tool. Using this historic population data, the water use targets were established and are presented in this section. Projections of future water demand allow a water supplier to analyze if future water supplies are adequate, as well as help the agency plan future water facilities to meet water use targets. Projected water use, combined with population projections, provide the basis for estimating future water requirements.

Baseline and Targets

This section presents an analysis of historical water use data to establish the baseline, the 2020 water use target and compliance with the 2020 target. The City utilized the same baseline and targets established in the 2015 SJMWS UWMP.

Baseline Water Use

Baseline and target water use values were reported in the 2015 UWMP. As described in the 2015 UWMP, data from the 2000 Census was used for calculating SJMWS's year 2000 service area population. The City calculated the baseline population using 2000 and 2010 Census data. The City calculated its baseline water use in Gallons per Capita per Day (GPCD) and an urban water use target for 2020. The 2020 target is based on a 20% reduction from the base per capita water use. The baseline and target were developed based on past water use for the SJMWS.

In accordance with the Water Conservation Act, water suppliers must define a 10- or 15-year water use period for use as the basis for calculating the base daily per capita water use in GPCD. This value serves as the baseline for computing future water use target reductions. A 5-year base period is used to calculate the minimum water use reduction requirement.

For retailers that use recycled water, there is an option to use a base period of up to 15 years. The baseline determination is dependent on recycled water use during 2008 as a percentage of total retail water delivery. If the amount of recycled water delivered in 2008 is 10% or greater, the first baseline period is a continuous 10- to 15-year period. While the City is eligible for the 15-year period based on its 2008 recycled water use, connection data (and therefore population estimates) are not available for the earlier years. Based on the limited data, the City opted to use a 10-year base period.

Table 5-1 presents a summary of base period ranges for the SJMWS. The table also provides information on 2008 water deliveries. The 10-year baseline period used for estimating a GPCD value began on January 1, 1997 and ended on December 31, 2006. A 5-year base period starting from January 1, 2003, through December 31, 2007, was used to determine a minimum required reduction in water use by 2020.

Table 5-1. (SB X7-7 Table-1): Baseline Period Ranges

Baseline	Parameter	Value	Units
10- to 15-year baseline period	2008 total water deliveries	22,286	Acre Feet
	2008 total volume of delivered recycled water	4,253	Acre Feet
	2008 recycled water as a percent of total deliveries	19	Percent
	Number of years in baseline period	10	Years
	Year beginning baseline period range	1997	
	Year ending baseline period range	2006	
5-year baseline period	Number of years in baseline period	5	Years
	Year beginning baseline period range	2003	
	Year ending baseline period range	2007	

Population Estimates

In the 2015 UWMP, the City utilized DWR's population tool for calculating historical population for the non-census years using the 2000 and 2010 census data and electronic maps of the City's service areas. The tool used the number of service area connections to calculate the population for the non-census years. Total service connections data were used for calculating the persons per connection.

Utilizing the population data for the 1990, 2000, and 2010 census years and number of connections, the tool estimated the persons per connection for the non-census years. The City has data on the number of connections for the baseline years which was used by the tool to calculate the population in **Table 5-2**.

Table 5-2. (SB X7-7 Table 5): Gallons Per Capita Per Day (GPCD)

Baseline Year (From SBX7-7 Table 3)		Service Area Population (From SBX7-7 Table 3)	Annual Gross Water Use (From SBX7-7 Table 4)	Daily Per Capita Water Use (GPCD)
10 to 15 Year Baseline GPCD				
Year 1	1997	85,967	18,853	196
Year 2	1998	88,290	17,176	174
Year 3	1999	94,642	19,013	179
Year 4	2000	97,840	20,153	184
Year 5	2001	100,714	20,691	183
Year 6	2002	103,442	20,927	181
Year 7	2003	105,346	21,351	181
Year 8	2004	107,516	22,429	186
Year 9	2005	109,949	21,117	171
Year 10	2006	110,896	21,686	175
10-15 Year Average Baseline GPCD				181
5 Year Baseline GPCD				
Year 1	2003	105,346	21,351	181
Year 2	2004	107,516	22,429	186
Year 3	2005	109,949	21,117	171
Year 4	2006	110,896	21,686	175
Year 5	2007	111,277	22,731	182
5 Year Average Baseline GPCD				179

Gross Water Use

The City's gross water use, which is a measure of water that entered the distribution system in a calendar year basis, is presented in **Table 5-2**. Recycled water use has been excluded from the gross water use. No adjustments for changes in distribution system storage and deliveries to other water suppliers that pass through the distribution system were needed. No water was delivered through the City's distribution system for these two purposes and therefore no adjustment for these uses were made.

Water Use Target Methodology

In the 2015 UWMP, the City of San José adopted Method 1 (20% reduction of baseline daily per capita use) to set its 2020 water use target for the SJMWS. This method uses 80% of the SJMWS baseline per capita water use to calculate the 2020 water use target.

Table 5-2 lists the historic population and per capita water use for the 10-year base period (1997 to 2006). The base per capita water use estimate (as an average over the 10 base years) is 181 GPCD. The 2020 target based on Method 1 is 0.8 x 181 GPCD = 145 GPCD.

Table 5-2 also presents historic population as well as gross and per capita water use for the 5-year period (2003 to 2007). The average base per capita water use estimated for the 5 base years is 179 GPCD. That data was used to determine whether the 2020 per capita water use target meets the legislation's minimum water reduction requirement per Section 10688.22.

Minimum Water Use Reduction Requirements

Since the 5-year baseline per capita water use is greater than 100 GPCD [per Section 10608.12 (b)(3)], the following calculations are used to determine whether the 2020 per capita water use target meets the legislation's minimum water use reduction requirement per Section 10608.22 for the SJMWS. Those calculations entail the following steps:

1. Calculated base daily per capita water use of 179 GPCD using a continuous 5-year period ending in December 31, 2007, as presented in **Table 5-2**.

2. Multiply the 179-GPCD value by 0.95. The resulting value is 170 GPCD. This is the maximum allowable GPCD target in 2020.

3. The 2020 target under Method 1 is 0.8 x 181 = 145 GPCD.

4. Because the Method 1 target of 145 GPCD is less than 170 GPCD, no further adjustment to the 2020 target is required.

5. The 2020 target is 145 GPCD.

Baseline and Target Summary

Table 5-3 summarizes the baseline water use, and the water use target.

Table 5-3. (DWR Table 5-1): Baselines and Targets Summary				
Baseline Period	Start Year	End Year	Average Baseline GPCD*	Confirmed 2020 Target*
10-15 year	1997	2006	181	145
5 Year	2003	2007	179	145
*Values are in Gallons per Capita per Day (GPCD)				

Actual water use for the SJMWS on a calendar year basis was calculated to determine whether SJMWS met its per capita 2020 water use target. **Table 5-4** demonstrates the SJMWS compliance with the 2020 water use target. Note that no adjustment to the compliance GPCD value was incorporated.

The City is currently using a revised population calculation method as detailed in Section 3 for calculation of the actual 2020 GPCD, which is different than the methodology that was used to calculate the baseline and target; however, the City would still be in compliance with the 2020 target if the 2020 population as calculated in the 2015 UWMP were used in the compliance calculation. Revised populations calculated with the new method are only available as far back as 2015, so the City is unable to re-calculate baseline and target.

The SB X7-7 Compliance Form is included as **Appendix G** and demonstrates the City's compliance with the Water Conservation Act of 2009.

Table 5-4. (DWR Table 5-2): 2020 Compliance				
Actual 2020 GPCD*	2020 TOTAL Adjustments*	Adjusted 2020 GPCD*	2020 Confirmed Target GPCD*	Did Supplier Achieve Targeted Reduction for 2020? Y/N
118	0	118	145	Yes
*Values are in Gallons per Capita per Day (GPCD)				

6. WATER SUPPLIES

Water Code Sections 10631 (a) through (d) requires the Plan include a detailed evaluation of water supplies. The 2020 Guidebook (Appendix F, UWMP checklist) provides the following guidance:

#24. 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. 10631(b)(1)

#25. 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. 10631(b)(1)

#26. When multiple sources of water supply are identified, describe the management of each supply in relationship to other identified supplies. 10631(b)(2)

#27. Describe measures taken to acquire and develop planned sources of water. 10631(b)(3)

#28. Identify and quantify the existing and planned sources of water available for 2020, 2025, 2030, 2035, 2040 and optionally 2045. 10631(b)

#29. Indicate whether groundwater is an existing or planned source of water available to the supplier. 10631(b)

#30. Indicate whether a 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. 10631(b)(1)

#31. Describe the groundwater basin. 10631(b)(2)

#32. 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. 10631(b)(2)

#33. For unadjudicated basins, indicate whether or not the department has identified the basin as overdrafted, or projected to become overdrafted. Describe efforts by the supplier to eliminate the long-term overdraft condition. 10631(b)(2)

#34. 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. 10631(b)(3)

#35. Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped. 10631(b)(4)

#36. Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis. 10631(d)

#37. 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. 10633(b)

#38. Describe the recycled water currently being used in the supplier's service area. 10633(c)

#39. Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses. 10633(d)

#40. 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. 10633(e)

#41. 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. 10633(f)

#42. Provide a plan for optimizing the use of recycled water in the supplier's service area. 10633(g)

#43. Describe desalinated water project opportunities for long-term supply. 10631(h)

#44. Describe the wastewater collection and treatment systems in the supplier's service area. Include quantification of the amount of wastewater collected and treated and the methods of wastewater disposal. 10633(a)

#45. 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. 10631(f)

#46. The UWMP must include energy information, as stated in the code, that a supplier can readily obtain. 10631.2(a)

This section addresses water supply sources available to the SJMWS. It includes a description and quantification of each water source, including surface water, groundwater, recycled water, desalinated water, and water transfers and exchange opportunities. The section presents a complete water portfolio for the SJMWS. The following sections provide details in response to those requirements of this portion of the Water Code requirements.

Sources of Supply

SJMWS relies on four sources of supply: surface water from SFPUC, local and imported surface water from Valley Water, groundwater from the Santa Clara groundwater basin, and recycled water from the SBWR Program. As mentioned earlier, the City has four separate service areas, and each service area has its own unique water sources. **Table 6-1** provides a summary of the water source(s) for each service area.

Table 6-1. Water Source by SJMWS Service Area

Service Area	SFPUC	Valley Water	Groundwater	Recycled Water
North San José/Alviso	X		X	X
Evergreen		X	X	X
Edenvale			X	X
Coyote Valley			X	X

Supply sources received by SJMWS and discussed within this section are generally considered to be consistent sources, except during times of prolonged drought during which supplies would be decreased based on reduced availability of wholesale supplies, as discussed in this section. This section includes the amount of supply from each source that was purchased historically and is anticipated to be purchased in the future as determined by SJMWS.

North San José/Alviso

The service area is served through two service connections to SFPUC Bay Division Pipelines 3 and 4. The turnouts feed the demand of the distribution system and storage requirements of the two reservoirs. There are pump station facilities at each of the reservoirs. There is only one pressure zone in this service area. The pumping facilities are used to boost the pressure of water stored in the reservoirs from elevation head to system pressure. There are four groundwater wells with a combined pump capacity of approximately 6,500 gpm; two of the wells are currently permitted to be used under normal conditions to supply water, and the other two are available for emergency use purposes.

Evergreen

Three turnouts are connected to Valley Water's East Pipeline. There are five different pressure zones with 13 storage tanks and 13 pump stations. There are four groundwater wells with a combined pump capacity of approximately 6,000 gpm.

Edenvale

There are three groundwater wells, with a combined pump capacity of approximately 2,700 gpm, that pump groundwater to the distribution system and a storage tank.

Coyote Valley

There are three groundwater wells, with a combined pump capacity of approximately 3,500 gpm, that pump groundwater to the distribution system and a storage tank.

Purchased or Imported Water

SFPUC – Wholesaler

The NSJ/Alviso service area receives water from the City and County of San Francisco's Regional Water System (RWS), which is operated by the SFPUC. This supply is predominantly from the Sierra Nevada mountain range delivered through the Hetch Hetchy aqueducts, but also includes treated water produced by the SFPUC from its local watersheds and facilities in Alameda and San Mateo counties. The SFPUC supply is primarily unfiltered Hetch Hetchy water with a blend of filtered Sunol Valley water. There are two turnout connections from SFPUC's Bay Division Pipelines No. 3 and No. 4 to the NSJ/Alviso service area.

The amount of imported water available to SFPUC's retail and wholesale customers is constrained by hydrology, physical facilities, and the institutional parameters that allocate the water supply of the Tuolumne River. Due to these constraints, SFPUC is very dependent on reservoir storage to firm-up its water supplies.

SFPUC serves its retail and wholesale water demands with an integrated operation of local Bay Area water production and imported water from Hetch Hetchy. In practice, the local watershed facilities are operated to capture local runoff.

The business relationship between the SFPUC and its wholesale customers is largely defined by the "Water Supply Agreement between the City and County of San Francisco and Wholesale Customers in Alameda County, San Mateo County and Santa Clara County" (WSA) entered into in July 2009, and amended and restated in 2018. This 25-year WSA replaced the 1984 Settlement Agreement and Master Water Sales Contract and will expire on June 30, 2034, unless extended by two additional five-year option terms. The WSA addresses the rate-making methodology used by the SFPUC in setting wholesale water rates for its customers in addition to addressing water supply and water shortages for the RWS. The WSA serves as the master agreement and it provides 184 million gallons per day (MGD) Supply Assurance to all the permanent SFPUC wholesale customers on an annual average basis. Under the WSA, the City has a temporary interruptible supply. However, the SFPUC must provide 10 years notice to interrupt the supply, and seek out additional sources of water.

The WSA is supplemented by an individual Water Sales Contract between SFPUC and each individual retailer, also entered into in July 2009. The individual Water Sales Contract indicates any specific conditions between SFPUC and the retailer. The Water Sales Contract between SFPUC and San José identifies a temporary, interruptible allocation of 4.5 MGD to San José. The WSA also contains a Water Shortage Allocation Plan (WSAP) between the SFPUC and its wholesale customers, which describes the method for allocating water during supply shortages. The Tier 1 Plan allocates water from the RWS

between San Francisco retail and wholesale customers during system-wide shortages of 20% or less. The Tier One Plan was amended in the 2018 WSA to ensure that retail customers also conserve during drought conditions. The Tier 2 Plan allocates the collective wholesale customer share among the wholesale customers.

BAWSCA

SJMWS is a member of the Bay Area Water Supply and Conservation Agency (BAWSCA). BAWSCA was created on May 27, 2003 to represent the interests of the 26 agencies that include cities, water districts, a water company, and a university, in Alameda, Santa Clara and San Mateo counties that purchase water on a wholesale basis from the RWS. The BAWSCA agencies are collectively referred to as the Wholesale Customers.

BAWSCA provides regional water reliability planning and conservation programming for the benefit of its member agencies. Collectively, the BAWSCA member agencies deliver water to over 1.8 million residents and nearly 40,000 commercial, industrial and institutional accounts in Alameda, San Mateo and Santa Clara Counties.

BAWSCA also represents the collective interests of these wholesale water customers on all significant technical, financial, and policy matters related to the operation and improvement of the RWS. BAWSCA has the authority to coordinate water conservation, supply, and recycling activities for its agencies; acquire water and make it available to other agencies on a wholesale basis; finance projects, including improvements to the regional water system; and build facilities jointly with other local public agencies or on its own to carry out the agency's purposes.

BAWSCA's Long-Term Reliable Water Supply Strategy (Strategy), completed in February 2015, quantified the water supply reliability needs of the BAWSCA member agencies through 2040, identified the water supply management projects and/or programs (projects) that could be developed to meet those needs, and prepared an implementation plan for the Strategy's recommendations.

When the 2015 Demand Study concluded it was determined that while there is no longer a regional normal year supply shortfall, there was a regional drought year supply shortfall of up to 43 MGD. In addition, key findings from the Strategy's project evaluation analysis included:

- Water transfers represent a high priority element of the Strategy.
- Desalination potentially provides substantial yield, but its high effective costs and intensive permitting requirements make it a less attractive drought year supply alternative.
- Other potential regional projects provide tangible, though limited, benefit in reducing dry-year shortfalls given the small average yields in drought years.

Since 2015, BAWSCA has completed a comprehensive update of demand projections and engaged in significant efforts to improve regional reliability and reduce the dry-year water supply shortfall.

Water Transfers

BAWSCA successfully facilitated two transfers of portions of Individual Supply Guarantee (ISG) between BAWSCA agencies in 2017 and 2018. Such transfers benefit all BAWSCA agencies by maximizing use of existing supplies. BAWSCA is currently working on an amendment to the Water Supply Agreement between the SFPUC and BAWSCA agencies to establish a mechanism by which member agencies that have an ISG may participate in expedited transfers of a portion of ISG and a portion of a Minimum Annual Purchase Requirement. In 2019, BAWSCA participated in a pilot water transfer that, while ultimately unsuccessful, surfaced important lessons learned and produced interagency agreements that will serve as a foundation for future transfers. BAWSCA is currently engaged in the Bay Area Regional Reliability (BARR) Partnership, a partnership among eight Bay Area water utilities (including the SFPUC, Alameda County Water District, BAWSCA, Contra Costa Water District, Santa Clara Valley Water District) to identify opportunities to move water across the region as efficiently as possible, particularly during times of drought and emergencies.

Regional Projects

Since 2015, BAWSCA has coordinated with local and State agencies on regional projects with potential dry-year water supply benefits for BAWSCA's agencies. These efforts include storage projects, indirect/direct water reuse projects, and studies to evaluate the capacity and potential for various conveyance systems to bring new supplies to the region.

BAWSCA continues to implement the Strategy recommendations in coordination with BAWSCA member agencies. Strategy implementation will be adaptively managed to account for changing conditions and to ensure that the goals of the Strategy are met in an efficient and cost-effective manner. On an annual basis, BAWSCA will reevaluate Strategy recommendations and results in conjunction with development of the BAWSCA's FY 2021-22 Work Plan. In this way, actions can be modified to accommodate changing conditions and new developments.

Valley Water – Wholesaler

SJMWS purchases treated surface water from Valley Water (previously called the Santa Clara Valley Water District) under a treated water contract. Valley Water contracts with the US Bureau of Reclamation and the State to receive imported CVP water and SWP water. Valley Water also operates its conjunctive use system of surface water from local watersheds and groundwater. Valley Water's water supply system is comprised of local reservoirs, the groundwater subbasins, groundwater recharge facilities, treatment plants, a treated water transmission system, imported supplies, and raw water conveyance facilities. Valley Water supplies water to local retail water agencies which in turn provide it to their retail customers in Santa Clara County. Valley Water has an active conjunctive use water management program to optimize the use of groundwater and surface water, and to prevent groundwater overdraft and land subsidence. Both groundwater and imported water are sold to retailers.

Valley Water's imported water is conveyed from the Sacramento-San Joaquin Delta to Santa Clara County through two main conveyance facilities: the South Bay Aqueduct, which carries water from the SWP, and

the Santa Clara Conduit and Pacheco Conduit, which bring water from the federal CVP. Local water captured in Anderson and Calero reservoirs and imported water are treated at Valley Water's Santa Teresa, Rinconada, and Penitencia Water Treatment Plants.

Local runoff is captured in local reservoirs for recharge into the groundwater subbasins or treatment at one of Valley Water's Water Treatment Plants (WTPs). The total storage capacity of these surface reservoirs is about 169,000 acre-feet (AF). The Rinconada WTP was constructed in 1967 and can sustain a maximum flow rate of 75 MGD. Upgrades are in the planning stage to increase production at Rinconada to 100 MGD. The Penitencia WTP was constructed in 1974 and can sustain a maximum flow rate of 42 MGD. The Santa Teresa WTP was constructed in 1989 and can sustain a maximum flow rate of 100 MGD.

Treated water pipelines that convey water from the treatment plants to the retail water agencies include: the West Pipeline, the Campbell Distributary, the Santa Clara Distributary, the Mountain View Distributary and the Sunnyvale Distributary from Rinconada WTP; the Snell Pipeline and Graystone Pipeline from Santa Teresa WTP; and the East Pipeline, Parallel East Pipeline, and Milpitas Pipeline, which can be fed from the Santa Teresa WTP or from Penitencia WTP.

In 1972, Valley Water entered into the first contract to supply SJMWS with treated potable water. Another contract initiated in 1981 remains in effect until 2051. Two amendments have been executed since 1981 with the most recent one adopted in 1994. The contract established a schedule of water deliveries where SJMWS submits a projected request for a five-year period to facilitate planning and Valley Water contracts annually for minimum deliveries, with restrictions based on peak demand and annual distribution.

SJMWS receives treated water from Valley Water's Santa Teresa and Penitencia WTPs through the East and Snell Pipelines. There are three turnout connections from the Valley Water's East Pipeline to the City's Evergreen service area named: Aborn, Norwood, and Silver Creek.

Groundwater

Groundwater Basin Description

Groundwater provides about half of the County's water supply for potable use, through pumping by retail water agencies or individual well owners. The groundwater basin in Santa Clara County is not adjudicated and has not been identified or projected to be in overdraft by DWR. The quality, supply, and management of the local groundwater basin is monitored and managed by Valley Water who acts as the Groundwater Sustainability Agency for Santa Clara. In 2016, Valley Water completed and submitted an Alternative plan to DWR in lieu of a Groundwater Sustainability Plan to meet the requirements of the Sustainable Groundwater Management Act of 2014. In 2017, the Alternative Plan was approved by DWR, and is available at Valley Water's website (https://www.valleywater.org/your-water/where-your-water-comes/groundwater/sustainable) or at DWR's SGMA portal (https://sgma.water.ca.gov/portal/alternative/print/18); the report's Executive Summary is included in Appendix H.

Valley Water has about 144,000 AFY of managed recharge capacity, including more than 90 miles of in-stream recharge and 102 off-stream recharge ponds. Runoff is captured in Valley Water's reservoirs and released into both in-stream and off-stream recharge ponds for percolation into the groundwater basin. In addition, imported water is delivered by the raw water conveyance system to streams and ponds for groundwater recharge.

The groundwater system in Santa Clara County performs multiple functions: treatment, transmission, and storage. Water enters the groundwater subbasins through recharge areas generally located at or near the subbasins' perimeter and is transmitted into the deeper confined aquifer of the central part of the valley. In the process, the water is filtered and becomes suitable for drinking. Eventually the groundwater reaches pumping zones, where it is extracted for municipal, industrial, and agricultural uses. The groundwater basin has vast storage capacity, enabling supplies to be carried over from wet years to dry years.

Valley Water's Groundwater Management Plan identifies two sustainability goals related to groundwater supply: reliability and protection (Valley Water, 2021):

- Groundwater supplies are managed to optimize water supply reliability and minimize land subsidence.
- Groundwater is protected from existing and potential contamination, including saltwater intrusion.

These sustainability goals describe the overall objectives of Valley Water's groundwater management program. The basin management strategies are the methods that will be used to meet the sustainability goals. Many of these strategies have overlapping benefits to groundwater resources, acting to improve water supply reliability, minimize subsidence, and protect or improve groundwater quality. The strategies are listed below.

1. Manage groundwater in conjunction with surface water through direct and in-lieu recharge programs.
2. Implement programs to protect or promote groundwater quality.
3. Maintain and develop adequate groundwater models and monitoring systems.
4. Work with regulatory and land use agencies to protect recharge areas, promote natural recharge, and prevent groundwater contamination.

Valley Water and local partners have implemented numerous programs to protect groundwater resources, and Valley Water has established comprehensive monitoring programs related to groundwater levels, land subsidence, groundwater quality, recharge water quality, and surface water flow. In addition, Valley Water has developed the following outcome measures to gauge performance in meeting the basin sustainability goals:

1. Projected end of year groundwater storage is greater than 278,000 AF in the Santa Clara Plain, 5,000 AF in Coyote Valley, and 17,000 AF in the Llagas Subbasin.
2. Groundwater levels are above subsidence thresholds at the subsidence index wells.

3. At least 95% of countywide water supply wells meet primary drinking water standards and at least 90% of South County wells meet Basin Plan agricultural objectives.
4. At least 90% of wells have stable or decreasing concentrations of nitrate, chloride, and total dissolved solids.

Valley Water will update its Groundwater Management Plan in 2021 and submit it to DWR by January 2022 to meet SGMA requirements for five-year updates. Valley Water's groundwater monitoring reports are available at: https://www.valleywater.org/your-water/where-your-water-comes-from/groundwater/groundwater-monitoring.

Groundwater Management and Overdraft Conditions

Within Santa Clara County, Valley Water manages two groundwater subbasins that transmit, filter, and store water: the Santa Clara Subbasin (DWR Subbasin 2-900.02) and the Llagas Subbasin (DWR Subbasin 3-003.01), which cover a combined surface area of approximately 385 square miles. Neither subbasin has been identified by DWR as being critically overdrafted. In its water supply planning, Valley Water frequently splits the Santa Clara Subbasin into two subareas: the Santa Clara Plain and the Coyote Valley. SJMWS draws groundwater from the Santa Clara Subbasin. Wells in the Coyote Valley service area draw from the Coyote Valley subarea while the other three service areas draw from the Santa Clara Plain subarea. The estimated operational storage capacity of the groundwater subbasins is up to 548,000 AF. Valley Water's managed recharge capacity is up to about 144,000 AFY. Although part of the same subbasin, these two subareas have different groundwater management challenges and opportunities and are in different groundwater charge zones.

Groundwater conditions throughout the county are sustainable, with managed and in-lieu recharge programs maintaining adequate storage to meet annual water supply needs and provide a buffer against drought or other shortages. Although groundwater levels declined during the recent (2012-2016) statewide drought, groundwater levels in the Santa Clara and Llagas subbasins quickly recovered after the drought due largely to Valley Water's proactive response and comprehensive water management activities. Valley Water monitors water levels and water quality at wells throughout the county. In addition, it evaluates data from local water suppliers to assess regional groundwater quality and identify potential threats so they can be appropriately addressed. Valley Water also monitors the quality of water used for groundwater recharge to ensure groundwater resources are protected.

These subbasins contain young alluvial fill formation and the older Santa Clara Formation. Both formations are similar in character and consist of gravel, sandy gravel, gravel and clay, sand, and silt and clay. The coarser materials are usually deposited along the elevated lateral edges of the subbasins, while the flat subbasin interiors are predominantly thick silt and clay sections inter-bedded with smaller beds of clean sand and gravel. A general discussion of each groundwater subarea is provided below.

Santa Clara Subbasin - Santa Clara Plain

The Santa Clara Plain is part of the Santa Clara Subbasin, located in a structural trough that is bounded by the Santa Cruz Mountains to the west and the Diablo Range to the east. The Plain, which is approximately 22 miles long, narrows from a width of 15 miles near the County's northern boundary to about half a mile wide at the Coyote Narrows, where the two ranges nearly converge. The Plain has a surface area of 225 square miles and is approximately 15 square miles smaller than the Santa Clara Subbasin, since it does not include the Coyote Valley portion of the Santa Clara Subbasin. Although hydraulically connected, Valley Water refers to the Coyote Valley separately (see description below) since it is in a different groundwater charge zone than the Santa Clara Plain and has fewer water supply options than the Santa Clara Plain. The Plain underlies the northerly portion of the Santa Clara County and includes the majority of the streams and recharge facilities operated by Valley Water.

Santa Clara Subbasin - Coyote Valley

The Coyote Valley portion of the Santa Clara Subbasin is an alluvial-filled basin hydraulically connected to the Santa Clara Plain to the north. The Coyote Valley extends from Metcalf Road south to Cochrane Road, where it joins the Llagas Subbasin at a groundwater divide. The Coyote Valley is approximately seven miles long and ranges in width from a half mile at the Coyote Narrows to three miles, with a surface area of approximately 15 square miles. Valley Water estimates the operational storage capacity of the Coyote Valley to be between 23,000 and 33,000 AF.

Llagas Subbasin

The Llagas Subbasin extends from the groundwater divide at Cochrane Road, near Morgan Hill, to the Pajaro River (the Santa Clara-San Benito County line) and is bounded by the Diablo and Coast Ranges. The Llagas Subbasin is approximately 15 miles long, three miles wide along its northern boundary, and six miles wide along the Pajaro River. DWR Bulletin 118, Update 2003 identifies this subbasin as Basin 3-3.01 and includes it as part of the Gilroy Hollister Groundwater Basin. The depth of alluvial fill and the underlying Santa Clara Formation varies from about 500 feet at the northern divide to greater than 1,000 feet at its south end. Valley Water estimates the operational storage capacity of the Llagas Subbasin to be between 150,000 and 165,000 AF.

Historical Groundwater Pumping

SJMWS draws groundwater from the Santa Clara Subbasin (**Figure 6-1**). Groundwater is a source of supplemental water supply for SJMWS's NSJ/Alviso and Evergreen service areas. SJMWS owns and operates fourteen groundwater wells. Potable water demands for the Edenvale and Coyote Valley service areas are supplied entirely by groundwater. During the past five years, SJMWS's groundwater demands have been sufficiently met. **Table 6-2** shows the historical volume pumped from the basin.

Table 6-2. (DWR Table 6-1): Groundwater Volume Pumped						
Groundwater Type	Location or Basin Name	2016	2017	2018	2019	2020
Alluvial Basin	Santa Clara Subbasin and Coyote Valley Subbasin	654	312	851	938	885
	TOTAL	654	312	851	938	885

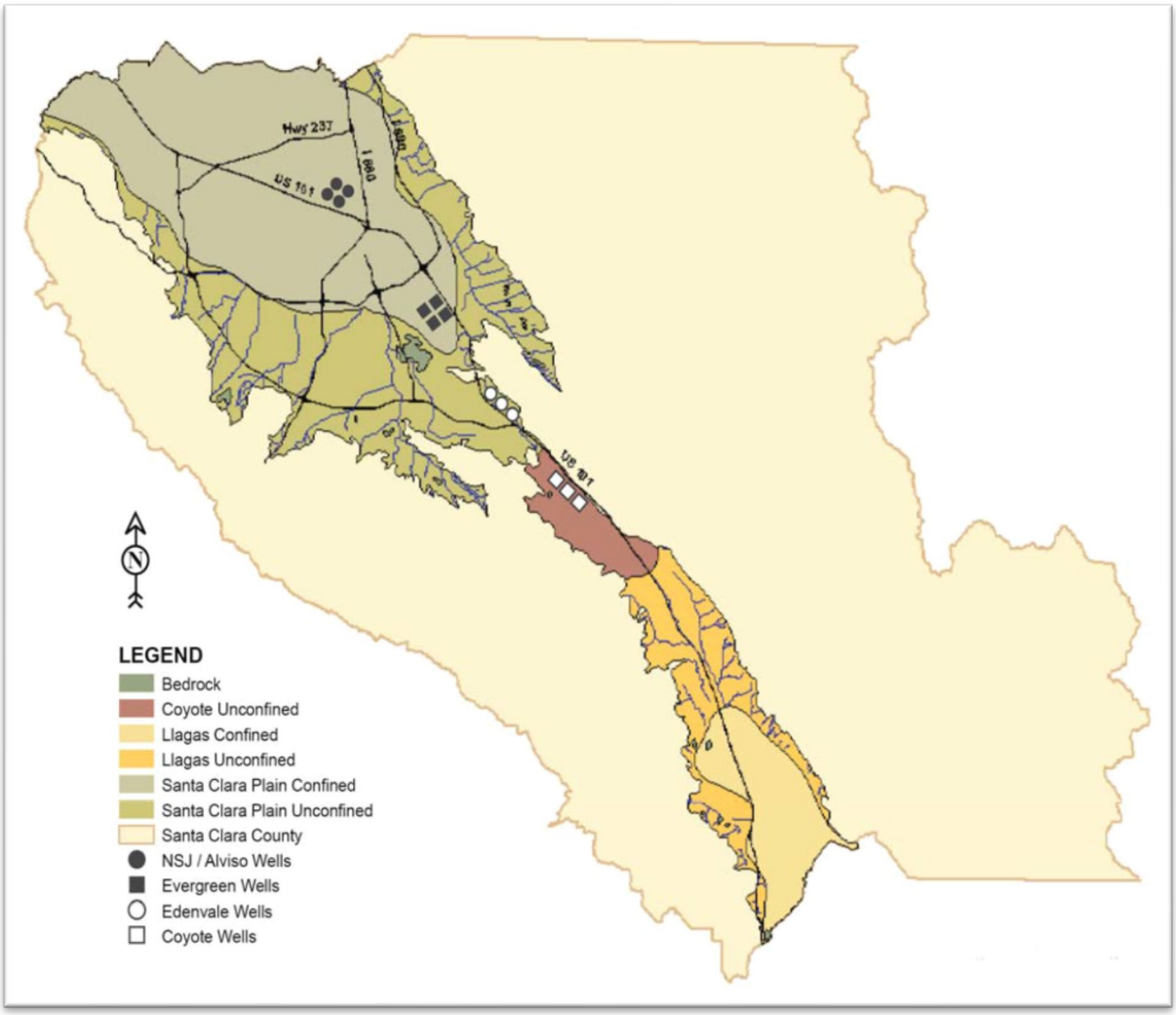

Figure 6-1. Santa Clara County Groundwater Basin and SJMWS Groundwater Wells

In April of each year, when the quantity of imported water available to Valley Water by contract and the local water yield can be more accurately approximated, Valley Water estimates the carryover storage. Based on the calculated carryover capacity and anticipated customer demand, Valley Water reviews and modifies its groundwater management strategy in order to maintain adequate water in the basin and avoid subsidence. Groundwater supply is largely constrained by hydrologic variability and the estimated 548,000 AF of operational storage capacity within the subbasins. The inflows to the groundwater subbasins are constrained by Valley Water's managed aquifer recharge program and natural recharge.

As required by the State Water Resources Control Board (SWRCB) for their Drinking Water Source Assessment and Protection Program, drinking water source assessments were conducted for all 14 groundwater wells within SJMWS service areas. The assessments were conducted by SJMWS staff, and consisted of information gathered from City records, databases, staff, the SWRCB, and visual field surveys.

In North San José, potential contamination sources include local electronic manufacturing facilities, gas stations, leaking underground storage tanks and sewer collection facilities. The Evergreen wells are vulnerable to potential contamination from automobile gas stations, underground storage tank leaks and dry-cleaning service activities. The Edenvale wells are vulnerable to potential contamination from chemical/petroleum processing storage activities. The Coyote wells are vulnerable to potential contamination caused by agricultural drainage, illegal activities/unauthorized dumping, storage tank leaks and sewer collection systems. However, the existing well locations and precautions taken during construction, in combination with the local hydrology, have provided a high level of protection against contamination of the local ground waters.

As the groundwater management agency in Santa Clara County, Valley Water has ongoing groundwater protection programs to ensure high water quality and more reliable water supplies. These programs include well permitting, well destruction, wellhead protection, land use and development review, nitrate management (targeted to areas of elevated nitrate in the southern portion of the County), saltwater intrusion programs, and providing technical assistance to regulatory agencies to ensure local groundwater resources are protected (Valley Water, 2001).

In many areas along the coast, shallow groundwater may be vulnerable to rising sea levels and saltwater intrusion. Saltwater intrusion has occurred in the shallow aquifer beneath North San José/Alviso. However, in Santa Clara County, the aquifers that provide the primary drinking water source are protected by a natural barrier made up of extensive horizontal clay layers. Valley Water does not consider saltwater intrusion to be a significant threat.

Surface Water

SJMWS does not directly provide surface water. As discussed above, the purchased/imported water from the two wholesalers contains surface water as a part of the supply mix.

Stormwater

SJMWS does not directly use storm water as a supply source. Valley Water utilizes stormwater as a natural source for groundwater recharge as Valley Water is the agency that manages the two groundwater subbasins within Santa Clara County. Stormwater is considered as a source of wholesale supply for long-term water supply planning purposes because it contributes to the available groundwater supply. Natural recharge includes all uncontrolled recharge, including the deep percolation of rainfall, septic system and/or irrigation return flows, and natural seepage through creeks (Valley Water, 2021). However, San José recently developed the Integrated Water Infrastructure Program (IWIP).

Integrated Water Infrastructure Program

The Integrated Water Infrastructure Program (IWIP) was established in 2020 by the City's Environmental Services Department to develop a comprehensive solution and to align with opportunities that may become available as part of other programs including the City's Green Stormwater Infrastructure Plan, Climate Smart San José, and expanding non-potable water usage.

The objective of the IWIP is to integrate existing water infrastructure to create a cohesive distribution system conveying stormwater, non-potable groundwater, and recycled water in a way to maximize under-utilized assets and increase the non-potable water supply. The City has begun to implement regional IWIP pilot projects.

Existing Infrastructure and Water Supply Options

Currently, there are multiple forms of non-potable water supply and conveyance opportunities throughout San José. These include:

- Non-potable groundwater wells - Each water retailer has aging groundwater wells that are no longer used for drinking water purposes but have the potential to be integrated with non-potable water supplies.
- Non-potable groundwater - The upper portion of the groundwater aquifer is not used for drinking water purposes, but is readily available and may be potentially used for non-potable uses.
- Groundwater infiltration - Development activities, existing and new businesses, and residents with below-ground infrastructure often experience groundwater infiltration. Typically, this water cannot be used for drinking water but is a viable option for non-potable supplies.
- Stormwater & Stormwater Collection Systems - There are approximately 1,100 miles of stormwater pipe and 1,510 stormwater outfalls, this existing infrastructure may be a potential source of non-potable water.

Program Focus

The IWIP is structured to combine efforts and progress of other high priority programs (e.g. the Green Stormwater Infrastructure Plan, Climate Smart San José), and re-envision access to local water supplies with cost-effective solutions. While the IWIP could be very broad in scope, to narrow focus, separate

components were considered for evaluation to address water supply challenges, support ongoing goals, and explore opportunities to develop local water supplies. These include the following:

- Stormwater Treatment
    - Explore dry-weather stormwater treatment options and new treatment systems to integrate with existing recycled water infrastructure for reuse opportunities.
    - Evaluate utilizing the stormwater system as conveyance for non-potable water during summer months.
    - Pilot technology that can be used to support onsite use for local businesses with groundwater infiltration, stormwater management, and non-potable groundwater.
- Non-Potable Groundwater Supplies
    - Groundwater wells, unable to be used for drinking water purposes without costly advanced treatment, may potentially be integrated with non-potable water supplies.
    - Utilize existing groundwater well infrastructure to augment non-potable supplies and take advantage of a local, unused resource.

The IWIP's stated goal is to integrate existing water infrastructure, including stormwater, non-potable groundwater, and recycled water to maximize assets and increase the non-potable water supply. The IWIP is in the conceptual stage of development and therefore this UWMP does not include any supply or reduction in demand resulting from the program.

Wastewater and Recycled Water

Wastewater Collection and Treatment

Wastewater from SJMWS service areas is collected and treated at the San José/Santa Clara Regional Wastewater Facility (RWF) located at the southern end of San Francisco Bay, which has a design capacity of 167 MGD. In addition to the SJMWS service areas, the RWF treats wastewater from San José, Santa Clara, Milpitas, Campbell, Cupertino, Los Gatos, Monte Sereno and Saratoga, serving an area of over 300 square miles and a population of more than 1.4 million. **Table 6-3** provides information about the RWF, wastewater collection, and recipient of wastewater. The table also provides data for total wastewater collected from the SJMWS service area in 2020. **Table 6-4** provides information regarding the wastewater treatment and discharge within SJMWS service area in 2020.

Table 6-3. (DWR Table 6-2): Wastewater Collected Within Service Area in 2020						
Wastewater Collection			Recipient of Collected Wastewater			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated?	Volume of Wastewater Collected from UWMP Service Area 2020	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located Within UWMP Area?	Is WWTP Operation Contracted to a Third Party?
City of San José	Estimated	10,205	City of San José/Santa Clara	San José/Santa Clara Regional Wastewater Facility	Yes	No
Total Wastewater Collected from Service Area in 2020:		10,205				

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

Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number	Method of Disposal	Does This Plant Treat Wastewater Generated Outside the Service Area?	Treatment Level	2020 volumes			
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area
San José/ Santa Clara Regional Wastewater Facility	Artesian Slough	Tributary to South San Francisco Bay via Coyote Creek	2438014001	Bay or estuary outfall	Yes	Tertiary	10,205	8,324	4,097	8,474
						TOTAL	10,205	8,324	4,097	8,474

Recycled and Purified Water System

A growing source of water for Santa Clara County is recycled and purified water. Recycled water offsets drinking water and groundwater supplies through in-lieu recharge; provides a reliable, drought-proof, locally controlled water supply; and reduces reliance on imported water. Recycled water is currently about 6% (or about 18,000 AFY) of the county's supply and is distributed for non-potable uses such as landscape and agricultural irrigation, industrial cooling, and dual plumbed facilities. This recycled water is produced at the four wastewater plants in the county – Palo Alto, Sunnyvale, San José/Santa Clara, and South County Regional Wastewater Authority. In addition, Valley Water is in the process of developing at least 20,000 AFY and up to 45,000 AFY of potable reuse capacity (Valley Water, 2021).

The City's major water recycling program, known as the SBWR Program, operates in compliance with the RWF's National Pollutant Discharge Elimination System Permit. A benefit of the program is the development of a drought-proof supply of water, which augments local and imported water supplies.

Non-Potable Reuse – SBWR Program

The City of San José operates the SBWR system and distributes recycled water generated by the San José/Santa Clara Regional Wastewater Facility. Some of this water is being supplied to Valley Water's adjacent Silicon Valley Advanced Water Purification Center, which in turn purifies a small portion of the water with advanced technologies and blends it with tertiary treated water to create high quality recycled water that can be used by a wider variety of customers. Since March 2014, the purification center has been demonstrating the effectiveness of the advanced treatment technologies (microfiltration, reverse osmosis, and advanced oxidation) and setting the stage for Valley Water to begin a potable reuse program. Potable reuse involves using purified water to augment groundwater or surface water supplies. The SBWR Strategic and Master Plan (Strategic Plan), which discusses non-potable and potable reuse opportunities, is available at https://www.valleywater.org/your-water/recycled-and-purified-water (Valley Water, 2021).

The SBWR program delivers disinfected tertiary treated wastewater from the RWF through an extensive recycled water distribution system consisting of over 150 miles of pipeline (**Figure 6-2**). The recycled water is used for non-potable purposes such as agriculture; industrial cooling and processing; and irrigation of golf courses, parks, and schools. During the peak summer season, SBWR diverts between 15 and 20 MGD of recycled water for irrigation and industrial uses to over 900 customers throughout San José, Santa Clara, and Milpitas.

In South Santa Clara County (which includes Coyote Valley), Valley Water partners with the South County Regional Wastewater Authority (SCRWA), City of Gilroy, and City of Morgan Hill on the recycled water program. SCRWA is the recycled water producer, Valley Water is the wholesaler, and Gilroy and Morgan Hill are the retailers by agreement. The 2015 South County Recycled Water Master Plan Update is available at https://www.valleywater.org/your-water/recycled-and-purified-water.

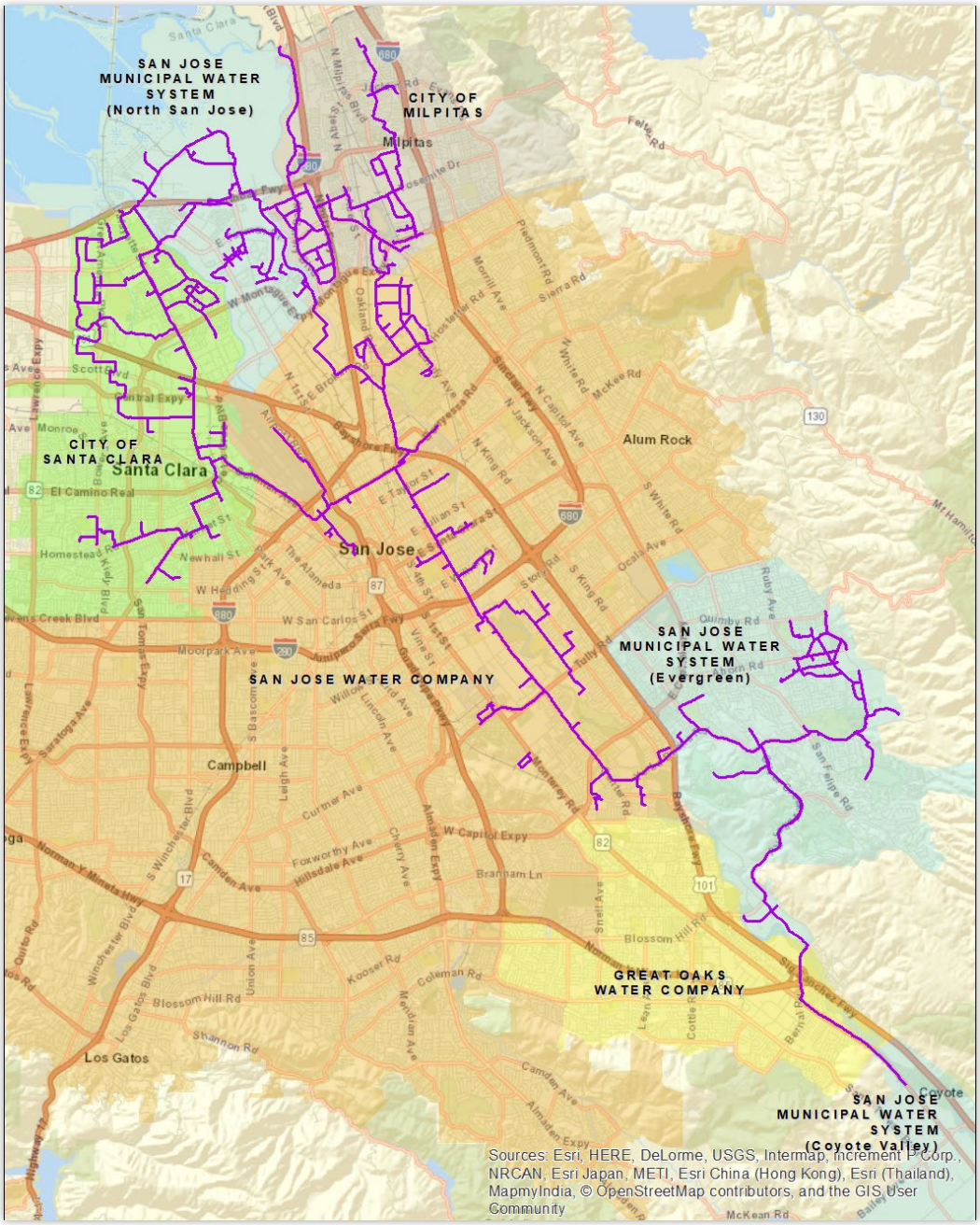

Figure 6-1. SBWR Recycled Water System

Current and Projected Recycled Water Use

Table 6-5 provides current and projected recycled water direct use projections for SJMWS.

Countywide, Valley Water's stated goal is to increase non-potable water supplies including recycled water. Based on water supply system modeling, the program will generally operate at full capacity in dry years throughout the planning horizon. Average use will increase over time as demands on the groundwater subbasins increase. Additional capacity may be developed in future phases depending on water supply needs, new regulations providing for direct potable reuse, and reverse osmosis concentrate disposal capacity.

IWIP, Recycled Water, & Recycled Water Distribution System

The existing non-potable water distribution system that provides recycled water to the SJMWS, South Bay Water Recycling (SBWR), could be used to convey both additional recycled water supplies and other types of non-potable water. IWIP will evaluate conveying non-potable water supplies, including non-potable groundwater and dry-weather run-off, through the existing recycled water system. IWIP projects will consider benefits for all participating agencies, including ownership of any infrastructure investments.

Recycled water continues to receive interest from local water retailers and wholesalers, and the development and business community. IWIP will evaluate options for cost-efficient infrastructure investments that support additional recycled water and other non-potable water supply opportunities.

Table 6-5. (DWR Table 6-4): Recycled Water Direct Beneficial Uses Within Service Area										
Name of Supplier Producing (Treating) the Recycled Water:	South Bay Water Recycling, Valley Water (advanced treatment)[1]									
Name of Supplier Operating the Recycled Water Distribution System:	South Bay Water Recycling									
Supplemental Water Added in 2020 (volume)	No									
Source of 2020 Supplemental Water	N/A									
Beneficial Use Type	Potential Beneficial Uses of Recycled Water (Describe)	Amount of Potential Uses of Recycled Water (Quantity)	General Description of 2020 Uses	Level of Treatment	2020	2025	2030	2035	2040	2045
Landscape irrigation (includes golf courses)	Landscape irrigation	N/A	Irrigation	Tertiary	2,025	2,444	2,887	3,432	4,155	4,180
Industrial use	Cooling towers, dual plumbing, etc.	N/A	Cooling towers, dual plumbing	Tertiary	2,072	2,332	2,569	2,847	3,213	3,233
				TOTAL	4,097	4,776	5,456	6,279	7,368	7,413

Notes:
1 See page 6-17 for information describing the relationship between identified suppliers.
N/A – Not applicable/not quantifiable

Past Recycled Water Supply Projection

Valley Water's 2015 UWMP projected 2020 countywide recycled water use to be 18,680 AF and to increase to 29,180 AF in 2030. Currently, countywide recycled water use is projected to increase from about 17,000 AFY in 2020 to about 28,000 AFY in 2045 (Valley Water, 2021).

In the 2015 UWMP, the City projected to use 5,117 AF of recycled water. However, the actual recycled water use in 2020 was 4,097 AF (Table 6-6), about 20% lower than projected. The actual usage was less than the projected use, due to a variety of factors including more efficient water use and conservation as a result of the 2012-2016 drought, reduced development activity, and the COVID-19 pandemic.

Table 6-6. (DWR Table 6-5): Recycled Water Use – 2015 Projected, 2020 Actual

Use Type	2015 Projection for 2020	2020 Actual Use
Landscape irrigation (includes golf courses)	2,435	2,025
Industrial use	2,682	2,072
TOTAL	5,117	4,097

Notes: Disparities attributed to a variety of factors including more efficient water use and conservation as a result of the 2012-2016 drought, reduced development activity, and the COVID-19 pandemic.

Actions to Encourage and Optimize Future Recycled Water Use

Currently, the cities of San José, Santa Clara and Milpitas promote recycled water usage through a variety of mechanisms, including:

- Lower cost of recycled water than potable water.
- Regulatory approval for recycled water usage.
- Ordinances requiring the use of recycled water for irrigation where available.
- Prohibition against the use of potable water for uses appropriate to recycled water.
- Support for developers' expansion of system to areas where recycled water is unavailable.

Within SJMWS service area, use of recycled water will continue to expand as developers construct additional distribution facilities to supply recycled water to serve a project's water needs. SJMWS anticipates increased recycled water usage within the service area as identified in the SBWR Strategic and Master Plan. Infrastructure enhancements, including potable reuse options will be evaluated to determine the most optimal use of available wastewater. Potable reuse involves using purified water to augment groundwater or surface water supplies. The SBWR Strategic and Master Plan (Strategic Plan), which discusses non-potable and potable reuse opportunities, is available at https://www.valleywater.org/your-water/recycled-and-purified-water. Methods to expand future recycled water uses are shown in **Table 6-7**. Additional recycled water usage in the SJMWS service area will come from strategic investments in infrastructure to connect nearby existing and planned projects.

Table 6-7. (DWR Table 6-6): Methods to Expand Future Recycled Water Use			
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use
Regional Planning	Valley Water planning efforts underway	ongoing	N/A
Rate Discounts	Priced lower than potable water	ongoing	N/A
Public Education	Support voluntary efforts to utilize recycled water	ongoing	N/A
Required Use	San José Municipal Code requires development to expand infrastructure and use recycled water	ongoing	N/A
Integrated Water Infrastructure Program	Integrate existing water infrastructure distribution systems conveying stormwater, non-potable groundwater, and recycled water in a way to increase non-potable water supply	pending	TBD
		TOTAL	N/A

Notes: N/A – Not applicable/not quantifiable, TBD – To be determined

Potable Reuse

Valley Water's draft Countywide Water Reuse Master Plan (CoRe Plan) includes developing 24,000 AFY of potable reuse capacity. There are multiple project portfolios across the county. Valley Water's Expedited Purified Water Program is currently evaluating an expanded and expedited potable reuse program that could include up to a total of 45,000 AFY of potable reuse capacity in the future (Valley Water, 2021).

Supplies for Potable Reuse

The SBWR retailer projections for recycled water use exceed the amount projected in the SBWR Strategic Plan. The Strategic Plan includes 15,000 AFY of retail recycled water deliveries, plus 5,600 AFY of recycled water reserved for Valley Water use. Valley Water includes all retailer projections in their supply analysis because the total supply in the SBWR system is sufficient to meet the demands. As Valley Water makes decisions regarding its potable reuse program and if they can utilize the 5,600 AFY of reserved supply from SBWR, Valley Water will update the recycled water projections as needed (Valley Water, 2021). The agreement between the City and Valley Water that reserves 5,600 AFY for Valley Water use expires in 2027.

Some of the potential constraints on development of potable reuse include brine disposal, public acceptance, permitting, hydrogeologic conditions, and costs. Once the program is implemented the largest challenge will be maximizing use of the available supply during wetter years when storage is full

and/or other lower cost supplies are competing for use. These constraints are being addressed as part of the Expedited Purified Water Program (Valley Water, 2021).

Desalinated Water Opportunities

SFPUC and Valley Water have been working together with Contra Costa Water District and the Zone 7 Water Agency in the Bay Area Regional Desalination Project (BARDP). Completion of a pilot project showed that the project is feasible; however, a subsequent multi-dry year period showed that the water rights that would be exercised to divert flows may not be fully available during droughts. Partners are evaluating the water rights to determine how much water could reliably be produced by a desalination facility and would also need to determine how to allocate the resulting supply between them.

Exchanges or Transfers

The majority of the transfer/exchange opportunities are managed by the wholesalers, SFPUC and Valley Water. SJMWS has the ability to purchase additional water from SFPUC as long as the combined amount between SJMWS and the City of Santa Clara does not exceed 9 MGD. SJMWS can also purchase excess water from other wholesale customers upon agreement. SJMWS also has emergency tie-ins with the City of Santa Clara and San José Water Company for potential short-term transfers.

Valley Water conducts short-term water transfers and exchanges as a part of its routine imported water operations. As a reference, Valley Water was able to secure over 13,400 AF of transfer supply in 2020. While Valley Water considers water exchange and transfers as one of the potential options to secure additional water during critical dry years through long-term agreements, there are considerable uncertainties with long term costs and ability to make transfers in critical dry years, during which water quality challenges and pumping restrictions may affect the ability to convey transfer supplies across the Delta. Consequently, Valley Water is not including water transfers and exchanges in its projected water supplies in their UWMP, except in the Drought Risk Analysis (Valley Water, 2021).

Additional details regarding wholesaler transfers and exchanges can be found in each individual wholesaler's UWMP.

Future Water Projects

As a water retailer, SJMWS does not plan on developing "new" water supplies. Typically, capital improvement projects address infrastructure replacement and reliability needs. Future groundwater wells are needed to support future demands (**Table 6-8**). The Santa Clara Valley groundwater basin is not adjudicated; however, SJMWS will still rely on Valley Water to actively manage the groundwater basin to prevent overdraft and potential subsidence.

Table 6-8. (DWR Table 6-7): Expected Future Water Supply Projects or Programs					
Name of Future Projects or Programs	Joint Project with other suppliers?	Description	Planned Implementation Year	Planned for Use in Year Type	Expected Increase in Water Supply to Supplier
Groundwater wells	No	Additional 5-7 wells to utilize groundwater as primary or backup supply	varies	All Year Types	4,000-9,000

SJMWS is actively involved in the planning activities of water wholesalers, SFPUC and Valley Water. SJMWS is also involved in the planning activities for recycled water through SBWR. There is potential to use recycled water for indirect reuse which is being evaluated by Valley Water. Additional information regarding wholesalers' future projects can be found in their UWMPs.

Summary of Existing and Planned Sources of Water

SJMWS relies on four sources of supply: surface water from SFPUC, local and imported surface water from Valley Water, groundwater from the Santa Clara groundwater basin, and recycled water from the SBWR Program. Supply sources received by SJMWS and discussed within this section are generally considered consistent sources in normal years. **Table 6-9** depicts the amount of supply from each source that was purchased in 2020. **Table 6-10** provides details of water supplies anticipated to be purchased in the future as determined by the City.

Climate change poses challenges in water resources management, although the full extent and associated impacts are uncertain. Statewide and local changes in precipitation and temperature could significantly impact wholesaler-managed supplies and water usage patterns. Effects of climate change to wholesale water supplies is further discussed in detail in Section 7.

Energy Use

The City pumps groundwater from fourteen (14) water production wells and diverts water from its wholesalers from five (5) turnouts. Booster pump stations and tanks are used throughout the SJMWS service area to distribute water to the distribution system and customer taps. The total amount of energy used to extract and divert water from the groundwater aquifer, convey water from the two wholesalers and pump water to the distribution system is shown in **Table 6-11** (DWR Guidebook Appendix O, Table O-1A) below. Wastewater and recycled water energy use is not available.

Table 6-9. (DWR Table 6-8): Water Supplies – 2020 Actual			
Water Supply	Additional Detail on Water Supply	2020	
		Actual Volume	Water Quality
Purchased or Imported Water	SFPUC	4,731	Drinking Water
Purchased or Imported Water	Valley Water	11,930	Drinking Water
Groundwater (not desalinated)		885	Drinking Water
Recycled Water		4,097	Recycled Water
	TOTAL	21,643	

Table 6-10. (DWR Table 6-9): Water Supplies – Projected						
Water Supply	Additional Detail on Water Supply	2025	2030	2035	2040	2045
		Reasonably Available Volume	Reasonably Available Volume	Reasonably Available Volume	Reasonably Available Volume	Reasonably Available Volume
Purchased or Imported Water	Potable Water – Valley Water and SFPUC	21,080	24,156	27,343	32,815	33,552
Recycled Water	SBWR	4,776	5,456	6,279	7,368	7,413
	TOTAL	25,856	29,612	33,622	40,183	40,965

Table 6-11. (DWR Table O-1B): Recommended Energy Reporting – Total Utility Approach		
Start Date for Reporting Period [1]	1/1/2020	Sum of All Water Management Processes
End Date	12/31/2020	
Volume of Water Entering Process (AF)		17,546
Energy Consumed (kWh) [2]		4,611,755
Energy Intensity (kWh/vol. converted to MG)		806.6
Quantity of Self-Generated Renewable Energy (kWh)	N/A	
Data Quality	Metered data	
Data Quality Narrative	Billing periods as billed by energy utility do not exactly overlap identified reporting period. Best available billing data used.	
Narrative	Energy consumed includes some building energy use as it cannot be separated from system asset energy use. Utility utilizes some solar power for occupied buildings and communication equipment; solar power does not contribute to water management process and therefore is not included in this table.	

DRAFT - Contact the Office of the City Clerk at (408) 535-1260 or CityClerk@sanjoseca.gov for final document, or access online here: https://www.sanjoseca.gov/your-government/environment/water-utilities/drinking-water

7. WATER SUPPLY RELIABILITY

Water Code Section 10635 (a) requires the UWMP to include discussion on water supply reliability. The 2020 Guidebook (Appendix F, UWMP checklist) provides this checklist:

#47. 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. 10634

#48. Describe water management tools and options to maximize resources and minimize the need to import water from other regions. 10620(f)

#49. Assess the water supply reliability during normal, dry, and a drought lasting five consecutive years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years. 10635(a)

#50. Provide a drought risk assessment as part of information considered in developing the demand management measures and water supply projects. 10635(b)

#51. 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. 10635(b)(1)

#52. Include a determination of the reliability of each source of supply under a variety of water shortage conditions. 10635(b)(2)

#53. Include a comparison of the total water supply sources available to the water supplier with the total projected water use for the drought period. 10635(b)(3)

#54. 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. 10635(b)(4)

A comparison of the water supplies and demands for the SJMWS is presented in this section. This section also presents an assessment of overall reliability of future supplies regardless of drought or emergency conditions. It includes discussion of the City's planned responses in emergency situations that can affect water supplies.

The City has taken guidance from the following documents/information while preparing this section:

- Valley Water's Draft 2020 Urban Water Management Plan (Valley Water, 2021)
- Email communications from BAWSCA to member agencies (BAWSCA, 2021)

Constraints on Water Sources

Currently, the City has the available water supply (discussed in Section 6) to meet the projected demands for the SJMWS. As discussed in Section 6, the City has the following sources of potable water supply for the SJMWS:

- SFPUC
- Valley Water
- Groundwater

Because the system supplies are derived from imported supplies purchased from the wholesalers and local groundwater, statewide and local conditions can impact the reliability of supplies. The following discussion summarizes the reliability of the SJMWS's water supply sources and constraints on those water sources, based on information provided to SJMWS from SFPUC and Valley Water. SJMWS provided demand projections to both agencies for use in their analyses of supply availability during average and dry years. The SJMWS's total supply is expected to meet demands in normal years through 2045. By utilizing different supply sources, SJMWS may reduce the impact of water shortage from a particular source. Since SJMWS relies on wholesalers' portfolio of supplies, the primary role of reducing Delta reliance is undertaken by the wholesalers and SJMWS will continue to coordinate and support those efforts; more information on wholesaler efforts to reduce Delta reliance are in **Appendix H**.

Reliability of the water supply for the SJMWS is determined based upon the reliability of wholesaler supplies and groundwater production, as discussed previously. The total water supply and demand for the SJMWS are presented in Section 6 and Section 4, respectively.

SFPUC: Reliability and Constraints

The SFPUC historically has met demand in its service area in all year types from its watersheds, which consist of:

- Tuolumne River watershed
- Alameda Creek watershed
- San Mateo County watersheds

In general, 85% of the supply comes from the Tuolumne River through Hetch Hetchy Reservoir and the remaining 15% comes from the local watersheds through the San Antonio, Calaveras, Crystal Springs, Pilarcitos and San Andreas Reservoirs. The adopted WSIP retains this mix of water supply for all year types.

The amount of imported water available to the SFPUC's retail and wholesale customers is constrained by hydrology, physical facilities, and the institutional parameters that allocate the water supply of the Tuolumne River. Due to these constraints, the SFPUC is very dependent on reservoir storage to firm-up its water supplies.

The SFPUC serves its retail and wholesale water demands with an integrated operation of local Bay Area water production and imported water from Hetch Hetchy. In practice, the local watershed facilities are operated to capture local runoff. The following describes allocation of SFPUC water supply during drought conditions, provided by BAWSCA (BAWSCA, 2021). Additional information on SFPUC's supply reliability was obtained from their January 22, 2021 letter transmittal to BAWSCA.

SFPUC Water Shortage Allocation Plan

As stated above, the WSA between San Francisco and its Wholesale Customers includes a WSAP that describes the method for allocating water from the RWS between Retail and Wholesale Customers during system-wide shortages of 20% or less. The WSAP was amended in the 2018 Amended and Restated WSA.

The WSAP has two components:

- The Tier One Plan, which allocates water between San Francisco and the wholesale customers collectively; and
- The Tier Two Plan, which allocates the collective wholesale customer share among the wholesale customers.

Tier One Drought Allocations

The SFPUC allocates water under the Tier One Plan when it determines that the projected available water supply is up to 20% less than projected system-wide water purchases. **Table 7-1** shows the SFPUC share and the Wholesale Customers' share of the annual water supply available during shortages depending on the level of system-wide reduction in water use that is required. The Wholesale Customers' share will be apportioned among the individual Wholesale Customers based on a separate methodology adopted by the Wholesale Customers, known as the Tier Two Plan, discussed further below.

Table 7-1. Distribution of Reduced SFPUC Supplies

Level of System-Wide Reduction in Water Use Required	Share of Available Water	
	SFPUC Share	Wholesale Customers Share
5% or less	35.5%	64.5%
6% through 10%	36.0%	64.0%
11% through 15%	37.0%	63.0%
16% through 20%	37.5%	62.5%

The Tier One Plan allows for voluntary transfers of shortage allocations between the SFPUC and any Wholesale Customer as well as between Wholesale Customers themselves. In addition, water "banked" by a Wholesale Customer, through reductions in usage greater than required, may also be transferred.

As amended in 2018, the Tier One Plan requires Retail Customers to conserve a minimum of 5% during droughts. If Retail Customer demands are lower than the Retail Customer allocation (resulting in a

"positive allocation" to Retail) then the excess percentage would be re-allocated to the Wholesale Customers' share. The additional water conserved by Retail Customers up to the minimum 5% level is deemed to remain in storage for allocation in future successive dry years.

The Tier One Plan will expire at the end of the term of the WSA in 2034, unless mutually extended by San Francisco and the Wholesale Customers.

The Tier One Plan applies only when the SFPUC determines that a system-wide water shortage exists and issues a declaration of a water shortage emergency under California Water Code Section 350. Separate from a declaration of a water shortage emergency, the SFPUC may opt to request voluntary cutbacks from its Retail and Wholesale Customers to achieve necessary water use reductions during drought periods.

Tier Two Drought Allocations

The Wholesale Customers have negotiated and adopted the Tier Two Plan, referenced above, which allocates the collective Wholesale Customer share from the Tier One Plan among each of the 26 Wholesale Customers. These Tier Two allocations are based on a formula that takes into account multiple factors for each Wholesale Customer including:

- Individual Supply Guarantee;
- Seasonal use of all available water supplies; and
- Residential per capita use.

The water made available to the Wholesale Customers collectively will be allocated among them in proportion to each Wholesale Customer's Allocation Basis, expressed in millions of gallons per day (MGD), which in turn is the weighted average of two components. The first component is the Wholesale Customer's Individual Supply Guarantee, as stated in the WSA, and is fixed. For San José, the value used here is 4.5 MGD, matching the quantity identified in the Water Sales Contract between SFPUC and San José. The second component, the Base/Seasonal Component, is variable and is calculated using the monthly water use for three consecutive years prior to the onset of the drought for each of the Wholesale Customers for all available water supplies. The second component is accorded twice the weight of the first, fixed component in calculating the Allocation Basis. Minor adjustments to the Allocation Basis are then made to supplies for temporary interruptible customers, including San José. Additional adjustments are made to ensure a minimum cutback level, a maximum cutback level, and a sufficient supply for certain Wholesale Customers.

The Allocation Basis is used in a fraction, as numerator, over the sum of all Wholesale Customers' Allocation Bases to determine each wholesale customer's Allocation Factor. The final shortage allocation for each Wholesale Customer is determined by multiplying the amount of water available to the Wholesale Customers' collectively under the Tier One Plan, by the Wholesale Customer's Allocation Factor.

The Tier Two Plan requires that the Allocation Factors be calculated by BAWSCA each year in preparation for a potential water shortage emergency. As the Wholesale Customers change their water use characteristics (e.g., increases or decreases in SFPUC purchases and use of other water sources, changes in monthly water use patterns, or changes in residential per capita water use), the Allocation Factor for each Wholesale Customer will also change. However, for long-term planning purposes, each Wholesale Customer shall use as its Allocation Factor, the value identified in the Tier Two Plan when adopted.

The Tier Two Plan, which initially expired in 2018, has been extended by the BAWSCA Board of Directors every year since for one additional calendar year. In November 2020, the BAWSCA Board voted to extend the Tier Two Plan through the end of 2021.

Individual Supply Guarantee

San Francisco has a perpetual commitment (Supply Assurance) to deliver 184 MGD to the 24 permanent Wholesale Customers collectively. San José and Santa Clara are not included in the Supply Assurance commitment and each has temporary and interruptible water supply contracts with San Francisco. The Supply Assurance is allocated among the 24 permanent Wholesale Customers through Individual Supply Guarantees (ISG), which represent each Wholesale Customer's allocation of the 184 MGD Supply Assurance.

2028 SFPUC Decisions

In the 2009 WSA, the SFPUC committed to make three decisions before 2018 that affect water supply development:

- Whether or not to make the cities of San José and Santa Clara permanent customers,
- Whether or not to supply the additional unmet supply needs of the Wholesale Customers beyond 2018, and
- Whether or not to increase the wholesale customer Supply Assurance above 184 MGD.

Events since 2009 made it difficult for the SFPUC to conduct the necessary water supply planning and CEQA analysis required to make these three decisions before 2018. Therefore, in the 2018 Amended and Restated WSA, the decisions were deferred for 10 years to 2028. San José continues to coordinate regularly with SFPUC to support and offer assistance to any endeavors and programs which will enable SFPUC to establish San José as a permanent customer. Additionally, San José has requested that SFPUC include 9 MGD for San José in their future supply planning process. Although this future supply request is not included in SFPUC's UWMP, it is included in its Alternative Water Supply Planning Quarterly Updates.

There have been recent changes to instream flow requirements and customer demand projections that have affected water supply planning beyond 2018. As a result, the SFPUC has established an Alternative Water Supply Planning program to evaluate several regional and local water supply options. Through this program, the SFPUC will conduct feasibility studies and develop an Alternative Water Supply Plan by July 2023 to support the continued development of water supplies to meet future needs.

Reliability of the Regional Water System

In 2008, the SFPUC adopted Level of Service (LOS) Goals and Objectives in conjunction with the adoption of WSIP. The SFPUC updated the LOS Goals and Objectives in February 2020.

The SFPUC's LOS Goals and Objectives related to water supply are shown in **Table 7-2**.

Table 7-2. SFPUC LOS Goals and Objectives

Program Goal	System Performance Objective
Water Supply – meet customer water needs in non-drought and drought periods	Meet all state and federal regulations to support the proper operation of the water system and related power facilities.
	Meet average annual water demand of 265 MGD from the SFPUC watersheds for retail and Wholesale Customers during non–drought years for system demands consistent with the 2009 Water Supply Agreement.
	Meet dry-year delivery needs while limiting rationing to a maximum 20% system-wide reduction in water service during extended droughts.
	Diversify water supply options during non-drought and drought periods.
	Improve use of new water sources and drought management, including groundwater, recycled water, conservation, and transfers.

Climate Change

The issue of climate change has become an important factor in water resources planning in the State and is frequently considered in urban water management planning processes, though the extent and precise effects of climate change remain uncertain. There is convincing evidence that increasing concentrations of greenhouse gasses have caused and will continue to cause a rise in temperatures around the world, which will result in a wide range of changes in climate patterns. Moreover, observational data show that a warming trend occurred during the latter part of the 20th century and virtually all projections indicate this will continue through the 21st century. These changes will have a direct effect on water resources in California, and numerous studies have been conducted to determine the potential impacts to water resources. Based on these studies, climate change could result in the following types of water resource impacts, including impacts on the watersheds in the Bay Area:

- Reductions in the average annual snowpack due to a rise in the snowline and a shallower snowpack in the low and medium elevation zones, such as in the Tuolumne River basin, and a shift in snowmelt runoff to earlier in the year;
- Changes in the timing, annual average, intensity and variability of precipitation, and an increased amount of precipitation falling as rain rather than snow;

- Long-term changes in watershed vegetation and increased incidence of wildfires that could affect water quality and quantity;
- Sea level rise and an increase in saltwater intrusion;
- Increased water temperatures with accompanying potential adverse effects on some fisheries and water quality;
- Increases in evaporation and concomitant increased irrigation need; and
- Changes in urban and agricultural water demand.

Both the SFPUC and BAWSCA participated in the 2020 update of the Bay Area Integrated Regional Water Management Plan (BAIRWMP), which includes an assessment of the potential climate change vulnerabilities of the region's water resources and identifies climate change adaptation strategies. In addition, the SFPUC continues to study the effect of climate change on the Regional Water System (RWS). These works are summarized below.

Bay Area Integrated Regional Water Management Plan

Climate change adaptation continues to be an overarching theme for the 2019 BAIRWMP update. As stated in the BAIRWMP, identification of watershed characteristics that could potentially be vulnerable to future climate change is the first step in assessing vulnerabilities of water resources in the Bay Area Region (Region). Vulnerability is defined as the degree to which a system is exposed to, susceptible to, and able to cope with or adjust to, the adverse effects of climate change. A vulnerability assessment was conducted in accordance with the Department of Water Resources' (DWR's) Climate Change Handbook for Regional Water Planning and using the most current science available for the Region. The vulnerability assessment, summarized in the table below, provides the main water planning categories applicable to the Region and a general overview of the qualitative assessment of each category with respect to anticipated climate change impacts.

Table 7-3. Summary of BAIRWMP Climate Change Vulnerability Assessment

Vulnerability Areas	System Performance Objective
Water Demand	**Urban and Agricultural Water Demand** – Changes to hydrology in the Region as a result of climate change could lead to changes in total water demand and use patterns. Increased irrigation (outdoor landscape or agricultural) is anticipated to occur with temperature rise, increased evaporative losses due to warmer temperature, and a longer growing season. Water treatment and distribution systems are most vulnerable to increases in maximum day demand.
Water Supply	**Imported Water** – Imported water derived from the Sierra Nevada sources and Delta diversions provide 66% of the water resources available to the Region. Potential impacts on the availability of these sources resulting from climate change directly affect the amount of imported water supply delivered to the Region.

Table 7-3. Summary of BAIRWMP Climate Change Vulnerability Assessment	
Vulnerability Areas	System Performance Objective
	Regional Surface Water – Although future projections suggest that small changes in total annual precipitation over the Region will not change much, there may be changes to when precipitation occurs with reductions in the spring and more intense rainfall in the winter.
	Regional Groundwater – Changes in local hydrology could affect natural recharge to the local groundwater aquifers and the quantity of groundwater that could be pumped sustainably over the long-term in some areas. Decreased inflow from more flashy or more intense runoff, increased evaporative losses and warmer and shorter winter seasons can alter natural recharge of groundwater. Salinity intrusion into coastal groundwater aquifers due to sea-level rise could interfere with local groundwater uses. Furthermore, additional reductions in imported water supplies would lead to less imported water available for managed recharge of local groundwater basins and potentially more groundwater pumping in lieu of imported water availability.
Water Quality	**Imported Water** – For sources derived from the Delta, sea-level rise could result in increases in chloride and bromide (a disinfection by-product (DBP) precursor that is also a component of sea water), potentially requiring changes in treatment for drinking water. Increased temperature could result in an increase in algal blooms, taste and odor events, and a general increase in DBP formation.
	Regional Surface Water – Increased temperature could result in lower dissolved oxygen in streams and prolong thermocline stratification in lakes and reservoirs forming anoxic bottom conditions and algal blooms. Decrease in annual precipitation could result in higher concentrations of contaminants in streams during droughts or in association with flushing rain events. Increased wildfire risk and flashier or more intense storms could increase turbidity loads for water treatment.
	Regional Groundwater – Sea-level rise could result in increases in chlorides and bromide for some coastal groundwater basins in the Region. Water quality changes in imported water used for recharge could also impact groundwater quality.
Sea-Level Rise	Sea-level rise is additive to tidal range, storm surges, stream flows, and wind waves, which together will increase the potential for higher total water levels, overtopping, and erosion.
	Much of the bay shoreline is comprised of low-lying diked baylands which are already vulnerable to flooding. In addition to rising mean sea level, continued subsidence due to tectonic activity will increase the rate of relative sea-level rise.

Table 7-3. Summary of BAIRWMP Climate Change Vulnerability Assessment	
Vulnerability Areas	System Performance Objective
	As sea-level rise increases, both the frequency and consequences of coastal storm events, and the cost of damage to the built and natural environment, will increase. Existing coastal armoring (including levees, breakwaters, and other structures) is likely to be insufficient to protect against projected sea-level rise. Crest elevations of structures will have to be raised or structures relocated to reduce hazards from higher total water levels and larger waves.
Flooding	Climate change projections are not sensitive enough to assess localized flooding, but the general expectation is that more intense storms would occur thereby leading to more frequent, longer, and deeper flooding.
	Changes to precipitation regimes may increase flooding.
	Elevated Bay elevations due to sea-level rise will increase backwater effects exacerbating the effect of fluvial floods and storm drain backwater flooding.
Ecosystem and Habitat	Changes in the seasonal patterns of temperature, precipitation, and fire due to climate change can dramatically alter ecosystems that provide habitats for California's native species. These impacts can result in species loss, increased invasive species ranges, loss of ecosystem functions, and changes in vegetation growing ranges.
	Reduced rain and changes in the seasonal distribution of rainfall may alter timing of low flows in streams and rivers, which in turn would have consequences for aquatic ecosystems. Changes in rainfall patterns and air temperature may affect water temperatures, potentially affecting cold-water aquatic species. Bay Area ecosystems and habitat provide important ecosystem services, such as: carbon storage, enhanced water supply and quality, flood protection, and food and fiber production. Climate change is expected to substantially change several of these services. The region provides substantial aquatic and habitat-related recreational opportunities, including fishing, wildlife viewing, and wine industry tourism (a significant asset to the region) that may be at risk due to climate change effects.
Hydropower	Currently, several agencies in the Region produce or rely on hydropower produced outside of the Region for a portion of their power needs. As the hydropower is produced in the Sierra, there may be changes in the future in the timing and amount of energy produced due to changes in the timing and amount of runoff as a result of climate change. Some hydropower is also produced within the region and could also be affected by changes in the timing and amount of runoff.

Source: 2019 Bay Area Integrated Regional Water Management Plan (BAIRWMP), Table 16-3

SFPUC Climate Change Studies

The SFPUC views assessment of the effects of climate change as an ongoing project requiring regular updating to reflect improvements in climate science, atmospheric/ocean modeling, and human response to the threat of greenhouse gas emissions. Climate change research by the SFPUC began in 2009 and continues to be refined. In its 2012 report "Sensitivity of Upper Tuolumne River Flow to Climate Change Scenarios," the SFPUC assessed the sensitivity of runoff into Hetch Hetchy Reservoir to a range of changes in temperature and precipitation due to climate change. Key conclusions from the report include the following:

- With differing increases in temperature alone, the median annual runoff at Hetch Hetchy would decrease by 0.7-2.1% from present-day conditions by 2040 and by 2.6-10.2% from present-day by 2100. Adding differing decreases in precipitation on top of temperature increases, the median annual runoff at Hetch Hetchy would decrease by 7.6-8.6% from present-day conditions by 2040 and by 24.7-29.4% from present-day conditions by 2100.
- In critically dry years, these reductions in annual runoff at Hetch Hetchy would be significantly greater, with runoff decreasing up to 46.5% from present day conditions by 2100 utilizing the same climate change scenarios.
- In addition to the total change in runoff, there will be a shift in the annual distribution of runoff. Winter and early spring runoff would increase, and late spring and summer runoff would decrease.
- Under all scenarios, snow accumulation would be reduced, and snow would melt earlier in the spring, with significant reductions in maximum peak snow water equivalent under most scenarios.

Currently, the SFPUC is conducting a comprehensive assessment of the potential effects of climate change on water supply using a wide range of plausible increases in temperature and changes in precipitation to address the wide uncertainty in climate projections over the planning horizon 2020 to 2070. There are many uncertain factors such as climate change, changing regulations, water quality, growth and economic cycles that may create vulnerabilities for the Regional Water System's ability to meet levels of service. The uncertainties associated with the degree to which these factors will occur and how much risk they present to the water system is difficult to predict, but nonetheless they need to be considered in SFPUC planning. To address this planning challenge, the project uses a vulnerability-based planning approach to explore a range of future conditions to identify vulnerabilities, assess the risks associated with these vulnerabilities that could lead to developing an adaptation plan that is flexible and robust to a wide range of future outcomes.

Factors Impacting Supply Reliability

Adoption of the 2018 Bay-Delta Plan Amendment

In December 2018, the State Water Resources Control Board (SWRCB) adopted amendments to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan Amendment) to establish water quality objectives to maintain the health of the Bay-Delta ecosystem. The

SWRCB is required by law to regularly review this plan. The adopted Bay-Delta Plan Amendment was developed with the stated goal of increasing salmonid populations in three San Joaquin River tributaries (the Stanislaus, Merced, and Tuolumne Rivers) and the Bay-Delta. The Bay-Delta Plan Amendment requires the release of 30-50% of the "unimpaired flow"[1] on the three tributaries from February through June in every year type. In SFPUC modeling of the new flow standard, it is assumed that the required release is 40% of unimpaired flow.

If the Bay-Delta Plan Amendment is implemented, the SFPUC will be able to meet the projected water demands presented in this UWMP in normal years but would experience supply shortages in single dry years or multiple dry years. Implementation of the Bay-Delta Plan Amendment will require rationing in all single dry years and multiple dry years. The SFPUC has initiated an Alternative Water Supply Planning Program to ensure that San Francisco can meet its Retail and Wholesale Customer water needs, address projected dry years shortages, and limit rationing to a maximum 20% system-wide in accordance with adopted SFPUC policies. This program is in early planning stages and is intended to meet future water supply challenges and vulnerabilities such as environmental flow needs and other regulatory changes; earthquakes, disasters, and emergencies; increases in population and employment; and climate change. As the region faces future challenges – both known and unknown – the SFPUC is considering this suite of diverse non-traditional supplies and leveraging regional partnerships to meet Retail and Wholesale Customer needs through 2045.

The SWRCB has stated that it intends to implement the Bay-Delta Plan Amendment on the Tuolumne River by the year 2022, assuming all required approvals are obtained by that time. Implementation of the Plan Amendment is uncertain for multiple reasons. First, since adoption of the Bay-Delta Plan Amendment, over a dozen lawsuits have been filed in both state and federal courts, challenging the SWRCB's adoption of the Bay-Delta Plan Amendment, including a legal challenge filed by the federal government, at the request of the U.S. Department of Interior, Bureau of Reclamation. This litigation is in the early stages and there have been no dispositive court rulings as of this date.

Second, the Bay-Delta Plan Amendment is not self-implementing and does not automatically allocate responsibility for meeting its new flow requirements to the SFPUC or any other water rights holders. Rather, the Bay-Delta Plan Amendment merely provides a regulatory framework for flow allocation, which must be accomplished by other regulatory and/or adjudicatory proceedings, such as a comprehensive water rights adjudication or, in the case of the Tuolumne River, may be implemented through the water quality certification process set forth in section 401 of the Clean Water Act as part of the Federal Energy Regulatory Commission's licensing proceedings for the Don Pedro and La Grange hydroelectric projects. It is currently unclear when the license amendment process is expected to be completed. This process

[1] "Unimpaired flow represents the natural water production of a river basin, unaltered by upstream diversions, storage, or by export or import of water to or from other watersheds." (Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Dec. 12, 2018) p.17, fn. 14, available at https://www.waterboards.ca.gov/plans_policies/docs/2018wqcp.pdf.)

and the other regulatory and/or adjudicatory proceedings would likely face legal challenges and have lengthy timelines, and quite possibly could result in a different assignment of flow responsibility (and therefore a different water supply impact on the SFPUC).

Third, in recognition of the obstacles in implementation of the Bay-Delta Plan Amendment, the SWRCB Resolution No. 2018-0059 adopting the Bay-Delta Plan Amendment directed staff to help complete a "Delta watershed-wide agreement, including potential flow measures for the Tuolumne River" by March 1, 2019, and to incorporate such agreements as an "alternative" for a future amendment to the Bay-Delta Plan to be presented to the SWRCB "as early as possible after December 1, 2019." In accordance with the SWRCB's instruction, on March 1, 2019, SFPUC, in partnership with other key stakeholders, submitted a proposed project description for the Tuolumne River that could be the basis for a voluntary substitute agreement with the SWRCB ("March 1st Proposed Voluntary Agreement"). On March 26, 2019, the Commission adopted Resolution No. 19-0057 to support the SFPUC's participation in the Voluntary Agreement negotiation process. To date, those negotiations are ongoing under the California Natural Resources Agency and the leadership of the Newsom administration[2].

San José's UWMP analysis on supply reliability assumes implementation of the Bay-Delta Plan Amendment as adopted, which is consistent with SFPUC's analysis of supply availability. Using this analysis results in a "worst case" supply reduction scenario, with supplies to wholesale customers reduced between 40-50% during some multi-year drought periods. These reductions are not adjusted to reflect the Bay-Delta Plan Amendment-related considerations noted above, in addition to other considerations such as SFPUC's implementation of additional water supply projects (further discussed below) and SFPUC's contractual obligations related to supply reliability.

Alternative Water Supply Planning Program

The SFPUC is increasing and accelerating its efforts to acquire additional water supplies and explore other projects that would increase overall water supply resilience through the Alternative Water Supply Planning Program. The drivers for the program include: (1) the adoption of the Bay-Delta Plan Amendment and the resulting potential limitations to RWS supply during dry years, (2) the net supply shortfall following the implementation of WSIP, (3) San Francisco's perpetual obligation to supply 184 MGD to the Wholesale Customers, (4) adopted Level of Service Goals to limit rationing to no more than 20 percent system-wide during droughts, and (5) the potential need to identify water supplies that would be required to offer permanent status to interruptible customers. Developing additional supplies through this program would reduce water supply shortfalls and reduce rationing associated with such shortfalls. The planning priorities guiding the framework of the Alternative Water Supply Planning Program are as follows:

[2] California Natural Resources Agency, "Voluntary Agreements to Improve Habitat and Flow in the Delta and its Watersheds," available at https://files.resources.ca.gov/voluntary-agreements/.

- Offset instream flow needs and meet regulatory requirements
- Meet existing obligations to existing permanent customers
- Make interruptible customers permanent
- Meet increased demands of existing and interruptible customers

In conjunction with these planning priorities, the SFPUC considers how the program fits within the LOS Goals and Objectives related to water supply and sustainability when considering new water supply opportunities. The key LOS Goals and Objectives relevant to this effort can be summarized as:

- Meet dry-year delivery needs while limiting rationing to a maximum of 20 percent system-wide reduction in water service during extended droughts;
- Diversify water supply options during non-drought and drought periods;
- Improve use of new water sources and drought management, including groundwater, recycled water, conservation, and transfers;
- Meet, at a minimum, all current and anticipated legal requirements for protection of fish and wildlife habitat;
- Maintain operational flexibility (although this LOS Goal was not intended explicitly for the addition of new supplies, it is applicate here).

Together, the planning priorities and LOS Goals and Objectives provide a lens through which the SFPUC considers water supply options and opportunities to meet all foreseeable water supply needs.

In addition to the Daly City Recycled Water Expansion project[i], which was a potential project identified in the 2015 UWMP and had committed funding at that time, the SFPUC has taken action to fund the study of potential additional water supply projects. Capital projects under consideration to develop additional water supplies include surface water storage expansion, recycled water expansion, water transfers, desalination, and potable reuse. A more detailed list and descriptions of these efforts are provided below.

The capital projects that are under consideration would be costly and are still in the early feasibility or conceptual planning stages. Because these water supply projects would take 10 to 30 years to implement, and because required environmental permitting negotiations may reduce the amount of water that can be developed, the yield from these projects are not currently incorporated into SFPUC's supply projections. State and federal grants and other financing opportunities would be pursued for eligible projects, to the extent feasible, to offset costs borne by ratepayers.

Daly City Recycled Water Expansion (Regional, Normal- and Dry-Year Supply)

This project can produce up to 3 MGD of tertiary recycled water during the irrigation season (approximately 7 months). On an average annual basis, this is equivalent to 1.25 MGD, or 1,400 acre-feet per year. The project is envisioned to provide recycled water to 13 cemeteries and other smaller irrigation customers, offsetting existing groundwater pumping from the South Westside Groundwater Basin; this

will free up groundwater, enhancing the reliability of the Basin. The project is a regional partnership between the SFPUC and Daly City. The irrigation customers are located largely within California Water Service's (Cal Water's) service area. RWS customers will benefit from the increased reliability of the South Westside Basin for additional drinking water supply during droughts. In this way, this project supports the Groundwater Storage and Recovery (GSR) Project, which is under construction.

ACWD-USD Purified Water Partnership (Regional, Normal- and Dry-Year Supply)

This project could provide a new purified water supply utilizing Union Sanitary District's (USD) treated wastewater. Purified water produced by advanced water treatment at USD could be transmitted to the Quarry Lakes Groundwater Recharge Area to supplement recharge into the Niles Cone Groundwater Basin or put to other uses in Alameda County Water District's (ACWD) service area. With the additional water supply to ACWD, an in-lieu exchange with the SFPUC would result in more water left in the RWS. Additional water supply could also be directly transmitted to the SFPUC through a new intertie between ACWD and the SFPUC.

Crystal Springs Purified Water (Regional, Normal- and Dry-Year Supply)

The Crystal Springs Purified Water (PREP) Project is a purified water project that could provide 6-12 MGD of water supply through reservoir water augmentation at Crystal Springs Reservoir, which is a facility of the RWS. Treated wastewater from Silicon Valley Clean Water (SVCW) and/or the City of San Mateo would go through an advanced water treatment plant to produce purified water that meets state and federal drinking water quality standards. The purified water would then be transmitted 10-20 miles (depending on the alignment) to Crystal Springs Reservoir, blended with regional surface water supplies and treated again at Harry Tracy Water Treatment Plant. Project partners include the SFPUC, BAWSCA, SVCW, CalWater, Redwood City, Foster City, and the City of San Mateo. Partner agencies are contributing financial and staff resources towards the work effort.

Los Vaqueros Reservoir Expansion (Regional, Dry Year Supply)

The Los Vaqueros Reservoir Expansion (LVE) Project is a storage project that will enlarge the existing reservoir located in northeastern Contra Costa County from 160,000 acre-feet to 275,000 acre-feet. While the existing reservoir is owned and operated by the Contra Costa Water District (CCWD), the expansion will have regional benefits and will be managed by a Joint Powers Authority (JPA) that will be set up prior to construction. Meanwhile, CCWD is leading the planning, design and environmental review efforts. CCWD's Board certified the EIS/EIR and approved the LVE Project on May 13, 2020. The additional storage capacity from the LVE Project would provide a dry year water supply benefit to the SFPUC. BAWSCA is working in concert with the SFPUC to support their work effort on the LVE project.

- **Conveyance Alternatives:** The SFPUC is considering two main pathways to move water from storage in a prospective LVE Project to the SFPUC's service area, either directly to RWS facilities or indirectly via an exchange with partner agencies. The SFPUC is evaluating potential alignments for conveyance.

- **Bay Area Regional Reliability Shared Water Access Program (BARR SWAP):** As part of the BARR Partnership, a consortium of 8 Bay Area water utilities (including ACWD, BAWSCA, CCWD, EBMUD, Marin Municipal Water District (MMWD), SFPUC, Valley Water, and Zone 7 Water Agency) are exploring opportunities to move water across the region as efficiently as possible, particularly during times of drought and emergencies. The BARR agencies are proposing two separate pilot projects in 2020-2021 through the Shared Water Access Program (SWAP) to test conveyance pathways and identify potential hurdles to better prepare for sharing water during a future drought or emergency. A strategy report identifying opportunities and considerations will accompany these pilot transfers and will be completed in 2021.

Bay Area Brackish Water Desalination (Regional, Normal- and Dry-Year Supply)

The Bay Area Brackish Water Desalination (Regional Desalination) Project is a partnership between CCWD, the SFPUC, Valley Water, and Zone 7 Water Agency. East Bay Municipal Utilities District (EBMUD) and ACWD may also participate in the project. The project could provide a new drinking water supply to the region by treating brackish water from CCWD's existing Mallard Slough intake in Contra Costa County. While this project has independent utility as a water supply project, for the current planning effort the SFPUC is considering it as a source of supply for storage in LVE. While the allocations remain to be determined among partners, the SFPUC is considering a water supply benefit of between 5 and 15 MGD during drought conditions when combined with storage at LVE.

Calaveras Reservoir Expansion (Regional, Dry Year Supply)

Calaveras Reservoir would be expanded to create 289,000 AF additional capacity to store excess Regional Water System supplies or other source water in wet and normal years. In addition to reservoir enlargement, the project would involve infrastructure to pump water to the reservoir, such as pump stations and transmission facilities.

Groundwater Banking

Groundwater banking in the Modesto Irrigation District (MID) and Turlock Irrigation District (TID) service areas could be used to provide some additional water supply to meet instream releases in dry years reducing water supply impacts to the SFPUC service area. For example, additional surface water could be provided to irrigators in wet years, which would offset the use of groundwater, thereby allowing the groundwater to remain in the basin rather than be consumptively used. The groundwater that remains in the basin can then be used in a subsequent dry year for irrigation, freeing up surface water that would have otherwise been delivered to irrigators to meet instream flow requirements.

A feasibility study of this option is included in the proposed Tuolumne River Voluntary Agreement. Progress on this potential water supply option will depend on the negotiations of the Voluntary Agreement.

Inter-Basin Collaborations

Inter-Basin Collaborations could provide net water supply benefits in dry years by sharing responsibility for in-stream flows in the San Joaquin River and Delta more broadly among several tributary reservoir systems. One mechanism by which this could be accomplished would be to establish a partnership between interests on the Tuolumne River and those on the Stanislaus River, which would allow responsibility for streamflow to be assigned variably based on the annual hydrology. As is the case with Groundwater Banking, feasibility of this option is included in the proposed Tuolumne River Voluntary Agreement.

If all the projects identified through the current planning process can be implemented, there would still be a supply shortfall to meet projected needs. Furthermore, each of the supply options being considered has its own inherent challenges and uncertainties that may affect the SFPUC's ability to implement it.

Given the limited availability of water supply alternatives - unless the supply risks are significantly reduced or our needs change significantly - the SFPUC will continue to plan, develop and implement all project opportunities that can help bridge the anticipated water supply gaps during droughts. In 2019, the SFPUC completed a survey among water and wastewater agencies within the service area to identify additional opportunities for purified water. Such opportunities remain limited, but the SFPUC continues to pursue all possibilities.

Water* System *Improvement Program (WSIP)

The WSIP authorized the SFPUC to undertake a number of water supply projects to meet dry-year demands with no greater than 20% system-wide rationing in any one year. Those projects include the following:

Calaveras Dam Replacement Project

Calaveras Dam is located near a seismically active fault zone and was determined to be seismically vulnerable. To address this vulnerability, the SFPUC constructed a new dam of equal height downstream of the existing dam. Construction on the project occurred between 2011 and July 2019. The SFPUC began impounding water behind the new dam in accordance with California Division of Safety of Dams (DSOD) guidance in the winter of 2018/2019.

Alameda Creek Recapture Project

As a part of the regulatory requirements for future operations of Calaveras Reservoir, the SFPUC must implement bypass and instream flow schedules for Alameda Creek. The Alameda Creek Recapture Project will recapture a portion of the water system yield lost due to the instream flow releases at Calaveras Reservoir or bypassed around the Alameda Creek Diversion Dam and return this yield to the RWS through facilities in the Sunol Valley. Water that naturally infiltrates from Alameda Creek will be recaptured into an existing quarry pond known as SMP (Surface Mining Permit)-24 Pond F2. The project will be designed to allow the recaptured water to be pumped to the Sunol Valley Water Treatment Plant or to San Antonio Reservoir. Construction of this project will occur from spring 2021 to fall 2022.

Lower Crystal Springs Dam Improvements

The Lower Crystal Springs Dam (LCSD) Improvements were substantially completed in November 2011. The joint San Mateo County/SFPUC Bridge Replacement Project to replace the bridge across the dam was completed in January 2019. A WSIP follow up project to modify the LCSD Stilling Basin for fish habitat and upgrade the fish water release and other valves started in April 2019. While the main improvements to the dam have been completed, environmental permitting issues for reservoir operation remain significant. While the reservoir elevation was lowered due to DSOD restrictions, the habitat for the Fountain Thistle, an endangered plant, followed the lowered reservoir elevation. Raising the reservoir elevation now requires that new plant populations be restored incrementally before the reservoir elevation is raised. The result is that it may be several years before pre-project water storage volumes can be restored.

Regional Groundwater Storage and Recovery Project

The Groundwater Storage and Recovery (GSR) Project is a strategic partnership between SFPUC and three San Mateo County agencies – the California Water Service Company (serving South San Francisco and Colma), the City of Daly City, and the City of San Bruno – to conjunctively operate the south Westside Groundwater Basin. The project sustainably manages groundwater and surface water resources in a way that provides supplies during times of drought. During years of normal or heavy rainfall, the project would provide additional surface water to the partner agencies in San Mateo County in lieu of groundwater pumping. Over time, reduced pumping creates water storage through natural recharge of up to 20 billion gallons of new water supply available during dry years.

The project's Final Environmental Impact Report was certified in August 2014, and the project also received Commission approval that month. Phase 1 of this project consists of construction of thirteen well sites and is over 99% complete. Phase 2 of this project consists of completing construction of the well station at the South San Francisco Main site and some carryover work that has not been completed from Phase 1. Phase 2 design work began in December 2019.

2 MGD Dry-year Water Transfer

In 2012, the dry-year transfer was proposed between the Modesto Irrigation District and the SFPUC. Negotiations were terminated because an agreement could not be reached. Subsequently, the SFPUC had discussions with the Oakdale Irrigation District for a one-year transfer agreement with the SFPUC for 2 MGD (2,240 acre-feet). No progress towards agreement on a transfer was made in 2019, but the irrigation districts recognize SFPUC's continued interest and SFPUC will continue to pursue transfers.

In order to achieve its target of meeting at least 80% of its customer demand during droughts with a system demand of 265 MGD, the SFPUC must successfully implement the dry-year water supply projects included in the WSIP. Furthermore, the permitting obligations for the Calaveras Dam Replacement Project and the Lower Crystal Springs Dam Improvements include a combined commitment of 12.8 MGD for instream flows on average. When this is reduced for an assumed Alameda Creek Recapture Project recovery of 9.3 MGD, the net loss of water supply is 3.5 MGD.

Valley Water: Reliability and Constraints

To maintain water supply reliability and flexibility, Valley Water's water supply includes a variety of sources including local groundwater, local surface water, imported surface water from the SWP and CVP, recycled and purified water, and transfers. Current and projected water supply yields are presented in Valley Water's UWMP (Valley Water, 2021). Valley Water has an active conjunctive water management program to optimize the use of groundwater and surface water, and to prevent groundwater overdraft and land subsidence. Additionally, Valley Water has made investments to reduce Santa Clara County's reliance on the Delta and increase regional self-reliance. Additional information on Valley Water's efforts to reduce Delta reliance are included within **Appendix H**. Supplementary information on Valley Water's supply reliability can be found in their UWMP (Valley Water, 2021).

Several factors have the potential to negatively impact reliability, including hydrologic variability, climate change, invasive species, infrastructure failure, regulatory actions as well as institutional, political, and other uncertainties. Hydrologic uncertainties influence the projections of both local and imported water supplies and the anticipated reliability of those supplies. Supply analyses performed by Valley Water are based on the assumption of historical patterns of precipitation. The development of Valley Water projects and programs to meet future needs which take hydrologic variability and climate change into account. Valley Water is conservatively planning for investments by considering severe droughts, such as the 2012-2016 drought, will occur in the future. Projects included in the supply projections include: Transfer-Bethany pipeline (2025); Anderson dam seismic retrofit and potable reuse (2030); Guadalupe, Calero, and Almaden dam seismic retrofits and Pacheco Reservoir Expansion (2035); and an additional 35,000 AF of conservation to reach Valley Water's goal of 109,000 AF by 2040 with a 1992 baseline.

Valley Water uses the Water Evaluation and Planning (WEAP) system model to evaluate reliability under different conditions. This water supply modeling tool takes an integrated approach to water resources planning. The WEAP model is used primarily to simulate Valley Water's water supply system comprised of facilities to recharge the county's groundwater subbasins, local water supply systems including the operation of reservoirs and creeks, treatment and distribution facilities, and raw water conveyance systems. The model also accounts for non-Valley Water sources and distribution of water in the county such as supplies from the SFPUC, recycled water, and local water developed by other agencies such as San Jose Water Company. In essence, the model was formulated to simulate the management of the current and future water resources with the county. In addition, Valley Water groundwater flow models were used to estimate initial groundwater storage and natural groundwater recharge. Analyzing projected water supplies and demands requires establishing many assumptions. These modeling assumptions are summarized in Valley Water's 2020 UWMP (Valley Water, 2021).

Climate Change Impact to Water Supply and Water Quality

Valley Water's ability to provide a reliable, clean water supply is challenged by the potential of warmer temperatures, changing precipitation and runoff patterns, reduced snow pack, and rising sea levels. Valley Water's water supply vulnerabilities to climate change include a decrease in imported water supplies as a result of a potential reduction in snow pack and a shift in the timing of runoff, a decrease in local surface

water supplies as result of reduced precipitation, more frequent and severe droughts, changes in surface water quality associated with changes in flows and temperature, and changes in imported water quality due to salinity intrusion in the Delta. Additional vulnerabilities include more frequency algal blooms, invasive and/or non-native species, and wildfire threats to supply infrastructure. Imported water supplies are subject to hydrologic variability. Storage can help mitigate the impacts of hydrologic variability, as does the development of all-weather supplies.

To address constraints on water supplies and the challenges of an uncertain future and imprecise projections of future conditions and potential impacts on water supplies, Valley Water relies on its long-term planning efforts that continually develop and improve resilient and adaptable water supplies and strategies and consider changing and uncertain conditions.

Constraints on Imported Water Supplies

Much of Valley Water's current water supply comes from hundreds of miles away from natural runoff and releases from statewide reservoirs. This imported water is pumped out of the Delta and brought into the county through the complex infrastructure of the State Water Project (SWP) and Central Valley Project (CVP). Valley Water holds contracts for 100,000 AFY from the SWP and for 152,500 AFY from the CVP. The actual amount of water delivered is typically less than these contractual amounts and depends on hydrology, conveyance limitations, and environmental regulations.

Future SWP allocations are based on the State Water Project Delivery Capability Report (DCR), a biennial report that DWR issues to assist SWP contractors and local planners in assessing the near and long-term availability of supplies from the SWP. DWR issued its most recent update, the draft 2019 DWR State Water DCR, in August 2020. In this update, DWR provides SWP supply estimates for SWP contractors to use in their planning efforts, including for use in their 2020 UWMPs. The 2019 DCR includes DWR's estimates of SWP water supply availability under both existing (2020) and future conditions (2040). The long-term average allocation reported in the 2019 DCR for the existing conditions study provide appropriate estimate of the SWP water supply availability under current conditions, which Valley Water used as estimated imported supply for 2025.

To evaluate SWP supply availability under future conditions, the 2019 DCR included a model study representing hydrologic and sea level rise conditions in 2040. The future condition study used all of the same model assumptions as the study under existing conditions, but reflected changes expected to occur as a result of climate change. This future scenario did not include any projected changes to regulations and therefore, may overestimate future SWP and CVP deliveries. However, for the long-term planning purposes of this UWMP, the long-term average allocations reported in the future condition study from the 2019 DCR is the only dataset currently available to estimate future SWP water supply availability. This future condition scenario was used to estimate future SWP and CVP supply availability to Valley Water from 2030 to 2045.Valley Water's SWP and CVP water supplies are also subject to a number of additional constraints including operations and regulatory requirements to manage flows and protect fisheries and water quality in the Delta, seismic threats to the levee system, and water quality variations (including algal blooms). Water quality variations are addressed at Valley Water's drinking water treatment plants, by

blending sources, and/or switching sources. Algae and disinfection byproduct precursors can be especially challenging during drought conditions. In addition to developing local supplies, securing, and optimizing Valley Water's existing local water system, and expanding water conservation, Valley Water is evaluating the costs and benefits of participating in the California WaterFix as a means of improving imported water reliability.

Constraints on Local Surface Water Supplies

Local surface water supplies are vulnerable to hydrologic variability, with most reservoirs sized for annual operations. In wetter years, Valley Water is challenged to capture available supply due to capacity constraints and flood protection needs. In drier years, Valley Water is challenged to maintain its groundwater recharge program due to regulations and permit conditions that require Valley Water to maintain bypass flows.

Several factors can impact Valley Water's reservoir operations and its use of surface water rights, including meeting reservoir operating rules designed to reduce flood risk, maintaining storage levels for environmental or recreation purposes, dam safety requirements, and managing total Valley Water supplies for reliability. Valley Water regularly exercises its water rights to ensure the availability of this resource into the future. Future average use of local surface water supply is projected to increase over the planning horizon as Valley Water's dams are seismically retrofitted, allowing operating capacity restrictions to be lifted. To increase the seismic stability of Anderson Dam, Valley Water drained Anderson reservoir to Deadpool (3% of capacity) in October 2020, the lowest level that can be reached through the existing outlet tunnel, to prepare for the reconstruction of the existing earthen Anderson Dam. The reconstruction is expected to last about 10 years and will allow Anderson Reservoir to return to its full operating capacity once completed.

Constraints on Groundwater Supplies

Groundwater supply is largely constrained by hydrologic variability and the estimated 548,000 AF of operational storage capacity within the subbasins. The inflows to the groundwater subbasins are constrained by Valley Water's managed aquifer recharge program and natural recharge. Valley Water has about 144,000 AFY of managed recharge capacity, including more than 90 miles of in-stream recharge and 102 off-stream recharge ponds. Maintaining Valley Water's managed recharge program requires ongoing operational planning for the distribution of local and imported water to recharge facilities; maintenance and operation of reservoirs, diversion facilities, distribution systems, and recharge ponds; and the maintenance of water supply contracts, water rights, and relevant environmental clearance. Valley Water's managed recharge program is critical to maintaining groundwater supply, because natural recharge is insufficient to meet groundwater demands. Valley Water is the designated Groundwater Sustainability Agency (GSA) for the Santa Clara and Llagas groundwater subbasins under California's 2014 Sustainable Groundwater Management Act (SGMA) and has a DWR-approved Alternative to a Groundwater Sustainability Plan (GSP) in place for sustainably managing these subbasins.

Constraints on Water Transfers

As discussed in Section 6, Valley Water's Water Master Plan includes dry year options/transfers in critical dry years. The biggest constraints on transfers are transfer capacity in the Delta, water quality, and costs.

Constraints on Recycled Water Supplies

The SBWR Strategic Plan includes 15,000 AFY of retail recycled water deliveries, plus 5,600 AFY of recycled water reserved for Valley Water use until 2027. Valley Water currently has no intention of utilizing this water prior to 2027. Although the SBWR retailer projections for recycled water use exceed the amount projected in the SBWR Strategic Plan, total system capacity exists to meet projections.

Valley Water is pursuing a purified water (potable reuse) project. If implemented, the project may constrain expanded recycled water deliveries. Several technical and legal considerations may impede project development, including potable reuse include brine disposal, public acceptance, permitting, hydrogeologic conditions, and costs. Once the program is implemented the largest challenge will be maximizing use of the available supply during wetter years when storage is full and/or other lower cost supplies are competing for use. These constraints are being addressed as part of the Expedited Purified Water Program.

Basis of Reliability Analysis

Reliability of the SJMWS is determined based upon the reliability of imported water and groundwater production. SJMWS relies upon the information relating to water supply availability and allocations provided by wholesalers and assumes the accuracy of the data for this UWMP. The normal year supply represents the expected supply under average hydrologic conditions, the dry year supply represents the expected supply under the single driest hydrologic year, and the multiple-dry year supply represents the expected supply during a period of five consecutive dry years. The supply projected to be available to SJMWS during different hydrologic conditions is based upon analyses done by each wholesaler; the basis for each wholesaler's analysis follows on subsequent pages (this data is not compatible with DWR Table 7-1).

Table 7-4. (DWR Table 7-1): Basis of Water Year Data (Reliability Assessment)			
X[1]	Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location: Beginning on Page 7-21		
	Quantification of available supplies is provided in this table as either volume only, percent only, or both.		
Year Type	Base Year	Volume Available	% of Average Supply
Average Year			
Single-Dry Year			
Consecutive Dry Years 1st Year			
Consecutive Dry Years 2nd Year			
Consecutive Dry Years 3rd Year			
Consecutive Dry Years 4th Year			
Consecutive Dry Years 5th Year			

Note:
1 Valley Water imported and groundwater sources, as well as recycled water, have been identified to be 100% reliable during dry years; reductions shown in subsequent tables reflect SFPUC reductions under BDP implementation.

SFPUC

The SFPUC's planning model combines a historical record of hydrology from 1920 through 2017 with a current representation of SFPUC RWS infrastructure and operations. Historically, droughts that occurred during 1977 and 1987-1992 resulted in supply shortfalls in which rationing of water supplies was necessary. For their analysis, SFPUC used a hypothetical drought that is more severe than what their RWS has historically experienced, which consists of the 1987-1992 drought followed by an additional 2.5 years of dry conditions from the hydrologic record that include the 1976-1977 drought. SFPUC analyzed these conditions incorporating different wholesale customer demand scenarios, including demands equal to full contractual obligations, and demands equal to the sum of the projected wholesale customer demands.

The adoption of the Bay-Delta Plan Amendment (BDP) may significantly impact the supply available from the RWS. SFPUC recognizes that the BDP has been adopted and that, given that it is now state law, they must plan for a future in which it is fully implemented. Although the State has stated it intends to implement the Bay-Delta Plan Amendment on the Tuolumne River by the year 2022, given the current level of uncertainty, it is assumed for the purposes of the SFPUC's UWMP that the BDP will be fully implemented starting in 2023. SFPUC also acknowledges that the plan is not self-implementing and therefore does not automatically go into effect. SFPUC is currently pursuing a voluntary agreement as well as a lawsuit which would limit implementation of the BDP. With both of these processes occurring on an unknown timeline, SFPUC does not know at this time when the BDP is likely to go into effect. Therefore, a situation in which the BDP is not implemented as adopted also represents a potential supply reliability scenario.

Because of the uncertainty surrounding implementation of the BDP, the SFPUC conducted a water service reliability assessment that includes: (1) a scenario in which the BDP is fully implemented in 2023, and (2)

a scenario that considers the SFPUC system's current situation without the BDP. The two scenarios provide a bookend for the possible future scenarios regarding RWS supplies.

Supply modeling results presented in the text of the SFPUC's UWMP reflect an input of projected demands on the RWS consisting of (1) projected retail demands on the RWS (total San Francisco retail demands minus local groundwater and recycled water supplies), and (2) projected Wholesale Customer purchases. The SFPUC has a Level of Service objective of meeting average annual water demand of 265 MGD from the SFPUC watersheds for retail and Wholesale Customers during non-drought years, as well as a contractual obligation to supply 184 MGD to the Wholesale Customers. Therefore, the SFPUC has also conducted modeling based on a demand of 265 MGD in order to facilitate planning that supports meeting this Level of Service goal and their contractual obligations.

To simplify SJMWS' analysis, this UWMP presents SFPUC supply availability reflecting its analysis of the scenario containing (1) full BDP implementation, and (2) projected Wholesale Customer purchases. As a comparison, the modeling of projected Wholesale Customer purchases without BDP conditions results in no RWS supply reductions until the level of demand projected for 2045; at that level of demand, 10% shortages of RWS supply would occur in years 4 and 5 of the five-consecutive dry year sequence. For its UWMP SJMWS relies solely upon the SFPUC's UWMP supply availability analysis, and has not independently verified the results. SFPUC's UWMP contains further details of the results of their various modeling scenarios, both within their standardized UWMP data tables as well as within the UWMP's appendices.

During development of the 2020 UWMP, SFPUC provided information identifying the total quantity of supply projected to be available to wholesale customers in single and multi-dry years. BAWSCA analyzed SFPUC's information and provided further information identifying the proportion of that supply that would be available to each wholesale customer. The information in SJMWS' analysis includes the proportion of supply identified to be available to San José, as calculated by BAWSCA.

Valley Water

Valley Water's water supply planning model simulates the water supply and demand over 94 years, using the historic hydrologic sequence of 1922 through 2015. The model tracks water resources throughout the county and delivery of water to meet demands according to availability and priority. The single driest year in the 94 model years occurred in 1977, in which 80% of average supplies were available. The five dry-year period used in their analysis corresponds to the extended drought that occurred from 1988-1992, during which 77-83% of average supplies were available in a given year. Valley Water's analysis indicates that their diverse water supply portfolio can meet the County's future demands in normal, single dry, and five consecutive dry years, based on the projected demands and existing and planned supplies. The future supplies reflect the planned and phased implementation of their Water Supply Master Plan (WSMP) projects over time. More information on Valley Water's WSMP is available on their website (https://www.valleywater.org/your-water/water-supply-planning/water-supply-master-plan). The goal of Valley Water is to develop supplies to meet 100% of annual water demand during non-drought years and at least 80% of annual water demand in drought years.

Valley Water's WSMP's "Ensure Sustainability" strategy includes securing existing supplies and infrastructure, optimizing the use of existing supplies and infrastructure, and expanding water recycling and long-term water conservation savings. As part of this strategy, their WSMP estimates that water conservation and recycling, combined, will increase from about 15% of the county's water supply mix to about 26%. Developing these local sources and managing demands reduces reliance on imported water supplies.

Valley Water's analysis of dry-year supplies does not account for the reductions of SFPUC supplies under the BDP as discussed in the prior section. It is assumed in this UWMP that Valley Water's supply availability figures apply to its projected imported and groundwater sources, and that the use of those sources is not increased during dry years to offset any reduction from the SFPUC supply. However, during actual management of reduced supplies during a dry year, SJMWS would coordinate with Valley Water regarding potential availability of additional groundwater in order to mitigate the supply shortage associated with reduced SFPUC supplies.

Recycled Water

Non-potable (recycled) water supplies are projected to be 100% available to meet demands in all water year types; therefore, recycled water is excluded from subsequent reliability tables.

Average Year Supplies and Demands

Table 7-5 (DWR Table 7-2) summarizes the service reliability assessment for a normal water year based on water supply and water demand projections. Projected supplies meet projected demands through 2045, as the supplies of the wholesalers, Valley Water and SFPUC, are available to meet the projected demands for all retailers. The demands presented in **Table 7-5** include projected potable water use within the SJMWS.

Table 7-5. (DWR Table 7-2): Normal Year Supply and Demand Comparison (Potable)

	2025	2030	2035	2040	2045
Supply totals	21,080	24,156	27,343	32,815	33,552
Demand totals	21,080	24,156	27,343	32,815	33,552
Difference	0	0	0	0	0

Note: Table excludes recycled water which is 100% available in all years

Single Dry Year Supplies and Demands

As noted in Valley Water's draft 2020 UWMP, imported and groundwater supplies appear to be sufficient to meet demands during a single dry year through 2045. This assumes that reserves are at healthy levels at the beginning of the year and that the projects and programs identified in their Water Supply and Infrastructure Master Plan are implemented. If reserves are low at the beginning of a single dry year, Valley Water might need to call for water use reductions in combination with using reserves.

Imported supplies from SFPUC during a single dry year are projected to be reduced based on their supply reliability analysis as discussed in this Section. The projected SFPUC supply available to San José in a single-dry year ranges from 54-64% through 2045. Accounting for total water supply management, this represents a total SJMWS potable supply shortage of under 10% in any given year, which will be managed utilizing conservation measures as identified in SJMWS' Water Shortage Contingency Plan.

Table 7-6 (DWR Table 7-3) illustrates the reliability of water supplies to meet projected annual water demands for the SJMWS in a single-dry year.

Table 7-6. (DWR Table 7-3): Single Dry Year Supply and Demand Comparison (Potable)

	2025	2030	2035	2040	2045
Supply totals	19,265	22,330	25,505	30,977	31,257
Demand totals	21,080	24,156	27,342	32,814	33,553
Difference	(1,815)	(1,826)	(1,837)	(1,837)	(2,296)

Note: Table excludes recycled water which is 100% available in all years

Multiple Dry Years Supply and Demand

The greatest challenge to water supply reliability is multiple dry years, such as those that occurred in 1987 through 1992 and in 2012 through 2015. Multiple dry year periods have the potential to deplete supply reserves in, including local groundwater storage.

With existing and planned projects under their Water Supply Master Plan, and under current regulations, Valley Water has identified that their diverse water supplies are sufficient throughout the full five-year drought in all demand years (Valley Water, 2021). Projected supplies available to San José from SFPUC during multi-dry years range from 46%-64% each year through 2045. Based on cumulative available water supplies, this represents a total SJMWS potable supply shortage between approximately 5-10% during a given multi-dry year, which will be managed utilizing conservation measures as identified in SJMWS' Water Shortage Contingency Plan. **Table 7-7** (DWR Table 7-4) presents the projected multiple-dry year water supply and demand assessment for the SJMWS.

In summary, as mentioned earlier, to help bridge the gap between supplies and demands during a multi-year drought, Valley Water would likely implement a combination of calls for countywide short-term water use reductions, use of reserves, and obtaining additional supplement supplies through transfers and/or exchanges. The actual mix of these options would be determined through Valley Water's annual operations planning process. In the first year of drought, Valley Water would most likely rely on available reserves. In subsequent years, as reserves are depleted, Valley Water would need to rely more on short-term water use reductions and supplemental supplies. As possible and necessary, SJMWS would coordinate regularly with Valley Water during any dry period to utilize supplies which are most readily available, while preserving and/or limiting use of other supplies.

Table 7-7. (DWR Table 7-4): Multiple Dry Years Supply and Demand Comparison (Potable)					
		2025	2030	2035	2040
First Year	Supply Totals	19,265	22,330	25,505	30,977
	Demand Totals	21,080	24,156	27,342	32,814
	Difference	(1,815)	(1,826)	(1,837)	(1,837)
Second Year	Supply Totals	19,421	22,508	26,140	30,666
	Demand Totals	21,695	24,793	28,437	32,962
	Difference	(2,274)	(2,285)	(2,297)	(2,296)
Third Year	Supply Totals	20,036	23,145	27,235	30,813
	Demand Totals	22,310	25,431	29,531	33,110
	Difference	(2,274)	(2,286)	(2,296)	(2,297)
Fourth Year	Supply Totals	20,652	23,783	28,329	30,636
	Demand totals	22,926	26,068	30,626	33,258
	Difference	(2,274)	(2,285)	(2,297)	(2,622)
Fifth Year	Supply Totals	21,267	24,420	29,200	30,784
	Demand Totals	23,541	26,705	31,720	33,405
	Difference	(2,274)	(2,285)	(2,520)	(2,621)

Notes:
1 Supply Totals include projected supplies available from SFPUC and Valley Water (which includes groundwater) during five-year shortages ranging from 2025-2030 through 2040-2045.
2 Table excludes recycled water which is 100% available in all years

Drought Risk Assessment

The City uses a combination of groundwater and imported water from its two wholesalers, Valley Water and SFPUC, along with recycled water, to meet customer water demands. Historically, the City has successfully implemented its Water Shortage Contingency Plan during periods of drought and/or extended dry periods including the recent drought in 2012 through 2015, such that supply availability was successfully managed. **Table 7-8** (DWR Table 7-5) below shows a comparison of the total available water supplies available to the City versus the gross water use for a drought beginning in 2021 and lasting for five consecutive years. Consistent with the multiple dry year scenario described above, the analysis shows that it is necessary to implement the Water Shortage Contingency Plan (WSCP) response actions to reduce water demands to offset a water supply shortfall starting in 2023, coinciding with assumed implementation of the Bay-Delta Plan Amendment affecting SFPUC's supply availability. Recycled water supplies are excluded from **Table 7-8**, such that **Table 7-8** represents potable water use reductions as identified within the WSCP.

Table 7-8. (DWR Table 7-5): Five-Year Drought Risk Assessment Tables (Potable)

2021	Total
Gross Water Use	18,253
Total Supplies	18,253
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	0
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0

2022	Total
Gross Water Use [Use Worksheet]	18,960
Total Supplies [Supply Worksheet]	18,960
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	0
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0

2023	Total
Gross Water Use [Use Worksheet]	19,666
Total Supplies [Supply Worksheet]	17,361
Surplus/Shortfall w/o WSCP Action	(2,305)
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	2,305
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	12%

2024	Total
Gross Water Use [Use Worksheet]	20,373
Total Supplies [Supply Worksheet]	18,038
Surplus/Shortfall w/o WSCP Action	(2,335)
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	2,335
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	11%

2025	Total
Gross Water Use [Use Worksheet]	21,080
Total Supplies [Supply Worksheet]	18,716
Surplus/Shortfall w/o WSCP Action	(2,364)
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	2,364
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	11%

Note: Recycled water supplies are projected to be 100% available in all years. Recycled water is excluded from this table, such that this table would represent the required water use reductions associated with potable water use.

Past and Current Water Conservation Programs and Strategies

As population and economic growth increases, water conservation is a key strategy towards the vision of San José as a thriving, environmentally sustainable city. San José has updated its Water Shortage Contingency Plan, which will provide the direction to manage this finite resource in a way that maintains the quality of life and economic viability in San José. There are multiple drivers for the City to implement water conservation efforts, including for water supply reliability and sustainability. Provided below is a description of City's water conservation efforts.

Past Conservation Programs

Prior to the mid-1990s, the City conducted indoor and outdoor water conservation programs, primarily in response to the drought of 1987 – 1992 and flow reduction requirements in the wastewater discharge permit for the RWF. Conservation measures included rebates for Ultra Low Flush Toilets and front-loading washing machines.

Since the mid-1990s, the City's water conservation efforts focused on conservation strategies such as toilet retrofits, washing machine rebates, water use audits, and other residential and commercial conservation programs to reduce indoor water use.

Current Programs and Strategies

Since 1998 the City and Valley Water have signed a cost sharing agreement in which the two agencies financially support each other's water conservation programs. In recent years, the cost sharing agreement has reduced the required number of City full-time employees (FTEs) devoted to conservation and allowed the City to capitalize on large-scale program efficiencies at the County and state levels. The City cost-shares in programs administered by Valley Water and receives funding from Valley Water for programs the City administers.

Another conservation strategy has been the implementation of Best Management Practice (BMPs) measures for water conservation as defined by the California Urban Water Conservation Council, of which the City is a signatory member. These BMPs are listed in Section 8 of the UWMP. Implementation of these BMPs is now a requirement for agencies applying for grant funds from the DWR.

City staff also reviews development plans that come through the City's Planning Department for water conservation opportunities. However, some identified conservation opportunities, such as design modifications beyond current standards, are not mandatory.

The City has also enacted ordinances for periods of water shortages. Chapter 15 of the City's Municipal Code includes short-term measures to be implemented (for water use reductions of 10% to 40%) if a water shortage is declared by the City Council.

Measures include, but are not limited to, landscape irrigation restrictions, public noticing and outreach, and restrictions on filling of pools, spas, and fountains. These measures supplement ongoing water conservation programs and water waste prevention ordinances.

The SFPUC has also used Drought Public Education and Outreach measures to launch drought campaign and conservation measures. Provided below is a description of that effort.

In response to prolonged drought conditions, on January 31, 2014 the SFPUC asked its retail and wholesale customers to voluntarily reduce system-wide water consumption by 10 percent. That summer, BAWSCA, in partnership with the SFPUC, launched a regional drought education campaign to heighten awareness and encourage water conservation. The regional campaign drew upon the SFPUC's "Water Conservation is Smart and Sexy" citywide campaign. The regional campaign appeared in the form of billboards, BART station ads, movie theater ads, and online video advertisements.

Following Governor Brown's Drought Executive Order on April 1, 2015 and conservation regulations mandating a statewide 25% reduction in potable urban water use, the SFPUC continued its call for a system-wide 10% reduction in water use. The SFPUC and BAWSCA partnered again to launch a new drought campaign for the summer of 2015 to remind customers to keep up their water conservation efforts, focusing in particular on outdoor water savings. Regional messaging was included in the form of billboards, BART station ads, television ads, newspaper ads, and a video campaign.

Together with wholesaler activities and coordination, the City uses water management tools and options that are being implemented, or are planned for implementation, that maximize the use of local water resources and minimize the need to import water from other regions. The City utilizes actions such as increased implementation of demand management measures, increased use of recycled water, enhanced groundwater management, and improvements in regional water management and coordination with BAWSCA and Valley Water to ensure water supplies for the SJMWS.

8. WATER SHORTAGE CONTINGENCY PLAN

Water Code Section 10632(a) requires that the UWMP address a water shortage through a Water Shortage Contingency Plan (WSCP). The City's WSCP is included as **Appendix I**. The 2020 Guidebook (Appendix F, UWMP checklist) requires the following:

#55. Provide a water shortage contingency plan (WSCP) with specified elements below. 10632(a).

#56. Provide the analysis of water supply reliability (from Chapter 7 of Guidebook) in the WSCP. 10632(a)(1).

#57. Describe reevaluation and improvement procedures for monitoring and evaluation the water shortage contingency plan to ensure risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented. 10632(a)(10).

#58. Provide the written decision-making process and other methods that the supplier will use each year to determine its water reliability. 10632(a)(2)(A).

#59. 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. 10632(a)(2)(B).

#60. 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. 10632(a)(3)(A).

#61. Suppliers with an existing water shortage contingency plan that uses different water shortage levels must cross reference their categories with the six standard categories. 10632(a)(3)(B).

#62. Suppliers with water shortage contingency plans that align with the defined shortage levels must specify locally appropriate supply augmentation actions. 10632(a)(4)(A).

#63. Specify locally appropriate demand reduction actions to adequately respond to shortages. 10632(a)(4)(B).

#64. Specify locally appropriate operational changes. 10632(a)(4)(C).

#65. Specify additional mandatory prohibitions against specific water use practices that are in addition to state-mandated prohibitions are appropriate to local conditions. 10632(a)(4)(D).

#66. Estimate the extent to which the gap between supplies and demand will be reduced by implementation of the action. 10632(a)(4)(E).

#67. The plan shall include a seismic risk assessment and mitigation plan. 10632.5.

#68. Suppliers must describe that they will inform customers, the public and others regarding any current or predicted water shortages. 10632(a)(5)(A).

#69. 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. 10632(a)(5)(B) and 10632(a)(5)(C).

#70. Retail supplier must describe how it will ensure compliance with and enforce provisions of the WSCP. 10632(a)(6).

#71. Describe the legal authority that empowers the supplier to enforce shortage response actions. 10632(a)(7)(A).

#72. Provide a statement that the supplier will declare a water shortage emergency Water Code Chapter 3. 10632(a)(7)(B).

#73. 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. 10632(a)(7)(C).

#74. Describe the potential revenue reductions and expense increases associated with activated shortage response actions. 10632(a)(8)(A).

#75. Provide a description of mitigation actions needed to address revenue reductions and expense increases associated with activated shortage response actions. 10632(a)(8)(B).

#76. Retail suppliers must describe the cost of compliance with Water Code Chapter 3.3: Excessive Residential Water Use During Drought. 10632(a)(8)(C).

#77. 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. 10632(a)(9).

#78. Analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas. 10632(b).

#79. 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. 10635(c).

#80. Make available the Water Shortage Contingency Plan to customers and any city or county where it provides water within 30 after adopted the plan. 10632(c).

9. DEMAND MANAGEMENT MEASURES

The evaluation of Demand Management Measures (DMMs) occupies a significant portion of the Act. Section 10631 requires the following (items are from the 2020 Guidebook: Appendix F, UWMP checklist):

#81. 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. 10631(e)(1)

The goal of this section is to provide a comprehensive description of the water conservation programs that SJMWS is currently implementing, and plans to implement, in order to meet its urban water use targets. The Water Code section addressing DMMs was significantly modified in 2014. Retail agencies are required to report six general DMMs (water waste prevention ordinances, metering, conservation pricing, public education and outreach, programs to manage distribution system real loss, water conservation program coordination staff) and an "other" category of DMMs, instead of 14 specific measures previously included in the Water Code. This Section presents a comprehensive description of the City's past, current, and future water conservation activities for the SJMWS in compliance with the above listed section of the Water Code.

Each DMM is discussed below including the following details:

- Nature – Description of the DMM program
- Extent – Quantification of the implementation of the DMM (e.g., the number of customers who have used the toilet rebate program, the number of large landscape accounts that have been assigned a water budget, or the number of school presentations). In addition, extent includes a description of the methods used to estimate the expected water savings from DMMs, or the agency's implementation plan for a particular DMM.

Demand Management Measures by Valley Water

Valley Water is the wholesaler to SJMWS, and the two agencies have a strong partnership to plan the future water supply and encourage water conservation in the SJMWS's service area and the rest of the county. With regard to demand management, Valley Water provides resources for public outreach and landscape programs that are targeted to improve irrigation efficiency. These county-wide efforts benefit the SJMWS and their demand management goals.

Public Outreach

Valley Water operates several programs targeting public outreach and education in Santa Clara County. The wholesaler engages the community through a variety of print and digital advertisement campaigns, community partnerships, award-winning volunteer programs, and education programs. Valley Water's public outreach includes the annual landscape summit, nursery program, watershed approach to landscaping guide, demonstration gardens, various workshops, Bay Area Qualified Water Efficient Landscaper Training, Going Native Garden Tours, and other community events.

Valley Water also provides public outreach to students within the SJMWS service area through classroom presentations, large school assemblies, which includes water career education. Additional students attend field trips to one of their water treatment plants, as well as the San José/Santa Clara Regional Wastewater Facility.

Landscape Programs

Valley Water has made significant investments to reduce countywide water demands through landscape programs. A summary of Valley Water's landscape programs between FY2015-16 through FY 2019-20 is given in **Table 9-1** (Valley Water, 2021. Table 9-4). Water savings from conservation and stormwater capture were about 75,000 AF in 2020. From July 2015 to June 2020, over $14.3 million dollars was rebated for approximately 8.3 million square feet of landscape conversion. Countywide through June 2020, Valley Water has rebated for over 12.7 million square feet of landscape conversion. Valley Water plans to continue to offer this rebate in the future to help reach the region's long-term water conservation goals. In January of 2019, Valley Water added Rainwater Capture Rebates to the Landscape Rebate Program. Customers can now receive rebates for the installation of rain barrels, cisterns, and rain gardens. Since the start of the Rainwater Capture Rebates, rainwater has been diverted from nearly 20,000 square feet of roof area into qualifying rain gardens, 165 rain barrels have been installed, and cisterns with a total combined capacity of over 33,000 gallons have received a rebate. FY2018-19 and FY2019-20 combined indicate that over 48,000 irrigation equipment pieces have been upgraded compared to the pre-drought FY2011-12 and FY2012-13 combined numbers of 8,236 – an increase of more than a 500%.

Additionally, nearly 4,000 Weather-Based Irrigation Controllers (WBICs) have been installed during FY15-FY20. Sometimes referred to as "smart controllers," WBICs utilize the principles of evapotranspiration or "ETo" to automatically calculate a site-specific irrigation schedule based on several factors, including plants and soil type. The controller then adjusts the irrigation schedule as local weather changes, saving up to 20% of irrigation water use when used properly. Valley Water plans to continue to offer rebates for WBICs in the future in order to reach the region's long-term water conservation goals.

Demand Management Measures by SJMWS

SJMWS is committed to water conservation and reducing demand on water supplies. SJMWS and Valley Water have a cost-share agreement for rebates and the WaterSmart Home Water Report program. The following programs and actions have been implemented by SJMWS to promote the efficient use of water, some in partnership with Valley Water through the cost-share agreement.

Water Waste Prevention Ordinance

In addition to the water shortage conditions specified by various levels of water supply scenarios, the City has implemented a list of conservation actions in the San José Municipal Code Chapter 15.10 that are in effect at all times to prohibit water waste. The code specifically prohibits certain water wasting uses, limits others, creates guidelines for plumbing fixtures in certain industries, and encourages water conservation.

Table 9-1. Valley Water Landscape Programs		
Landscape Programs	Last 5 Years	To Date
Large Landscape Surveys	162	1,816
Large Landscape Program[1]	2,213	3,000
Turf Conversion (square feet) [2]	8,629,926	12,975,063
Irrigation Equipment[3]	313,010	362,160
Weather Based Irrigation Controllers (WBIC)[4]	3,960	6,726
In-Line Drip Conversion (square feet)	166,461	166,461
Rain Barrels (number of units)	110	110
Cisterns (gallons)	32,745	32,745
Rain Gardens (square footage of roof area diverted)	12,389	12,389
Landscape Maintenance Program	715	715
Total Participation[5]	320,170	374,527

Notes:
1 Represents total active sites in program: "Last 5 Years" shows number of sites added over indicated period, and "To Date" shows total active sites.
2 Includes pilot programs and partnership with Our City Forest; square footage estimated up to 2011
3 Excludes WBICs
4 Includes pilot programs and participation from residential, commercial, industrial, and institutional sites
5 Total excludes square footage from turf conversion, in-line drip conversion, rain gardens, and total gallons from cisterns

The San José Municipal Code Chapter 15.10 includes the following requirements:

- No irrigating landscapes between 10 am and 8 pm, unless using a bucket, hand-carried container, or a hose with a shut-off nozzle (15.10.290A)
- Sprinklers cannot run more than 15 minutes per station per day (15.10.290B)
- No excessive water runoff is allowed (15.10.220A & B)
- Leaking or broken water pipes, irrigation systems, and faucets must have repairs initiated within five working days and repaired as soon as practical (15.10.210 A & B)
- No cleaning of structures or paved surfaces with a hose without a positive shut-off nozzle (15.10.240)
- No cleaning of vehicles with a hose without a positive shut-off nozzle (15.10.250)
- Commercial car washes must use water recycling equipment, a bucket and hand-washing, or a hose with positive shut-off nozzle (15.10.255A,B,C)
- No serving water in food service establishments unless requested by the customer (15.10.230A)
- Restaurants that use pre-rinse spray valves must use ones that are low-flow (15.10.230B)
- Hotels/motels must provide guests the option to decline daily linen washing (15.10.235)
- Potable water cannot be used for building or construction purposes, such as dust control, without written exception by City (15.10.260)
- Water cannot be used from a hydrant without prior City approval (15.10.270)
- Potable water cannot be used for irrigation purposes where a recycled water service is currently plumbed to the site (15.10.295)

These actions are enforced and violations are handled by the City's Code Enforcement Division. There have been no violations recorded in the past five years due to robust public outreach with customers and coordination with Code Enforcement and Valley Water. To minimize violations SJMWS continues to provide outreach to customers to ensure they are aware of these regulations. There have been 421 water waste complaints logged by SJMWS staff from 2016-2020.

Metering

On a bi-monthly basis, SJMWS reads meters and bills all of its potable water and recycled water customers by volume of use. All water use is metered with the exception of fire services. The San José Municipal Code requires the installation of dedicated irrigation meters to certain customers. SJMWS offers a sub-meter rebate, in partnership with Valley Water.

SJMWS uses Automatic Meter Reading (AMR) for all customer meters. AMR meters are able to detect potential leaks and have allowed SJMWS to contact over 3,000 customers in the past five years to alert them of potential leaks. SJMWS is currently piloting various Advanced Metering Infrastructure (AMI) technologies. This AMI Pilot program will assist in determining the appropriate technology for SJMWS customers. Complete AMI implementation will increase SJMWS' ability to address leak detection and customer conservation efforts.

SJMWS has an ongoing meter replacement program. Aging meters are replaced to ensure accurate and precise readings. Between 2015-2017, SJMWS replaced over 12,000 meters as part of a focused Meter Replacement Project.

Conservation Pricing

SJMWS does not currently have a conservation pricing structure. All customers pay a flat rate per unit of water based on the location of the residence or business.

Public Education and Outreach

SJMWS engages in outreach to customers in the form of social media posts, digital advertisements, radio advertisements, print newspaper advertisements, bill inserts, bill messages, video advertisements at the local Department of Motor Vehicles office, and public notifications. In addition, SJMWS partners with Valley Water for consistent messaging throughout Santa Clara County, including promoting workshops, webinars, infrastructure tours, and their school education program. SJMWS provides outreach materials for department-wide information booths at fairs and public events.

SJMWS provides customers with online tools: all single-family residential customers are eligible to receive Home Water Reports and commercial customers may be eligible for Waterfluence.com, an online tool to assist commercial sites with specific irrigation efficiency recommendations.

Advertisements

Public outreach is crucial to SJMWS for water conservation efforts. In 2016, during the peak of the drought, the City increased the annual outreach budget by $50,000. One of the main tools utilized is advertisements and includes:

- More than 50 social media posts since 2016 on the SJMWS Twitter and Facebook pages with topics including watering hours, fix leaks, water audits by Valley Water, energy conservation, food choices, tree watering tips, and xeriscaping. Each post had approximately 32,000 views on Facebook and 59,000 on Twitter. An example social media post is included in **Appendix K**.
- More than 10 digital San José Mercury News advertisements were done in the past five years with information about the water campaigns: "Great Job," "20 Percent," and "Way of Life," and San José water use rules. These ads were distributed all over San José zip codes and received 183,360 views. An example is included in **Appendix K**. The same messages were digitally advertised via Google AdWords and had approximately 23,900 impressions.
- In 2016, the City of San José and Environmental Services Department's website homepages contained banners conveying that the water conservation goal was 20 percent.
- Since 2016, more than 10 radio advertisements were aired on a Spanish radio station, KZSF-La Kaliente, and a Vietnamese radio station, VT News, to and provide information about the water campaigns: "Great Job," "20 Percent," and "Way of Life," and San José water use rules. VT News reaches approximately 200,000 people in the Bay Area.
- In the past five years, more than 10 print newspaper advertisements have been posted in the Evergreen Times with information about the water campaigns: "Great Job," "20 Percent," and "Way of Life," and San José water use rules. This newspaper is distributed in the SJMWS service area. An example advertisement is included in **Appendix K**.
- Bill inserts contained messages about the Landscape Conversion Rebate Program. The bill inserts were distributed within the SJMWS service area and reached approximately 26,500 consumers. An example bill insert is included in **Appendix K**.
- During the drought, messages about watering hours, fixing leaks, and water audits by Valley Water were printed on water bills distributed to SJMWS customers.
- Over 5 video advertisements were on display at local the Department of Motor Vehicles office(s) between 2016 and 2020.
- Public notifications via press releases were distributed citywide through the local news media outlets.
- Approximately 600,000 WaterSmart Home Water Reports were sent out over the past five years. Each residential customer receives 6 reports per year as part of the Residential Bill Comparison Program.

Events

SJMWS provides water conservation outreach materials for department-wide information booths at fairs and public events, such as Christmas in the Park and Environmental Services Department events. Approximately 600,000 people were reached through these events.

WaterSmart

In 2015, the City began offering single-family residential customers Home Water Reports via WaterSmart. From 2015 through 2020, the WaterSmart treatment group saved over 442 million gallons when compared to the control group. SJMWS also tracks and sends targeted alerts to customers with high usage via WaterSmart.

Programs to Assess and Manage Distribution System Real Loss

Water loss occurs due to infrastructure breaks and leaks, flushing fire hydrants, metering accuracy, and other small unmetered releases due to maintenance procedures. SJMWS' operations and maintenance program includes hydrant maintenance, leak investigations, scheduled replacement of aging infrastructure, and AWWA Water Audit water losses tracking. Hydrant maintenance occurs monthly and about 1,100 hydrants are maintained each year. Leak investigation are conducted automatically by the AMR meters and notify customers of potential leaks. Over 3,000 customers have received potential leak notifications in the past 5 years. Aging infrastructure maintenance and replacements are completed on pipelines, pump stations, and reservoirs, as included in SJMWS' Capital Improvement Program. The AWWA Water Audit allows SJMWS to quantify losses and make more targeted maintenance decisions.

Water Conservation Program Coordination and Staffing Support

SJMWS established the position of Water Conservation Coordinator as early as 1995. The current Water Conservation Coordinator is:

Name: Pedro Hernandez
Title: Supervising Environmental Services Specialist
Address: 3025 Tuers Rd., San José, CA 95121
Phone: (408) 277-3671
Email: pedro.hernandez@sanjoseca.gov

There are two full-time staff members in the Water Conservation Program, with additional support provided by other staff as needed. The duties of these staff members focus primarily on ongoing programs to encourage water wise actions within the community. The FY2020-21 water conservation budget is approximately $800,000 and is funded from water rates and cost-share agreements.

Other Demand Management Measures

Rebates and Retrofits

SJMWS offers giveaways (aerators, showerheads, brochures, etc.) and the City offers tankless water heater rebates. Additional rebates are available to customers through a partnership with Valley Water. Through this partnership, SJMWS offers rebates for commercial high-efficiency toilets and commercial high-efficiency single load clothes washing machines, landscape conversions, greywater systems, rain barrels, and irrigation equipment upgrades. Through the Valley Water Rebate Program, 1,381 Commercial High-Efficiency Toilets were replaced in the SJMWS service area since 2016. Projected total annual water savings from toilet retrofits at full implementation are 20 gpcd each or 30 AFY for rebates issued (2016 through 2020), both in water demand and wastewater generation. In addition, over 116,000 square feet of turf was removed and over 30 irrigation hardware rebates were issued to SJMWS customers between 2016-2020.

Landscape

In the last five years, approximately 200 landscape surveys or water audits have been conducted by Valley Water within the SJMWS service area. WaterSmart Home Water Reports illustrate a residential customer's water usage and includes outdoor water conservation tips. The Waterfluence online platform is offered to commercial customers with a dedicated irrigation meter and creates a site-specific water usage estimate, allowing customers to track usage.

Residential Surveys

SJMWS customers are offered free residential surveys through a partnership with Valley Water. The survey involves assisting customers with leak detection and tips for conserving water, and may include water efficiency suggestions and/or inspection, and provision of showerheads and faucet aerators that meet current Water Sense specifications. The primary focus is older neighborhoods with pre-1980 plumbing and the second priority is other pre-1992 housing. Houses constructed after 1992 were required by state building codes to utilize water conserving plumbing fixtures. The program is marketed through advertising in bill inserts, bill messages, and newsletters. During the water survey, water conservation staff performs the following:

- Check for leaks, including toilets, faucets, and meter check
- Check showerhead flow rates, aerator flow rates, and offer to replace or recommend replacement, as necessary
- Check toilet flow rates and direct customer to ultra-low flush toilet (ULFT) replacement programs, as necessary, and replace leaking toilet flappers and floats if applicable
- Check irrigation system and timers
- Review or develop customer irrigation schedule
- Evaluate water softener operations and test water hardness to ensure proper settings
- Promote the retrofit program and provide other information on local water resource topics

Surveys require between 30 and 90 minutes. For each dwelling unit, a Water Conservation Assistant completes a customer data form (including number of people per household, number of bathrooms, age of clothes washer and water softener, and approximate landscaped area square footage). These data are used to analyze the customer's water use for both pre- and post-audit conditions, and to refine the program. The results of the residential water survey are provided to the customer with water saving recommendations and specific local information packets prepared as part of the public information program. The individual contacts made during the survey are used to actively promote the other programs and services offered by the Water Conservation Program, including retrofit and rebate programs offered under other BMPs. Both English and Spanish speaking persons conduct the surveys, and both English and Spanish language materials are available. The form used in the survey is included in **Appendix J**.

In the last five years, over 50 single family residential homes and over 10 multi-family residential houses have been conducted either by Valley Water in-person surveys or Valley Water DIY home audit kits.

Implementation over the Past Five Years

Table 9-2 summarizes the extent of SJMWS's various programs over the past five years.

Implementation to Achieve Water Use Targets

Water conservation efforts over the past five years have resulted in numerous landscaping and irrigation changes that will have a long-term reduction in water use. The water demand has continued to remain low and has not rebounded to pre-drought water use. This is in large part due to the public outreach and permanent changes enacted during the drought. For example, turf removals have remained intact, landscape plans continue to keep irrigation efficient, and high-efficiency toilets remain installed. These efforts will be continued and will continue to help decrease water demand; however, future potential gains may be limited.

SJMWS is currently conducting a multivendor AMI Pilot project that reduces water waste and aids with customer conservation efforts. The budget is not yet secured, but funding may be budgeted in the future.

The City and SJMWS continue to assess the need for further demand management. With new regulations forthcoming, there is potential to update the Municipal Code which might include additional water waste provisions. Overall, SJWMS plans to continue its focus on public outreach and education about water conservation efforts, continue its partnership with Valley Water for rebate programs, and add additional policy in order to achieve its water use goals.

Table 9-2. SJMWS Demand Management Measure Implementation			
Program	Unit	TOTAL 2016-2020	Notes
Water Waste Ordinances	In Effect		San José Municipal Code Chapter 15.10
Water Conservation Coordinator	Employees	2	
Social Media Posts	Post	50+	@sjenvironment
Digital Advertisements	Ad	10+	
Radio Advertisements	Ad	10+	
Print Advertisements	Ad	10+	
Video Advertisements (DMV)	Ad	5+	
Flyers/ Bill Inserts	No. Reached	100,000+	
Website	No. Reached	100,000+	www.sanjoseca.gov/waterconservation
Booths at Festivals	No. Attendees	600,000+	ESD booths, Christmas in the Park
Email	Emails	20	Over 10,000 email recipients
Surveys- Residential Single Family[1]	No. Surveys	50+	Valley Water
Surveys- Residential Multi Family[1]	No. Surveys	10+	Valley Water
Residential Bill Comparison	Total HH Reached	600,000	WaterSmart Home Water Report - sent to each residential customer, 6 times per year, for 5 years
High Bill Contact Programs	Total HH Reached	3,000+	Leak Alert outreach (WaterSmart, Customer Service)
Notification of Leaks	Total HH Reached	3,000+	Leak Alert outreach (WaterSmart, Customer Service)
Commercial High-Efficiency Toilets[1]	No. Replaced	1,381	Valley Water Rebates
Landscape Irrigation Hardware Rebate Program[1]	No. Rebates	30+	Valley Water
Turf Removal Program[1]	Sq. Ft. Removed	116,262	Valley Water Rebates - landscape converted
Landscape Water Surveys/Audits[1]	No. Surveys	200	Valley Water in-person surveys + Valley Water DIY home audit kits
Custom Sprinkler Schedule	No. Reached	26,000	San José Municipal Code Chapter 15.10

Notes:
1 This activity is implemented by wholesaler (Valley Water) on behalf of SJMWS

10. PLAN ADOPTION, SUBMITTAL, AND IMPLEMENTATION

This section provides guidance for addressing the Water Code requirements for a public hearing; Plan adoption, submittal, and implementation; and the process for amending the adopted Plan. Section 10 of the 2020 Guidebook (Appendix F, UWMP checklist) requires the following:

#82. Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets. 10608.26(a)

#83. 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. 10621(b)

#84. Each urban water supplier shall update and submit its 2020 plan to the department by July 1, 2021. 10621(d)

#85. 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. 10642

#86. The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water. 10642

#87. Provide supporting documentation that the plan and contingency plan has been adopted as prepared or modified. 10642

#88. Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library. 10644(a)

#89. 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. 10644(a)(1)

#90. The plan, or amendments to the plan, submitted to the department shall be submitted electronically. 10644(a)(2)

#91. 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. 10645(a)

#92. 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. 10645(b)

This section includes specific information on how the UWMP for the City of San José for their SJMWS was prepared and adopted. To satisfy the requirement, this 2020 UWMP includes the water use and planning data for the entire year of 2020 and the data in this UWMP are included on a calendar year basis.

Notice of Public Hearing

The City held a public hearing on June 15, 2021 prior to adopting this UWMP and the WSCP. The public hearing notice and draft UWMP were posted on the City website during the same timeframe as published in the local newspaper, San José Mercury News. The two audiences noticed for the public hearing included the city and county as shown in **Table 10-1** and the public. The public hearing provided an opportunity for the public to provide input to the UWMP before it was adopted. Notice of the public hearing was also sent to all agencies listed in **Table 2-5**.

Table 10-1. Notification to Cities and Counties

City Name	60 Day Notice	Notice of Public Hearing
San José	X	X
County Name	**60 Day Notice**	**Notice of Public Hearing**
Santa Clara	X	X

Notice to Cities and Counties

The following subsections provide description of the two required notices that the City of San José provided to cities and counties. **Table 2-5** lists additional agencies contacted during the preparation of this UWMP.

Notification Requirement – 60 days prior to Review/Adoption Hearing

The City has encouraged agency and community participation in its UWMP development efforts since the first plan was developed in 1985. Pursuant to the requirement in Section 10642 of the Water Code, the City notified the appropriate agencies that the 2020 UWMP was being reviewed and changes were being considered. During February and March, 2021, the City emailed notice to the two wholesale water agencies, SFPUC and Valley Water; water management agencies within and outside its service area including other retail water suppliers that contract with the wholesalers; the regional coordinator, Bay Area Water Supply and Conservation Agency (BAWSCA); and the County of Santa Clara. **Table 2-5** lists the agencies contacted during the preparation of this UWMP. The notifications informed these agencies of the City's intent and that the planning efforts were underway and welcomed any comments or other participation. Follow up with staff from some agencies was conducted to further coordinate and obtain information necessary for the Plan. The goal of coordination was to encourage input and participation during planning.

Notice to the Public

Notices of the public hearing were advertised in the local newspaper and posted on the City website as part of the City Council meeting agenda, and included the time and place of hearing as well as the location where the UWMP and WSCP are available for public inspection. A sample copy of the notice is included in **Appendix D**.

Public Hearing and Adoption

A public hearing of the 2020 UWMP and the WSCP must take place prior to or on the day of adoption by City Council. In conformance with the requirements, the public hearing took place at the same Council meeting as the adoption hearing. The City Council meeting agenda is included in **Appendix D**.

As required by the Water Code, a formal public hearing was held on June 15, 2021, to receive public input on the 2020 UWMP and WSCP. Any written and oral comments were considered at the public hearing. The City Council formally adopted the 2020 UWMP and WSCP on June 15, 2021 prior to its submittal to DWR. Implementation will take place as identified in the plan. The draft adoption resolution is included in **Appendix L**.

Plan Submittal

Submittal to DWR

The 2020 UWMP and WSCP was submitted to DWR within 30 days of adoption and by July 1, 2021. Following submittal, DWR will review the UWMP utilizing the provided checklist (in Appendix F of the 2020 Guidebook) and make a determination as to whether or not the UWMP addresses the requirements of the Water Code. Upon completion of the UWMP review, DWR will issue a letter to the City with the results of the review.

As stated in the 2020 Guidebook, DWR has developed an online submittal tool, WUE data, which was used to submit the 2020 UWMP. The tool accepts completed UWMPs as well as tabular data from all the DWR data tables. The WUE data online submittal tool is located online. The public can view WUEdata portal at https://wuedata.water.ca.gov/.

Submittal to the California State Library, Cities, and County

To satisfy the Water Code Section 10635(b), the City submitted a copy of the adopted 2020 UWMP to the California State Library within 30 days from the date of adoption. The City also submitted a copy of the adopted 2020 UWMP to the cities and Santa Clara County.

Public Availability

The UWMP and WSCP were made available to the public within 30 days of submission to the DWR. The UWMP and WSC are on the City's website at https://www.sanjoseca.gov/your-government/environment/water-utilities/drinking-water.

11. REFERENCES

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ATTACHMENT A

Appendices

Appendix A

California Water Code: Urban Water Management Planning

Appendix A. California Water Code – Urban Water Management Planning

This material is for informational purposes only and not to be used in place of official California Water Code (Water Code).

This document presents updated sections of Water Code as of January 1, 2020, as compiled by DWR staff. The selection focuses on the portions of code directly relevant to preparation of the urban water management plan and contextually relevant to urban water suppliers and the Department of Water Resources (DWR). This includes the Urban Water Management Planning Act and the Sustainable Water Use and Demand Reduction (SB X7-7), and more. Further legislative information is available on the California Legislative Information website at https://leginfo.legislature.ca.gov/.

The following Water Code sections are included in this appendix.

- **Sustainable Water Use and Demand Reduction (SB X7-7) Water Code Division 6, Part 2.55**
    - **Chapter 1. General Declarations and Policy**, Sections 10608 – 10608.8
    - **Chapter 2. Definitions**, Section 10608.12
    - **Chapter 3. Urban Retail Water Suppliers**, Sections 10608.16 – 10608.44
    - **Chapter 4. Agricultural Water Suppliers**, Section 10608.48
    - **Chapter 5. Sustainable Water Management**, Section 10608.50
    - **Chapter 6. Standardized Data Collection**, Section 10608.52
    - **Chapter 7. Funding Provisions**, Sections 10608.56 – 10608.60
    - **Chapter 8. Quantifying Agricultural Water Use Efficiency**, Section 10608.64

- **Urban Water Management Planning Act**
  Water Code Division 6, Part 2.6
    - **Chapter 1. General Declaration and Policy**, Sections 10610 – 10610.4
    - **Chapter 2. Definitions**, Sections 10611 – 10618
    - **Chapter 3. Urban Water Management Plans**
      Article 1. General Provisions, Sections 10620 – 10621
      Article 2. Contents of Plans, Sections 10630 – 10634
      Article 2.5. Water Service Reliability, Section 10635
      Article 3. Adoption and Implementation of Plans, Sections 10640 – 10645
    - **Chapter 4. Miscellaneous Provisions**, Sections 10650 – 10657

PART 2.55. SUSTAINABLE WATER USE AND DEMAND REDUCTION
CHAPTER 1. General Declaration and Policy [10608 – 10608.8]

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 streamflows, 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.

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.

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 (b) 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.

CHAPTER 2. Definitions [10608.12]

10608.12. Unless the context otherwise requires, the following definitions govern the construction of this part:

(a) "Agricultural water supplier" means a water supplier, either publicly or privately owned, providing water to 10,000 or more irrigated acres, excluding recycled water. "Agricultural water supplier" includes a supplier or contractor for water, regardless of the basis of right, that distributes or sells water for ultimate resale to customers. "Agricultural water supplier" does not include the department.

(b) "Base daily per capita water use" means any of the following:

(1) The urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous 10-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.

(2) For an urban retail water supplier that meets at least 10 percent of its 2008 measured retail water demand through recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier, the urban retail water supplier may extend the

calculation described in paragraph (1) up to an additional five years to a maximum of a continuous 15-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.

(3) For the purposes of Section 10608.22, the urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous five-year period ending no earlier than December 31, 2007, and no later than December 31, 2010.

(c) "Baseline commercial, industrial, and institutional water use" means an urban retail water supplier's base daily per capita water use for commercial, industrial, and institutional users.

(d) "CII water use" means water used by commercial water users, industrial water users, institutional water users, and large landscape water users.

(e) "Commercial water user" means a water user that provides or distributes a product or service.

(f) "Compliance daily per capita water use" means the gross water use during the final year of the reporting period, reported in gallons per capita per day.

(g) "Disadvantaged community" means a community with an annual median household income that is less than 80 percent of the statewide annual median household income.

(h) "Gross water use" means the total volume of water, whether treated or untreated, entering the distribution system of an urban retail water supplier, excluding all of the following:

(1) Recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier.

(2) The net volume of water that the urban retail water supplier places into long-term storage.

(3) The volume of water the urban retail water supplier conveys for use by another urban water supplier.

(4) The volume of water delivered for agricultural use, except as otherwise provided in subdivision (f) of Section 10608.24.

(i) "Industrial water user" means a water user that is primarily a

manufacturer or processor of materials as defined by the North American Industry Classification System code sectors 31 to 33, inclusive, or an entity that is a water user primarily engaged in research and development.

(j) "Institutional water user" means 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.

(k) "Interim urban water use target" means the midpoint between the urban retail water supplier's base daily per capita water use and the urban retail water supplier's urban water use target for 2020.

(l) "Large landscape" means a nonresidential landscape as described in the performance measures for CII water use adopted pursuant to Section 10609.10.

(m) "Locally cost effective" means that the present value of the local benefits of implementing an agricultural efficiency water management practice is greater than or equal to the present value of the local cost of implementing that measure.

(n) "Performance measures" means actions to be taken by urban retail water suppliers that will result in increased water use efficiency by CII water users. Performance measures may include, but are not limited to, educating CII water users on best management practices, conducting water use audits, and preparing water management plans. Performance measures do not include process water.

(o) "Potable reuse" means direct potable reuse, indirect potable reuse for groundwater recharge, and reservoir water augmentation as those terms are defined in Section 13561.

(p) "Process water" means water used by industrial water users for producing a product or product content or water used for research and development. Process water includes, but is not limited to, continuous manufacturing processes, and water used for testing, cleaning, and maintaining equipment. Water used to cool machinery or buildings used in the manufacturing process or necessary to maintain product quality or chemical characteristics for product manufacturing or control rooms, data centers, laboratories, clean rooms, and other industrial facility units that

are integral to the manufacturing or research and development process is process water. Water used in the manufacturing process that is necessary for complying with local, state, and federal health and safety laws, and is not incidental water, is process water. Process water does not mean incidental water uses.

(q) "Recycled water" means recycled water, as defined in subdivision (n) of Section 13050.

(r) "Regional water resources management" means sources of supply resulting from watershed-based planning for sustainable local water reliability or any of the following alternative sources of water:

(1) The capture and reuse of stormwater or rainwater.

(2) The use of recycled water.

(3) The desalination of brackish groundwater.

(4) The conjunctive use of surface water and groundwater in a manner that is consistent with the safe yield of the groundwater basin.

(s) "Reporting period" means the years for which an urban retail water supplier reports compliance with the urban water use targets.

(t) "Urban retail water supplier" means a water supplier, either publicly or privately owned, that directly provides potable municipal water to more than 3,000 end users or that supplies more than 3,000 acre-feet of potable water annually at retail for municipal purposes.

(u) "Urban water use objective" means an estimate of aggregate efficient water use for the previous year based on adopted water use efficiency standards and local service area characteristics for that year, as described in Section 10609.20.

(v) "Urban water use target" means the urban retail water supplier's targeted future daily per capita water use.

(w) "Urban wholesale water supplier" means a water supplier, either publicly or privately owned, that provides more than 3,000 acre-feet of water annually at wholesale for potable municipal purposes.

CHAPTER 3. Urban Retail Water Suppliers [10608.16 – 10608.44]

10608.16. (a) The state shall achieve a 20-percent reduction in urban per capita water use in California on or before December 31, 2020.

(1) The state shall make incremental progress towards the state target specified in subdivision (a) by reducing urban per capita water use by at least 10 percent on or before December 31, 2015.

10608.20. (a) (1) Each urban retail water supplier shall develop urban water use targets and an interim urban water use target by July 1, 2011. Urban retail water suppliers may elect to determine and report progress toward achieving these targets on an individual or regional basis, as provided in subdivision (a) of Section 10608.28, and may determine the targets on a fiscal year or calendar year basis.

(2) It is the intent of the Legislature that the urban water use targets described in paragraph (1) cumulatively result in a 20-percent reduction from the baseline daily per capita water use by December 31, 2020.

(b) An urban retail water supplier shall adopt one of the following methods for determining its urban water use target pursuant to subdivision (a):

(1) Eighty percent of the urban retail water supplier's baseline per capita daily water use.

(2) The per capita daily water use that is estimated using the sum of the following performance standards:

(A) For indoor residential water use, 55 gallons per capita daily water use as a provisional standard. Upon completion of the department's 2017 report to the Legislature pursuant to Section 10608.42, this standard may be adjusted by the Legislature by statute.

(B) For landscape irrigated through dedicated or residential meters or connections, water efficiency equivalent to the standards of the Model Water Efficient Landscape Ordinance set forth in Chapter 2.7 (commencing with Section 490) of Division 2 of Title 23 of the California Code of Regulations, as in effect the later of the year of the landscape's installation or 1992. An urban retail

water supplier using the approach specified in this subparagraph shall use satellite imagery, site visits, or other best available technology to develop an accurate estimate of landscaped areas.

(C) For commercial, industrial, and institutional uses, a 10-percent reduction in water use from the baseline commercial, industrial, and institutional water use by 2020.

(3) Ninety-five percent of the applicable state hydrologic region target, as set forth in the state's draft 20x2020 Water Conservation Plan (dated April 30, 2009). If the service area of an urban water supplier includes more than one hydrologic region, the supplier shall apportion its service area to each region based on population or area.

(4) A method that shall be identified and developed by the department, through a public process, and reported to the Legislature no later than December 31, 2010. The method developed by the department shall identify per capita targets that cumulatively result in a statewide 20-percent reduction in urban daily per capita water use by December 31, 2020. In developing urban daily per capita water use targets, the department shall do all of the following:

(A) Consider climatic differences within the state.

(B) Consider population density differences within the state.

(C) Provide flexibility to communities and regions in meeting the targets.

(D) Consider different levels of per capita water use according to plant water needs in different regions.

(E) Consider different levels of commercial, industrial, and institutional water use in different regions of the state.

(F) Avoid placing an undue hardship on communities that have implemented conservation measures or taken actions to keep per capita water use low.

(c) If the department adopts a regulation pursuant to paragraph (4) of

subdivision (b) that results in a requirement that an urban retail water supplier achieve a reduction in daily per capita water use that is greater than 20 percent by December 31, 2020, an urban retail water supplier that adopted the method described in paragraph (4) of subdivision (b) may limit its urban water use target to a reduction of not more than 20 percent by December 31, 2020, by adopting the method described in paragraph (1) of subdivision (b).

(d) The department shall update the method described in paragraph (4) of subdivision (b) and report to the Legislature by December 31, 2014. An urban retail water supplier that adopted the method described in paragraph (4) of subdivision (b) may adopt a new urban daily per capita water use target pursuant to this updated method.

(e) An urban retail water supplier shall include in its urban water management plan due in 2010 pursuant to Part 2.6 (commencing with Section 10610) the 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.

(f) When calculating per capita values for the purposes of this chapter, an urban retail water supplier shall determine population using federal, state, and local population reports and projections.

(g) An urban retail water supplier may update its 2020 urban water use target in its 2015 urban water management plan required pursuant to Part 2.6 (commencing with Section 10610).

(h) (1) The department, through a public process and in consultation with the California Urban Water Conservation Council, shall develop technical methodologies and criteria for the consistent implementation of this part, including, but not limited to, both of the following:

(A) Methodologies for calculating base daily per capita water use, baseline commercial, industrial, and institutional water use, compliance daily per capita water use, gross water use, service area population, indoor residential water use, and landscaped area water use.

(B) Criteria for adjustments pursuant to subdivisions (d) and (e) of Section 10608.24.

(2) The department shall post the methodologies and criteria developed pursuant to this subdivision on its internet website, and make written copies available, by October 1, 2010. An urban retail water supplier shall use the methods developed by the department in compliance with this part.

(i) (1) The department shall adopt regulations for implementation of the provisions relating to process water in accordance with Section 10608.12, subdivision (e) of Section 10608.24, and subdivision (d) of Section 10608.26.

(2) The initial adoption of a regulation authorized by this subdivision is deemed to address an emergency, for purposes of Sections 11346.1 and 11349.6 of the Government Code, and the department is hereby exempted for that purpose from the requirements of subdivision (b) of Section 11346.1 of the Government Code. After the initial adoption of an emergency regulation pursuant to this subdivision, the department shall not request approval from the Office of Administrative Law to readopt the regulation as an emergency regulation pursuant to Section 11346.1 of the Government Code.

(j) (1) An urban retail water supplier is granted an extension to July 1, 2011, for adoption of an urban water management plan pursuant to Part 2.6 (commencing with Section 10610) due in 2010 to allow the use of technical methodologies developed by the department pursuant to paragraph (4) of subdivision (b) and subdivision (h). An urban retail water supplier that adopts an urban water management plan due in 2010 that does not use the methodologies developed by the department pursuant to subdivision (h) shall amend the plan by July 1, 2011, to comply with this part.

(2) An urban wholesale water supplier whose urban water management plan prepared pursuant to Part 2.6 (commencing with Section 10610) was due and not submitted in 2010 is granted an extension to July 1, 2011, to permit coordination between an urban wholesale water

supplier and urban retail water suppliers.

10608.22. Notwithstanding the method adopted by an urban retail water supplier pursuant to Section 10608.20, an urban retail water supplier's per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use as defined in paragraph (3) of subdivision (b) of Section 10608.12. This section does not apply to an urban retail water supplier with a base daily per capita water use at or below 100 gallons per capita per day.

10608.24. (a) Each urban retail water supplier shall meet its interim urban water use target by December 31, 2015.

(b) Each urban retail water supplier shall meet its urban water use target by December 31, 2020.

(c) An urban retail water supplier's compliance daily per capita water use shall be the measure of progress toward achievement of its urban water use target.

(d) (1) When determining compliance daily per capita water use, an urban retail water supplier may consider the following factors:

(A) Differences in evapotranspiration and rainfall in the baseline period compared to the compliance reporting period.

(B) Substantial changes to commercial or industrial water use resulting from increased business output and economic development that have occurred during the reporting period.

(C) Substantial changes to institutional water use resulting from fire suppression services or other extraordinary events, or from new or expanded operations, that have occurred during the reporting period.

(2) If the urban retail water supplier elects to adjust its estimate of compliance daily per capita water use due to one or more of the factors described in paragraph (1), it shall provide the basis for, and data supporting, the adjustment in the report required by Section 10608.40.

(e) When developing the urban water use target pursuant to Section 10608.20, an urban retail water supplier that has a substantial

percentage of industrial water use in its service area may exclude process water from the calculation of gross water use to avoid a disproportionate burden on another customer sector.

(f) (1) An urban retail water supplier that includes agricultural water use in an urban water management plan pursuant to Part 2.6 (commencing with Section 10610) may include the agricultural water use in determining gross water use. An urban retail water supplier that includes agricultural water use in determining gross water use and develops its urban water use target pursuant to paragraph (2) of subdivision (b) of Section 10608.20 shall use a water efficient standard for agricultural irrigation of 100 percent of reference evapotranspiration multiplied by the crop coefficient for irrigated acres.

(2) An urban retail water supplier, that is also an agricultural water supplier, is not subject to the requirements of Chapter 4 (commencing with Section 10608.48), if the agricultural water use is incorporated into its urban water use target pursuant to paragraph (1).

10608.26. (a) In complying with this part, an urban retail water supplier shall conduct at least one public hearing to accomplish all of the following:

(1) Allow community input regarding the urban retail water supplier's implementation plan for complying with this part.

(2) Consider the economic impacts of the urban retail water supplier's implementation plan for complying with this part.

(3) Adopt a method, pursuant to subdivision (b) of Section 10608.20, for determining its urban water use target.

(b) In complying with this part, an urban retail water supplier may meet its urban water use target through efficiency improvements in any combination among its customer sectors. An urban retail water supplier shall avoid placing a disproportionate burden on any customer sector.

(c) For an urban retail water supplier that supplies water to a United States Department of Defense military installation, the urban retail water supplier's implementation plan for complying with this part shall consider the conservation of that military installation under

federal Executive Order 13514.

(d) (1) Any ordinance or resolution adopted by an urban retail water supplier after the effective date of this section shall not require existing customers as of the effective date of this section, to undertake changes in product formulation, operations, or equipment that would reduce process water use, but may provide technical assistance and financial incentives to those customers to implement efficiency measures for process water. This section shall not limit an ordinance or resolution adopted pursuant to a declaration of drought emergency by an urban retail water supplier.

(2) This part shall not be construed or enforced so as to interfere with the requirements of Chapter 4 (commencing with Section 113980) to Chapter 13 (commencing with Section 114380), inclusive, of Part 7 of Division 104 of the Health and Safety Code, or any requirement or standard for the protection of public health, public safety, or worker safety established by federal, state, or local government or recommended by recognized standard setting organizations or trade associations.

10608.28. (a) An urban retail water supplier may meet its urban water use target within its retail service area, or through mutual agreement, by any of the following:

(1) Through an urban wholesale water supplier.

(2) Through a regional agency authorized to plan and implement water conservation, including, but not limited to, an agency established under the Bay Area Water Supply and Conservation Agency Act (Division 31 (commencing with Section 81300)).

(3) Through a regional water management group as defined in Section 10537.

(4) By an integrated regional water management funding area.

(5) By hydrologic region.

(6) Through other appropriate geographic scales for which computation methods have been developed by the

department.

(b) A regional water management group, with the written consent of its member agencies, may undertake any or all planning, reporting, and implementation functions under this chapter for the member agencies that consent to those activities. Any data or reports shall provide information both for the regional water management group and separately for each consenting urban retail water supplier and urban wholesale water supplier.

10608.32. All costs incurred pursuant to this part by a water utility regulated by the Public Utilities Commission may be recoverable in rates subject to review and approval by the Public Utilities Commission, and may be recorded in a memorandum account and reviewed for reasonableness by the Public Utilities Commission.

10608.34. (a) (1) On or before January 1, 2017, the department shall adopt rules for all of the following:

(A) The conduct of standardized water loss audits by urban retail water suppliers in accordance with the method adopted by the American Water Works Association in the third edition of Water Audits and Loss Control Programs, Manual M36 and in the Free Water Audit Software, version 5.0.

(B) The process for validating a water loss audit report prior to submitting the report to the department. For the purposes of this section, "validating" is a process whereby an urban retail water supplier uses a technical expert to confirm the basis of all data entries in the urban retail water supplier's water loss audit report and to appropriately characterize the quality of the reported data. The validation process shall follow the principles and terminology laid out by the American Water Works Association in the third edition of Water Audits and Loss Control Programs, Manual M36 and in the Free Water Audit Software, version 5.0. A validated water loss audit report shall include the name and technical qualifications of the person engaged for validation.

(C) The technical qualifications required of a person to

engage in validation, as described in subparagraph (B).

(D) The certification requirements for a person selected by an urban retail water supplier to provide validation of its own water loss audit report.

(E) The method of submitting a water loss audit report to the department.

(2) The department shall update rules adopted pursuant to paragraph (1) no later than six months after the release of subsequent editions of the American Water Works Association's Water Audits and Loss Control Programs, Manual M36. Except as provided by the department, until the department adopts updated rules pursuant to this paragraph, an urban retail water supplier may rely upon a subsequent edition of the American Water Works Association's Water Audits and Loss Control Programs, Manual M36 or the Free Water Audit Software.

(b) (1) On or before October 1 of each year until October 1, 2023, each urban retail water supplier reporting on a calendar year basis shall submit a completed and validated water loss audit report for the previous calendar year or the previous fiscal year as prescribed by the department pursuant to subdivision (a).

(2) On or before January 1 of each year until January 1, 2024, each urban retail water supplier reporting on a fiscal year basis shall submit a completed and validated water loss audit report for the previous fiscal year as prescribed by the department pursuant to subdivision (a).

(3) On or before January 1, 2024, and on or before January 1 of each year thereafter, each urban retail water supplier shall submit a completed and validated water loss audit report for the previous calendar year or previous fiscal year as part of the report submitted to the department pursuant to subdivision (a) of Section 10609.24 and as prescribed by the department pursuant to subdivision (a).

(4) Water loss audit reports submitted on or before October 1, 2017, may be completed and validated with assistance as described in subdivision (c).

(c) Using funds available for the 2016–17 fiscal year, the board shall contribute up to four hundred thousand dollars ($400,000) towards procuring water loss audit report validation assistance for urban retail water suppliers.

(d) Each water loss audit report submitted to the department shall be accompanied by information, in a form specified by the department, identifying steps taken in the preceding year to increase the validity of data entered into the final audit, reduce the volume of apparent losses, and reduce the volume of real losses.

(e) At least one of the following employees of an urban retail water supplier shall attest to each water loss audit report submitted to the department:

(1) The chief financial officer.

(2) The chief engineer.

(3) The general manager.

(f) The department shall deem incomplete and return to the urban retail water supplier any final water loss audit report found by the department to be incomplete, not validated, unattested, or incongruent with known characteristics of water system operations. A water supplier shall resubmit a completed water loss audit report within 90 days of an audit being returned by the department.

(g) The department shall post all validated water loss audit reports on its internet website in a manner that allows for comparisons across water suppliers. The department shall make the validated water loss audit reports available for public viewing in a timely manner after their receipt.

(h) Using available funds, the department shall provide technical assistance to guide urban retail water suppliers' water loss detection programs, including, but not limited to, metering techniques, pressure management techniques, condition-based assessment techniques for transmission and distribution pipelines, and utilization of portable and permanent water loss detection devices.

(i) No earlier than January 1, 2019, and no later than July 1, 2020, the board shall adopt rules requiring urban retail water suppliers to meet performance standards for the volume of water losses. In

adopting these rules, the board shall employ full life-cycle cost accounting to evaluate the costs of meeting the performance standards. The board may consider establishing a minimum allowable water loss threshold that, if reached and maintained by an urban water supplier, would exempt the urban water supplier from further water loss reduction requirements.

10608.35. (a) The department, in coordination with the board, shall conduct necessary studies and investigations and make a recommendation to the Legislature, by January 1, 2020, on the feasibility of developing and enacting water loss reporting requirements for urban wholesale water suppliers.

(b) The studies and investigations shall include an evaluation of the suitability of applying the processes and requirements of Section 10608.34 to urban wholesale water suppliers.

(c) In conducting necessary studies and investigations and developing its recommendation, the department shall solicit broad public participation from stakeholders and other interested persons.

10608.36. Urban wholesale water suppliers shall include in the urban water management plans required pursuant to Part 2.6 (commencing with Section 10610) an assessment of their present and proposed future measures, programs, and policies to help achieve the water use reductions required by this part.

10608.40. Urban water retail suppliers shall report to the department on their progress in meeting their urban water use targets as part of their urban water management plans submitted pursuant to Section 10631. The data shall be reported using a standardized form developed pursuant to Section 10608.52.

10608.42. (a) The department shall review the 2015 urban water management plans and report to the Legislature by July 1, 2017, on progress towards achieving a 20-percent reduction in urban water use by December 31, 2020. The report shall include recommendations on changes to water efficiency standards or urban water use targets to achieve the 20-percent reduction and to reflect updated efficiency information and technology changes.

(b) A report to be submitted pursuant to subdivision (a) shall be submitted in compliance with Section 9795 of the Government Code.

10608.43. The department, in conjunction with the California Urban Water Conservation Council, by April 1, 2010, shall convene a representative task force consisting of academic experts, urban retail water suppliers, environmental organizations, commercial water users, industrial water users, and institutional water users to develop alternative best management practices for commercial, industrial, and institutional users and an assessment of the potential statewide water use efficiency improvement in the commercial, industrial, and institutional sectors that would result from implementation of these best management practices. The taskforce, in conjunction with the department, shall submit a report to the Legislature by April 1, 2012, that shall include a review of multiple sectors within commercial, industrial, and institutional users and that shall recommend water use efficiency standards for commercial, industrial, and institutional users among various sectors of water use. The report shall include, but not be limited to, the following:

(a) Appropriate metrics for evaluating commercial, industrial, and institutional water use.

(b) Evaluation of water demands for manufacturing processes, goods, and cooling.

(c) Evaluation of public infrastructure necessary for delivery of recycled water to the commercial, industrial, and institutional sectors.

(d) Evaluation of institutional and economic barriers to increased recycled water use within the commercial, industrial, and institutional sectors.

(e) Identification of technical feasibility and cost of the best management practices to achieve more efficient water use statewide in the commercial, industrial, and institutional sectors that is consistent with the public interest and reflects past investments in water use efficiency.

10608.44. Each state agency shall reduce water use at facilities it operates to support urban retail water suppliers in meeting the target identified in

Section 10608.16.

CHAPTER 4. Agricultural Water Suppliers [10608.48]

10608.48. (a) On or before July 31, 2012, an agricultural water supplier shall implement efficient water management practices pursuant to subdivisions (b) and (c).

(b) Agricultural water suppliers shall implement both of the following critical efficient management practices:

(1) Measure the volume of water delivered to customers with sufficient accuracy to comply with subdivision (a) of Section 531.10 and to implement paragraph (2).

(2) Adopt a pricing structure for water customers based at least in part on quantity delivered.

(c) Agricultural water suppliers shall implement additional efficient management practices, including, but not limited to, practices to accomplish all of the following, if the measures are locally cost effective and technically feasible:

(1) Facilitate alternative land use for lands with exceptionally high water duties or whose irrigation contributes to significant problems, including drainage.

(2) Facilitate use of available recycled water that otherwise would not be used beneficially, meets all health and safety criteria, and does not harm crops or soils.

(3) Facilitate the financing of capital improvements for on-farm irrigation systems.

(4) Implement an incentive pricing structure that promotes one or more of the following goals:

(A) More efficient water use at the farm level.

(B) Conjunctive use of groundwater.

(C) Appropriate increase of groundwater recharge.

(D) Reduction in problem drainage.

(E) Improved management of environmental resources.

(F) Effective management of all water sources throughout the year by adjusting seasonal pricing structures based on current conditions.

(5) Expand line or pipe distribution systems, and construct regulatory reservoirs to increase distribution system flexibility and capacity, decrease maintenance, and reduce seepage.

(6) Increase flexibility in water ordering by, and delivery to, water customers within operational limits.

(7) Construct and operate supplier spill and tailwater recovery systems.

(8) Increase planned conjunctive use of surface water and groundwater within the supplier service area.

(9) Automate canal control structures.

(10) Facilitate or promote customer pump testing and evaluation.

(11) Designate a water conservation coordinator who will develop and implement the water management plan and prepare progress reports.

(12) Provide for the availability of water management services to water users. These services may include, but are not limited to, all of the following:

(A) On-farm irrigation and drainage system evaluations.

(B) Normal year and real-time irrigation scheduling and crop evapotranspiration information.

(C) Surface water, groundwater, and drainage water quantity and quality data.

(D) Agricultural water management educational programs and materials for farmers, staff, and the public.

(13) Evaluate the policies of agencies that provide the supplier with water to identify the potential for institutional changes to allow more flexible water deliveries and storage.

(14) Evaluate and improve the efficiencies of the supplier's

pumps.

(d) Agricultural water suppliers shall include in the agricultural water management plans required pursuant to Part 2.8 (commencing with Section 10800) a report on which efficient water management practices have been implemented and are planned to be implemented, an estimate of the water use efficiency improvements that have occurred since the last report, and an estimate of the water use efficiency improvements estimated to occur five and 10 years in the future. If an agricultural water supplier determines that an efficient water management practice is not locally cost effective or technically feasible, the supplier shall submit information documenting that determination.

(e) The department shall require information about the implementation of efficient water management practices to be reported using a standardized form developed pursuant to Section 10608.52. (f) An agricultural water supplier may meet the requirements of subdivisions (d) and (e) by submitting to the department a water conservation plan submitted to the United States Bureau of Reclamation that meets the requirements described in Section 10828.

(f) On or before December 31, 2013, December 31, 2016, and December 31, 2021, the department, in consultation with the board, shall submit to the Legislature a report on the agricultural efficient water management practices that have been implemented and are planned to be implemented and an assessment of the manner in which the implementation of those efficient water management practices has affected and will affect agricultural operations, including estimated water use efficiency improvements, if any.

(g) The department may update the efficient water management practices required pursuant to subdivision (c), in consultation with the Agricultural Water Management Council, the United States Bureau of Reclamation, and the board. All efficient water management practices for agricultural water use pursuant to this chapter shall be adopted or revised by the department only after the department conducts public hearings to allow participation of the diverse geographical areas and interests of the state.

(h) (1) The department shall adopt regulations that provide for a range of options that agricultural water suppliers may use or implement to comply with the measurement requirement in paragraph (1) of subdivision (b).

(2) The initial adoption of a regulation authorized by this subdivision is deemed to address an emergency, for purposes of Sections 11346.1 and 11349.6 of the Government Code, and the department is hereby exempted for that purpose from the requirements of subdivision (b) of Section 11346.1 of the Government Code. After the initial adoption of an emergency regulation pursuant to this subdivision, the department shall not request approval from the Office of Administrative Law to readopt the regulation as an emergency regulation pursuant to Section 11346.1 of the Government Code.

CHAPTER 5. Sustainable Water Management [10608.50]

10608.50. (a) The department, in consultation with the board, shall promote implementation of regional water resources management practices through increased incentives and removal of barriers consistent with state and federal law. Potential changes may include, but are not limited to, all of the following:

(1) Revisions to the requirements for urban and agricultural water management plans.

(2) Revisions to the requirements for integrated regional water management plans.

(3) Revisions to the eligibility for state water management grants and loans.

(4) Revisions to state or local permitting requirements that increase water supply opportunities, but do not weaken water quality protection under state and federal law.

(5) Increased funding for research, feasibility studies, and project construction.

(6) Expanding technical and educational support for local land use and water management agencies.

(b) No later than January 1, 2011, and updated as part of the California Water Plan, the department, in consultation with the board, and with public input, shall propose new statewide targets, or review and update existing statewide targets, for regional water resources management practices, including, but not limited to, recycled water, brackish groundwater desalination, and infiltration and direct use of urban stormwater runoff.

CHAPTER 6. Standardized Data Collection [10608.52]

10608.52. (a) The department, in consultation with the board, the California Bay-Delta Authority or its successor agency, the State Department of Public Health, and the Public Utilities Commission, shall develop a single standardized water use reporting form to meet the water use information needs of each agency, including the needs of urban water suppliers that elect to determine and report progress toward achieving targets on a regional basis as provided in subdivision (a) of Section 10608.28.

(b) At a minimum, the form shall be developed to accommodate information sufficient to assess an urban water supplier's compliance with conservation targets pursuant to Section 10608.24 and an agricultural water supplier's compliance with implementation of efficient water management practices pursuant to subdivision (a) of Section 10608.48. The form shall accommodate reporting by urban water suppliers on an individual or regional basis as provided in subdivision (a) of Section 10608.28.

CHAPTER 7. Funding Provisions [10608.56 – 10608.60]

10608.56. (a) On and after July 1, 2016, an urban retail water supplier is not eligible for a water grant or loan awarded or administered by the state unless the supplier complies with this part.

(b) On and after July 1, 2013, an agricultural water supplier is not eligible for a water grant or loan awarded or administered by the state unless the supplier complies with this part.

(c) Notwithstanding subdivision (a), the department shall determine that an urban retail water supplier is eligible for a water grant or loan even though the supplier has not met the per capita

reductions required pursuant to Section 10608.24, if the urban retail water supplier has submitted to the department for approval a schedule, financing plan, and budget, to be included in the grant or loan agreement, for achieving the per capita reductions. The supplier may request grant or loan funds to achieve the per capita reductions to the extent the request is consistent with the eligibility requirements applicable to the water funds.

(d) Notwithstanding subdivision (b), the department shall determine that an agricultural water supplier is eligible for a water grant or loan even though the supplier is not implementing all of the efficient water management practices described in Section 10608.48, if the agricultural water supplier has submitted to the department for approval a schedule, financing plan, and budget, to be included in the grant or loan agreement, for implementation of the efficient water management practices. The supplier may request grant or loan funds to implement the efficient water management practices to the extent the request is consistent with the eligibility requirements applicable to the water funds.

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

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

10608.60. (a) It is the intent of the Legislature that funds made available by Section 75026 of the Public Resources Code should be expended, consistent with Division 43 (commencing with Section 75001) of the Public

Resources Code and upon appropriation by the Legislature, for grants to implement this part. In the allocation of funding, it is the intent of the Legislature that the department give consideration to disadvantaged communities to assist in implementing the requirements of this part.

(b) It is the intent of the Legislature that funds made available by Section 75041 of the Public Resources Code, should be expended, consistent with Division 43 (commencing with Section 75001) of the Public Resources Code and upon appropriation by the Legislature, for direct expenditures to implement this part.

CHAPTER 8. Quantifying Agricultural Water Use Efficiency [10608.64]

10608.64. The department, in consultation with the Agricultural Water Management Council, academic experts, and other stakeholders, shall develop a methodology for quantifying the efficiency of agricultural water use. Alternatives to be assessed shall include, but not be limited to, determination of efficiency levels based on crop type or irrigation system distribution uniformity. On or before December 31, 2011, the department shall report to the Legislature on a proposed methodology and a plan for implementation. The plan shall include the estimated implementation costs and the types of data needed to support the methodology. Nothing in this section authorizes the department to implement a methodology established pursuant to this section.

PART 2.55. SUSTAINABLE WATER USE AND DEMAND REDUCTION [10608 – 10609.42]

CHAPTER 9. Urban Water Use Objectives and Water Use Reporting [10609 – 10609.38]

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.

(B) Stating legislative intent that the director of the department and the chairperson of the board appear before the appropriate Senate and Assembly policy committees to report on progress in implementing this chapter.

(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.

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.

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.

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.

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.

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.

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.

(c) 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.

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

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.

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.

(3) Significant fluctuations in seasonal populations.

(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.

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)).

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

PART 2.6. URBAN WATER MANAGEMENT PLANNING

CHAPTER 1. General Declaration and Policy [10610 – 10610.4]

10610. This part shall be known and may be cited as the "Urban Water Management Planning Act."

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.

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.

(b) The management of urban water demands and efficient use of urban water supplies shall be a guiding criterion in public decisions.

(c) Urban water suppliers shall be required to develop water management plans to achieve the efficient use of available supplies and strengthen local drought planning.

CHAPTER 2. Definitions [10611 – 10618]

10611. Unless the context otherwise requires, the definitions of this chapter govern the construction of this part.

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.

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.

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.

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.

10614. "Person" means any individual, firm, association, organization, partnership, business, trust, corporation, company, public agency, or any agency of such an entity.

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.

10616. "Public agency" means any board, commission, county, city and county, city, regional agency, district, or other public entity.

10616.5. "Recycled water" means the reclamation and reuse of wastewater for beneficial use.

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.

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.

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.

CHAPTER 3. Urban Water Management Plans
ARTICLE 1. General Provisions [10620 – 10621]

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) (1) 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.

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.

CHAPTER 3. Urban Water Management Plans

ARTICLE 2. Contents of Plans [10630 – 10634]

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.

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.

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:

(A) 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.

(B) 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).

(C) 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.

(D) 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) (1) 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) 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 (B) 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.

(h) 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).

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.

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.

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.

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

(C) Locally appropriate operational changes.

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

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

(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.

(A) 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.

(B) 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.

10632.1. An urban water supplier shall conduct an annual water supply and demand assessment pursuant to subdivision (a) of Section 10632 and, on or before July 1 of each year, submit an annual water shortage assessment report to the department with information for anticipated shortage, triggered shortage response actions, compliance and enforcement actions, and communication actions consistent with the supplier's water shortage contingency plan. An urban water supplier that relies on imported water from the State Water Project or the Bureau of Reclamation shall submit its annual water supply and demand assessment within 14 days of receiving its final allocations, or by July 1 of each year, whichever is later.

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.

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.

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.

10633. The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source in the serv`ice 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.

CHAPTER 3. Urban Water Management Plans
ARTICLE 2.5. Water Service Reliability [10635]

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.

(d) 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.

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

(f) 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.

CHAPTER 3. Urban Water Management Plans

ARTICLE 3. Adoption and Implementation of Plans [10640 – 10645]

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.

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.

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.

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

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.

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.

CHAPTER 4. Miscellaneous Provisions [10650 – 10657]

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.

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.

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.

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.

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.

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.

10656. An urban water supplier is not eligible for a water grant or loan awarded or administered by the state unless the urban water supplier complies with this part.

10657. 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.

Appendix B

DWR UWMP Checklist

Appendix F: UWMP Checklist

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Chapter 1	10615	A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses, reclamation and demand management activities.	Introduction and Overview	Section 1 (1-1)
x	x	Chapter 1	10630.5	Each plan shall include a simple description of the supplier's plan including water availability, future requirements, a strategy for meeting needs, and other pertinent information. Additionally, a supplier may also choose to include a simple description at the beginning of each chapter.	Summary	Executive Summary - pgs ES1-ES5 (as referenced in Section 1)
x	x	Section 2.2	10620(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.	Plan Preparation	Section 2 (2-1)

Note: page numbers provided indicate start of primary sub-section(s) addressing identified content; additional content references may also be included in other sections

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 2.6	10620(d)(2)	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.	Plan Preparation	Section 2 (2-3)
x	x	Section 2.6.2	10642	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.	Plan Preparation	Section 2 (2-3)
x		Section 2.6, Section 6.1	10631(h)	Retail suppliers will include documentation that they have provided their wholesale supplier(s) - if any - with water use projections from that source.	System Supplies	Section 2 (2-4)

Note: page numbers provided indicate start of primary sub-section(s) addressing identified content; additional content references may also be included in other sections

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
	x	Section 2.6	10631(h)	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.	System Supplies	N/A
x	x	Section 3.1	10631(a)	Describe the water supplier service area.	System Description	Section 3 (3-1)
x	x	Section 3.3	10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 3 (3-4)
x	x	Section 3.4	10631(a)	Provide population projections for 2025, 2030, 2035, 2040 and optionally 2045.	System Description	Section 3 (3-9)
x	x	Section 3.4.2	10631(a)	Describe other social, economic, and demographic factors affecting the supplier's water management planning.	System Description	Section 3 (3-10)
x	x	Sections 3.4 and 5.4	10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	Section 3 (3-9)
x	x	Section 3.5	10631(a)	Describe the land uses within the service area.	System Description	Section 3 (3-2)

Note: page numbers provided indicate start of primary sub-section(s) addressing identified content; additional content references may also be included in other sections

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 4.2	10631(d)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Section 4 (4-2)
x	x	Section 4.2.4	10631(d)(3)(C)	Retail suppliers shall provide data to show the distribution loss standards were met.	System Water Use	Section 4 (4-2)
x	x	Section 4.2.6	10631(d)(4)(A)	In projected water use, include estimates of water savings from adopted codes, plans, and other policies or laws.	System Water Use	Section 4 (4-2)
x	x	Section 4.2.6	10631(d)(4)(B)	Provide citations of codes, standards, ordinances, or plans used to make water use projections.	System Water Use	Section 4 (4-3), Appendix F
x	optional	Section 4.3.2.4	10631(d)(3)(A)	Report the distribution system water loss for each of the 5 years preceding the plan update.	System Water Use	Section 4 (4-5), Appendix E
x	optional	Section 4.4	10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the supplier.	System Water Use	Section 4 (4-6)
x	x	Section 4.5	10635(b)	Demands under climate change considerations must be included as part of the drought risk assessment.	System Water Use	Section 4 (4-6), WSCP

Note: page numbers provided indicate start of primary sub-section(s) addressing identified content; additional content references may also be included in other sections

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x		Chapter 5	10608.20(e)	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.	Baselines and Targets	Section 5 (5-1)
x		Chapter 5	10608.24(a)	Retail suppliers shall meet their water use target by December 31, 2020.	Baselines and Targets	Section 5 (5-1)
	x	Section 5.1	10608.36	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.	Baselines and Targets	N/A
x		Section 5.2	10608.24(d)(2)	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.	Baselines and Targets	N/A

Note: page numbers provided indicate start of primary sub-section(s) addressing identified content; additional content references may also be included in other sections

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x		Section 5.5	10608.22	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.	Baselines and Targets	Section 5 (5-1)
x		Section 5.5 and Appendix E	10608.4	Retail suppliers shall report on their compliance in meeting their water use targets. The data shall be reported using a standardized form in the SBX7-7 2020 Compliance Form.	Baselines and Targets	Section 5 (5-1), Appendix G
x	x	Sections 6.1 and 6.2	10631(b)(1)	Provide a discussion of anticipated supply availability under a normal, single dry year, and a drought lasting five years, as well as more frequent and severe periods of drought.	System Supplies	Section 6 (6-3), Section 7 (7-2)
x	x	Sections 6.1	10631(b)(1)	Provide a discussion of anticipated supply availability under a normal, single dry year, and a drought lasting five years, as well as more frequent and severe periods of drought, *including changes in supply due to climate change.*	System Supplies	Section 6 (6-3), Section 7 (7-2)

Note: page numbers provided indicate start of primary sub-section(s) addressing identified content; additional content references may also be included in other sections

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 6.1	10631(b)(2)	When multiple sources of water supply are identified, describe the management of each supply in relationship to other identified supplies.	System Supplies	Section 6 (6-3)
x	x	Section 6.1.1	10631(b)(3)	Describe measures taken to acquire and develop planned sources of water.	System Supplies	Section 6 (6-23)
x	x	Section 6.2.8	10631(b)	Identify and quantify the existing and planned sources of water available for 2020, 2025, 2030, 2035, 2040 and optionally 2045.	System Supplies	Section 6 (6-4)
x	x	Section 6.2	10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 6 (6-3)
x	x	Section 6.2.2	10631(b)(4)(A)	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.	System Supplies	Section 6 (6-6), Appendix H
x	x	Section 6.2.2	10631(b)(4)(B)	Describe the groundwater basin.	System Supplies	Section 6 (6-7)

Note: page numbers provided indicate start of primary sub-section(s) addressing identified content; additional content references may also be included in other sections

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 6.2.2	10631(b)(4)(B)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the supplier has the legal right to pump.	System Supplies	Section 6 (6-7)
x	x	Section 6.2.2.1	10631(b)(4)(B)	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.	System Supplies	Section 6 (6-7)
x	x	Section 6.2.2.4	10631(b)(4)(C)	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	System Supplies	Section 6 (6-7)
x	x	Section 6.2.2	10631(b)(4)(D)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System Supplies	Section 6 (6-7)
x	x	Section 6.2.7	10631(c)	Describe the opportunities for exchanges or transfers of water on a short-term or long- term basis.	System Supplies	Section 6 (6-23)

Note: page numbers provided indicate start of primary sub-section(s) addressing identified content; additional content references may also be included in other sections

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 6.2.5	10633(b)	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	System Supplies (Recycled Water)	Section 6 (6-14)
x	x	Section 6.2.5	10633(c)	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	Section 6 (6-14)
x	x	Section 6.2.5	10633(d)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System Supplies (Recycled Water)	Section 6 (6-14)
x	x	Section 6.2.5	10633(e)	Describe the projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected.	System Supplies (Recycled Water)	Section 6 (6-19)
x	x	Section 6.2.5	10633(f)	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.	System Supplies (Recycled Water)	Section 6 (6-21)

Note: page numbers provided indicate start of primary sub-section(s) addressing identified content; additional content references may also be included in other sections

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 6.2.5	10633(g)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	Section 6 (6-21)
x	x	Section 6.2.6	10631(g)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 6 (6-23)
x	x	Section 6.2.5	10633(a)	Describe the wastewater collection and treatment systems in the supplier's service area with quantified amount of collection and treatment and the disposal methods.	System Supplies (Recycled Water)	Section 6 (6-14)
x	x	Section 6.2.8, Section 6.3.7	10631(f)	Describe the expected future water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and for a period of drought lasting 5 consecutive water years.	System Supplies	Sections 6 and 7 (throughout)
x	x	Section 6.4 and Appendix O	10631.2(a)	The UWMP must include energy information, as stated in the code, that a supplier can readily obtain.	System Suppliers, Energy Intensity	Section 6 (6-24)

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Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 7.2	10634	Provide information on the quality of existing sources of water available to the supplier and the manner in which water quality affects water management strategies and supply reliability	Water Supply Reliability Assessment	Section 7 (7-2)
x	x	Section 7.2.4	10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water Supply Reliability Assessment	Section 7 (7-2), Appendix H
x	x	Section 7.3	10635(a)	Service Reliability Assessment: Assess the water supply reliability during normal, dry, and a drought lasting five consecutive water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years.	Water Supply Reliability Assessment	Section 7 (7-2)
x	x	Section 7.3	10635(b)	Provide a drought risk assessment as part of information considered in developing the demand management measures and water supply projects.	Water Supply Reliability Assessment	Section 7 (7-2), Section 8, Section 9

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Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 7.3	10635(b)(1)	Include a description of the data, methodology, and basis for one or more supply shortage conditions that are necessary to conduct a drought risk assessment for a drought period that lasts 5 consecutive years.	Water Supply Reliability Assessment	Section 7 (7-2)
x	x	Section 7.3	10635(b)(2)	Include a determination of the reliability of each source of supply under a variety of water shortage conditions.	Water Supply Reliability Assessment	Section 7 (7-21)
x	x	Section 7.3	10635(b)(3)	Include a comparison of the total water supply sources available to the water supplier with the total projected water use for the drought period.	Water Supply Reliability Assessment	Section 7 (7-21)
x	x	Section 7.3	10635(b)(4)	Include considerations of the historical drought hydrology, plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.	Water Supply Reliability Assessment	Section 7 (7-2)
x	x	Chapter 8	10632(a)	Provide a water shortage contingency plan (WSCP) with specified elements below.	Water Shortage Contingency Planning	Section 8/ Appendix I

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Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Chapter 8	10632(a)(1)	Provide the analysis of water supply reliability (from Chapter 7 of Guidebook) in the WSCP	Water Shortage Contingency Planning	Appendix I (1)
x	x	Section 8.10	10632(a)(10)	Describe reevaluation and improvement procedures for monitoring and evaluation the water shortage contingency plan to ensure risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented.	Water Shortage Contingency Planning	Appendix I (1)
x	x	Section 8.2	10632(a)(2)(A)	Provide the written decision-making process and other methods that the supplier will use each year to determine its water reliability.	Water Shortage Contingency Planning	Appendix I (2)
x	x	Section 8.2	10632(a)(2)(B)	Provide data and methodology to evaluate the supplier's water reliability for the current year and one dry year pursuant to factors in the code.	Water Shortage Contingency Planning	Appendix I (1), Section 7

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Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 8.3	10632(a)(3)(A)	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.	Water Shortage Contingency Planning	Appendix I (2)
x	x	Section 8.3	10632(a)(3)(B)	Suppliers with an existing water shortage contingency plan that uses different water shortage levels must cross reference their categories with the six standard categories.	Water Shortage Contingency Planning	Appendix I (2)
x	x	Section 8.4	10632(a)(4)(A)	Suppliers with water shortage contingency plans that align with the defined shortage levels must specify locally appropriate supply augmentation actions.	Water Shortage Contingency Planning	Appendix I (7)
x	x	Section 8.4	10632(a)(4)(B)	Specify locally appropriate demand reduction actions to adequately respond to shortages.	Water Shortage Contingency Planning	Appendix I (7)

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Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 8.4	10632(a)(4)(C)	Specify locally appropriate operational changes.	Water Shortage Contingency Planning	Appendix I (1)
x	x	Section 8.4	10632(a)(4)(D)	Specify additional mandatory prohibitions against specific water use practices that are in addition to state-mandated prohibitions are appropriate to local conditions.	Water Shortage Contingency Planning	Appendix I (4)
x	x	Section 8.4	10632(a)(4)(E)	Estimate the extent to which the gap between supplies and demand will be reduced by implementation of the action.	Water Shortage Contingency Planning	Appendix I (4)
x	x	Section 8.4.6	10632.5	The plan shall include a seismic risk assessment and mitigation plan.	Water Shortage Contingency Plan	Appendix I (9)
x	x	Section 8.5	10632(a)(5)(A)	Suppliers must describe that they will inform customers, the public and others regarding any current or predicted water shortages.	Water Shortage Contingency Planning	Appendix I (11)
x	x	Section 8.5 and 8.6	10632(a)(5)(B) 10632(a)(5)(C)	Suppliers must describe that they will inform customers, the public and others regarding any shortage response actions triggered or anticipated to be triggered and other relevant communications.	Water Shortage Contingency Planning	Appendix I (11)

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Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x		Section 8.6	10632(a)(6)	Retail supplier must describe how it will ensure compliance with and enforce provisions of the WSCP.	Water Shortage Contingency Planning	Appendix I (14)
x	x	Section 8.7	10632(a)(7)(A)	Describe the legal authority that empowers the supplier to enforce shortage response actions.	Water Shortage Contingency Planning	Appendix I (14)
x	x	Section 8.7	10632(a)(7)(B)	Provide a statement that the supplier will declare a water shortage emergency Water Code Chapter 3.	Water Shortage Contingency Planning	Appendix I (15)
x	x	Section 8.7	10632(a)(7)(C)	Provide a statement that the supplier will coordinate with any city or county within which it provides water for the possible proclamation of a local emergency.	Water Shortage Contingency Planning	Appendix I (15)
x	x	Section 8.8	10632(a)(8)(A)	Describe the potential revenue reductions and expense increases associated with activated shortage response actions.	Water Shortage Contingency Planning	Appendix I (15)
x	x	Section 8.8	10632(a)(8)(B)	Provide a description of mitigation actions needed to address revenue reductions and expense increases associated with activated shortage response actions.	Water Shortage Contingency Planning	Appendix I (15)

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Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x		Section 8.8	10632(a)(8)(C)	Retail suppliers must describe the cost of compliance with Water Code Chapter 3.3: Excessive Residential Water Use During Drought	Water Shortage Contingency Planning	Appendix I (14)
x		Section 8.9	10632(a)(9)	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.	Water Shortage Contingency Planning	Appendix I (16)
x		Section 8.11	10632(b)	Analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas.	Water Shortage Contingency Planning	Appendix I (6)
x	x	Sections 8.12 and 10.4	10635(c)	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.	Plan Adoption, Submittal, and Implementation	Appendix I (16), Section 10

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Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 8.14	10632(c)	Make available the Water Shortage Contingency Plan to customers and any city or county where it provides water within 30 after adopted the plan.	Water Shortage Contingency Planning	Appendix I (16), Section 10
	x	Sections 9.1 and 9.3	10631(e)(2)	Wholesale suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and supplier assistance program.	Demand Management Measures	N/A
x		Sections 9.2 and 9.3	10631(e)(1)	Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand Management Measures	Section 9 (9-1)
x		Chapter 10	10608.26(a)	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets (recommended to discuss compliance).	Plan Adoption, Submittal, and Implementation	Section 10 (10-2)

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Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 10.2.1	10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. Reported in Table 10-1.	Plan Adoption, Submittal, and Implementation	Section 10 (10-2), Section 2
x	x	Section 10.4	10621(f)	Each urban water supplier shall update and submit its 2020 plan to the department by July 1, 2021.	Plan Adoption, Submittal, and Implementation	Section 10 (10-3)
x	x	Sections 10.2.2, 10.3, and 10.5	10642	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.	Plan Adoption, Submittal, and Implementation	Section 10 (10-2), Appendix D
x	x	Section 10.2.2	10642	The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water.	Plan Adoption, Submittal, and Implementation	Section 10 (10-2)
x	x	Section 10.3.2	10642	Provide supporting documentation that the plan and contingency plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Section 10 (10-3), Appendix L

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Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 10.4	10644(a)	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.	Plan Adoption, Submittal, and Implementation	Section 10 (10-3)
x	x	Section 10.4	10644(a)(1)	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.	Plan Adoption, Submittal, and Implementation	Section 10 (10-3)
x	x	Sections 10.4.1 and 10.4.2	10644(a)(2)	The plan, or amendments to the plan, submitted to the department shall be submitted electronically.	Plan Adoption, Submittal, and Implementation	Section 10 (10-3)
x	x	Section 10.5	10645(a)	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.	Plan Adoption, Submittal, and Implementation	Section 10 (10-3)
x	x	Section 10.5	10645(b)	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.	Plan Adoption, Submittal, and Implementation	Section 10 (10-3)

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Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 10.6	10621(c)	If supplier is regulated by the Public Utilities Commission, include its plan and contingency plan as part of its general rate case filings.	Plan Adoption, Submittal, and Implementation	N/A
x	x	Section 10.7.2	10644(b)	If revised, submit a copy of the water shortage contingency plan to DWR within 30 days of adoption.	Plan Adoption, Submittal, and Implementation	Section 10 (10-3)

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Appendix C

DWR Standardized UWMP Data Tables

Submittal Table 2-1 Retail Only: Public Water Systems			
Public Water System Number	Public Water System Name	Number of Municipal Connections 2020	Volume of Water Supplied 2020 *
Add additional rows as needed			
4310019	San Jose Municipal Water	2,203	4,767
4310020	San Jose Municipal Water	23,891	12,779
	TOTAL	26,094	17,546
**** Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*			
NOTES: Active potable connections as of July 2020			

Submittal Table 2-2: Plan Identification			
Select Only One	**Type of Plan**		**Name of RUWMP or Regional Alliance** *if applicable*
☑	**Individual UWMP**		
	☐	Water Supplier is also a member of a RUWMP	
	☐	Water Supplier is also a member of a Regional Alliance	
☐	**Regional Urban Water Management Plan (RUWMP)**		
NOTES:			

Submittal Table 2-3: Supplier Identification	
Type of Supplier (select one or both)	
☐	Supplier is a wholesaler
☑	Supplier is a retailer
Fiscal or Calendar Year (select one)	
☑	UWMP Tables are in calendar years
☐	UWMP Tables are in fiscal years
If using fiscal years provide month and date that the fiscal year begins (mm/dd)	
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.
Wholesale Water Supplier Name
Add additional rows as needed
Valley Water
San Francisco Public Utilities Commission
NOTES:

Submittal Table 3-1 Retail: Population - Current and Projected						
Population Served	2020	2025	2030	2035	2040	2045*(opt)*
	132,644	150,368	168,092	194,983	217,685	222,661
NOTES:						

Submittal Table 4-1 Retail: Demands for Potable and Non-Potable[1] Water - Actual			
Use Type	2020 Actual		
Drop down list May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool	Additional Description (as needed)	Level of Treatment When Delivered Drop down list	Volume[2]
Add additional rows as needed			
Single Family		Drinking Water	7,920
Multi-Family		Drinking Water	2,694
Commercial		Drinking Water	1,040
Industrial		Drinking Water	1,837
Institutional/Governmental		Drinking Water	176
Landscape	Irrigation	Drinking Water	2,873
Losses		Drinking Water	1,006
		TOTAL	17,546
[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: 1 Demand projections include water savings estimated to result from adopted codes, standards, and ordinances. 2 For current and future water demand projections, water losses are reflected as the difference between water supplied and water consumed (based on customer billing records) to reflect the overall mass balance of supplies compared to demands. These values may differ slightly from water losses as calculated in AWWA Water Loss Audits.			

Submittal Table 4-2 Retail: Use for Potable and Non-Potable[1] Water - Projected						
Use Type	Additional Description (as needed)	Projected Water Use[2] *Report To the Extent that Records are Available*				
Drop down list May select each use multiple times		2025	2030	2035	2040	2045 (opt)
Add additional rows as needed						
Single Family		9,107	10,293	10,917	12,338	12,621
Multi-Family		2,932	3,171	3,463	3,763	3,849
Commercial		1,642	1,920	2,436	3,376	3,446
Industrial		2,562	3,197	4,086	5,546	5,665
Institutional/Governmental		208	239	286	356	365
Landscape	Irrigation	3,401	3,930	4,586	5,584	5,712
Losses		1,228	1,406	1,569	1,852	1,894
TOTAL		21,080	24,156	27,343	32,815	33,552
[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: Demand projections include water savings estimated to result from adopted codes, standards, and ordinances.						

Submittal Table 4-3 Retail: Total Water Use (Potable and Non-Potable)						
	2020	2025	2030	2035	2040	2045 (opt)
Potable Water, Raw, Other Non-potable *From Tables 4-1R and 4-2 R*	17,546	21,080	24,156	27,343	32,815	33,552
Recycled Water Demand[1] *From Table 6-4*	4,097	4,776	5,456	6,279	7,368	7,413
Optional Deduction of Recycled Water Put Into Long-Term Storage[2]						
TOTAL WATER USE	21,643	25,856	29,612	33,622	40,183	40,965
*[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:						

Submittal Table 4-4 Retail: Last Five Years of Water Loss Audit Reporting	
Reporting Period Start Date (mm/yyyy)	Volume of Water Loss [1,2]
01/2016	2,244
01/2017	774
01/2018	925
01/2019	1,285
01/2020	970
[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: 1 Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet. 2 Estimated water loss for the reporting period starting 01/2020, based on a draft, un-validated Water Loss Audit	

Submittal Table 4-5 Retail Only: Inclusion in Water Use Projections	
Are Future Water Savings Included in Projections? (Refer to Appendix K of UWMP Guidebook) *Drop down list (y/n)*	Yes
If "Yes" to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, or otherwise are utilized in demand projections are found.	(see note)
Are Lower Income Residential Demands Included In Projections? *Drop down list (y/n)*	Yes
NOTES: Refer to San José Municipal Code Chapter 15.10 and 15.11 (Appendix F)	

Submittal Table 5-1 Baselines and Targets Summary From SB X7-7 Verification Form
Retail Supplier or Regional Alliance Only

Baseline Period	Start Year *	End Year *	Average Baseline GPCD*	Confirmed 2020 Target*
10-15 year	*1997*	*2006*	*181*	*145*
5 Year	*2003*	*2007*	*179*	
**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

2020 GPCD			2020 Confirmed Target GPCD*	Did Supplier Achieve Targeted Reduction for 2020? Y/N
Actual 2020 GPCD*	2020 TOTAL Adjustments*	Adjusted 2020 GPCD* *(Adjusted if applicable)*		
118	*0*	*118*	*118*	*Yes*
**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:				

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.

Groundwater Type ***Drop Down List***	Location or Basin Name	2016*	2017*	2018*	2019*	2020*
Add additional rows as needed						
Alluvial Basin	Santa Clara Subbasin and Coyote Valley Subbasin	654	312	851	938	885
	TOTAL	654	312	851	938	885
**** Units of measure (AF, CCF, MG)*** *must remain consistent throughout the UWMP as reported in Table 2-3.*						
NOTES:						

Submittal Table 6-2 Retail: Wastewater Collected Within Service Area in 2020						
☐	There is no wastewater collection system. The supplier will not complete the table below.					
	Percentage of 2020 service area covered by wastewater collection system *(optional)*					
	Percentage of 2020 service area population covered by wastewater collection system *(optional)*					
Wastewater Collection			**Recipient of Collected Wastewater**			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated? *Drop Down List*	Volume of Wastewater Collected from UWMP Service Area 2020 *	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located Within UWMP Area? *Drop Down List*	Is WWTP Operation Contracted to a Third Party? *(optional)* *Drop Down List*
City of San José	Estimated	10,205	City of San José/Santa Clara	San José/Santa Clara Regional Wastewater Facility	Yes	No
		10,205	**Total Wastewater Collected from Service Area in 2020**			
**** Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*						
NOTES:						

Tables 6-3, 6-4: Next page

Submittal Table 6-5 Retail: 2015 UWMP Recycled Water Use Projection Compared to 2020 Actual		
☐	Recycled water was not used in 2015 nor projected for use in 2020. The supplier will not complete the table below. If recycled water was not used in 2020, and was not predicted to be in 2015, then check the box and do not complete the table.	
Beneficial Use Type	**2015 Projection for 2020 [1]**	**2020 Actual Use[1]**
Insert additional rows as needed.		
Agricultural irrigation		
Landscape irrigation (exc golf courses)	2,435	2,025
Golf course irrigation		
Commercial use		
Industrial use	2,682	2,072
Geothermal and other energy production		
Seawater intrusion barrier		
Recreational impoundment		
Wetlands or wildlife habitat		
Groundwater recharge (IPR)		
Reservoir water augmentation (IPR)		
Direct potable reuse		
Other (Description Required)		
Total	5,117	4,097
[1] **Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.		
NOTE: Landscape irrigation figures include golf courses; disparities attributed to a variety of factors including more efficient water use and conservation as a result of the 2012-2016 drought, reduced development activity, and the COVID-19 pandemic.		

Submittal Table 6-3 Retail: Wastewater Treatment and Discharge Within Service Area in 2020

☐ **No wastewater is treated or disposed of within the UWMP service area.** The supplier will not complete the table below.

Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number *(optional)* [2]	Method of Disposal	Does This Plant Treat Wastewater Generated Outside the Service Area?	Treatment Level	2020 volumes [1]				
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area	Instream Flow Permit Requirement
San José/Santa Clara Regional Wastewater Facility	Artesion Slough	Tributary to South San Francisco Bay via Coyote Creek	2438014001	Bay or estuary outfall	Yes	Tertiary	10,205	8,324	4,097	8,474	N/A
						Total	10,205	8,324	4,097	8,474	0

[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:

Submittal Table 6-4 Retail: Recycled Water Direct Beneficial Uses Within Service Area

☐ Recycled water is not used and is not planned for use within the service area of the supplier. The supplier will not complete the table below.

Name of Supplier Producing (Treating) the Recycled Water:	South Bay Water Recycling, Valley Water (advanced treatment)
Name of Supplier Operating the Recycled Water Distribution System:	South Bay Water Recycling
Supplemental Water Added in 2020 (volume) *Include units*	No
Source of 2020 Supplemental Water	N/A

Beneficial Use Type *Insert additional rows if needed.*	**Potential** Beneficial Uses of Recycled Water (Describe)	Amount of **Potential** Uses of Recycled Water	General Description of 2020 Uses	Level of Treatment	2020 [1]	2025 [1]	2030 [1]	2035 [1]	2040 [1]	2045 [1] (opt)
Landscape irrigation (exc golf courses)	Landscape irrigation including golf courses	N/A	Irrigation	Tertiary	2,025	2,444	2,887	3,432	4,155	4,180
Industrial use	Cooling towers, dual plumbing, etc.	N/A	Cooling towers, dual plumbing, etc.	Tertiary	2,072	2,332	2,569	2,847	3,213	3,233
				Total:	4,097	4,776	5,456	6,279	7,368	7,413
				2020 Internal Reuse	N/A					

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

NOTES: See page 6-17 for information describing the relationship between identified suppliers. N/A - Not applicable/not quantifiable

Submittal Table 6-6 Retail: Methods to Expand Future Recycled Water Use			
☐	Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.		
	Provide page location of narrative in UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use *
Add additional rows as needed			
Regional Planning	Valley Water planning efforts underway	ongoing	N/A
Rate Discounts	Priced lower than potable water	ongoing	N/A
Public Education	Support voluntary efforts to utilize recycled water	ongoing	N/A
Required Use	San José Municipal Code requires development to expand infrastructure and use recycled water	ongoing	N/A
Integrated Water Infrastructure Program	Integrate existing water infrastructure distribution systems conveying stormwater, non-potable groundwater, and recycled water in a way to increase non-potable water supply	pending	TBD
		Total	0
***Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*			
NOTES: N/A – Not applicable/not quantifiable, TBD – To be determined			

Submittal Table 6-7 Retail: Expected Future Water Supply Projects or Programs						
☐	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.					
☐	Some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.					
	Provide page location of narrative in the UWMP					
Name of Future Projects or Programs	Joint Project with other suppliers?		Description (if needed)	Planned Implementation Year	Planned for Use in Year Type	Expected Increase in Water Supply to Supplier* *This may be a range*
	Drop Down List (y/n)	*If Yes, Supplier Name*				
Add additional rows as needed						
Groundwater wells	No		Additional 5-7 wells to utilize groundwater as primary or backup supply	varies	All Year Types	4000-9000
***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				
Water Supply	Additional Detail on Water Supply	2020		
Drop down list .These are the only water supply categories that will be recognized by the WUEdata online submittal tool		Actual Volume*	Water Quality Drop Down List	Total Right or Safe Yield* (optional)
Add additional rows as needed				
Purchased or Imported Water	SFPUC	4,731	Drinking Water	
Purchased or Imported Water	Valley Water	11,930	Drinking Water	
Groundwater (not desalinated)		885	Drinking Water	
Recycled Water		4,097	Recycled Water	
	Total	21,643		0
***Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*				
NOTES:				

Submittal Table 6-9 Retail: Water Supplies — Projected											
Water Supply	Additional Detail on Water Supply	Projected Water Supply * Report To the Extent Practicable									
Drop down list		**2025**		**2030**		**2035**		**2040**		**2045** (opt)	
		Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)
Add additional rows as needed											
Purchased or Imported Water	Potable Water - Valley Water and SFPUC	21,080		24,156		27,343		32,815		33,552	
Recycled Water	SBWR	4,776		5,456		6,279		7,368		7,413	
Total		25,856		29,612		33,622		40,183		40,965	
***Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*											
NOTES											

Submittal Table 7-1 Retail: Basis of Water Year Data (Reliability Assessment)			
Year Type	**Base Year** If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 2019-2020, use 2020	**Available Supplies if Year Type Repeats**	
		☑	Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location: Beginning on page 7-21
		☐	Quantification of available supplies is provided in this table as either volume only, percent only, or both.
		Volume Available *	**% of Average Supply**
Average Year			100%
Single-Dry Year			
Consecutive Dry Years 1st Year			
Consecutive Dry Years 2nd Year			
Consecutive Dry Years 3rd Year			
Consecutive Dry Years 4th Year			
Consecutive Dry Years 5th Year			
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: Valley Water imported and groundwater sources, as well as recycled water, have been identified to be 100% reliable during dry years; reductions shown in subsequent tables reflect SFPUC reductions under BDP implementation.			

Submittal Table 7-2 Retail: Normal Year Supply and Demand Comparison					
	2025	2030	2035	2040	2045 *(Opt)*
Supply totals (*autofill from Table 6-9)*	25,856	29,612	33,622	40,183	40,965
Demand totals *(autofill from Table 4-3)*	25,856	29,612	33,622	40,183	40,965
Difference	0	0	0	0	0
NOTES: Table shown in UWMP excludes recycled water, which is 100% available in all years					

Submittal Table 7-3 Retail: Single Dry Year Supply and Demand Comparison					
	2025	2030	2035	2040	2045 (Opt)
Supply totals*	19,265	22,330	25,505	30,977	31,257
Demand totals*	21,080	24,156	27,342	32,814	33,553
Difference	(1,815)	(1,826)	(1,837)	(1,837)	(2,296)
***Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*					
NOTES: Table excludes recycled water which is 100% available in all years					

Submittal Table 7-4 Retail: Multiple Dry Years Supply and Demand Comparison						
		2025*	2030*	2035*	2040*	2045* (Opt)
First year	Supply totals	19,265	22,330	25,505	30,977	
	Demand totals	21,080	24,156	27,342	32,814	
	Difference	(1,815)	(1,826)	(1,837)	(1,837)	0
Second year	Supply totals	19,421	22,508	26,140	30,666	
	Demand totals	21,695	24,793	28,437	32,962	
	Difference	(2,274)	(2,285)	(2,297)	(2,296)	0
Third year	Supply totals	20,036	23,145	27,235	30,813	
	Demand totals	22,310	25,431	29,531	33,110	
	Difference	(2,274)	(2,286)	(2,296)	(2,297)	0
Fourth year	Supply totals	20,652	23,783	28,329	30,636	
	Demand totals	22,926	26,068	30,626	33,258	
	Difference	(2,274)	(2,285)	(2,297)	(2,622)	0
Fifth year	Supply totals	21,267	24,420	29,200	30,784	
	Demand totals	23,541	26,705	31,720	33,405	
	Difference	(2,274)	(2,285)	(2,520)	(2,621)	0
Sixth year *(optional)*	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0
***Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*						
NOTES: 1 Supply Totals include projected supplies available from SFPUC and Valley Water (which includes groundwater) during five-year shortages ranging from 2025-2030 through 2040-2045. 2 Table excludes recycled water which is 100% available in all years						

Submittal Table 7-5: Five-Year Drought Risk Assessment Tables to address Water Code Section 10635(b)	
2021	**Total**
Total Water Use	18,253
Total Supplies	18,253
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0%

Submittal Table 7-5: Five-Year Drought Risk Assessment Tables to address Water Code Section 10635(b)

2022	Total
Total Water Use	18,960
Total Supplies	18,960
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0%

2023	Total
Total Water Use	19,666
Total Supplies	17,361
Surplus/Shortfall w/o WSCP Action	(2,305)
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	2,305
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	12%

2024	Total
Total Water Use	20,373
Total Supplies	18,038
Surplus/Shortfall w/o WSCP Action	(2,335)
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	2,335
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	11%

2025	Total
Total Water Use	21,080
Total Supplies	18,716
Surplus/Shortfall w/o WSCP Action	(2,364)
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	2,364
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	11%
NOTES: Recycled water supplies are projected to be 100% available in all years. Recycled water is excluded from this table, such that this table would represent the required water use reductions associated with potable water use.	

Submittal Table 8-1 Water Shortage Contingency Plan Levels		
Shortage Level	**Percent Shortage Range**	**Shortage Response Actions** (***Narrative description***)
1	Up to 10%	No shortage declared; water waste prevention measures in place.
2	Up to 20%	10 percent shortage declared. Current water use may be tapping into groundwater reserves.
3	Up to 30%	25 percent shortage declared. Shortage conditions are worsening. Groundwater levels continue to decrease.
4	Up to 40%	30 percent shortage declared. Signs of multi-year drought.
5	Up to 50%	Greater than 40 percent shortage declared. Continued signs of multi-year drought.
6	>50%	Greater than 50 percent shortage. Water supply reserved for health and safety needs.
NOTES:		

Submittal Table 8-2: Demand Reduction Actions				
Shortage Level	Demand Reduction Actions ***Drop down list***	How much is this going to reduce the shortage gap? *Include units used (volume type or percentage)*	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement?
Add additional rows as needed				
1	Other	5%	Various outreach strategies in San José Municipal Code aimed toward achieving long-term water conservation targets and prohibiting water waste.	Yes
1	Other	<1%	Leaks, broken water pipes, irrigation systems, and faucets must have repairs initiated within five working days. Repairs must be completed as soon as practical.	Yes
1	Other	<1%	Public use of water from hydrants is prohibited except under certain conditions	Yes
2,3,4	Landscape - Limit landscape irrigation to specific days	Varies; estimated 10-30% depending on schedule	No outdoor irrigation more than 1-4 days per week, according to schedule set by Council (depending on shortage level).	Yes
3	Water Features - Restrict water use for decorative	1%	Filling of non-recirculating decorative fountains with potable water is prohibited. Cannot operate a decorative	Yes

Submittal Table 8-2: Demand Reduction Actions				
	water features, such as fountains		fountain with potable water unless it is recirculating, non-misting, and lined.	
3	Landscape - Other landscape restriction or prohibition	1%	No filling ornamental lakes or ponds with potable water	Yes
3	Other - Prohibit use of potable water for washing hard surfaces	<1%	No potable water may be used to clean any exterior paved or hard-surfaced area, or the exterior of any building or structure - except with a bucket, without a city exemption	Yes
3	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	<1%	No washing of vehicles, except at a commercial car washing facility that utilizes a re-circulating water system to capture or reuse water	Yes
4	Landscape - Other landscape restriction or prohibition	1%	No new outdoor landscaping or plantings during May through October with operating overhead irrigation, with exceptions for drip irrigation and drought tolerant or native plants, plants/trees grown for consumption, other exceptions.	Yes
4	Other water feature or swimming pool restriction	1%	No refilling residential swimming pools or outdoor spas more than one foot; no initial filling or residential pools/spas with potable water	Yes
4	Other	1%	Customers must repair leaks within 48 hours of notification	Yes
4	Other water feature or swimming pool restriction	<1%	Filling of any swimming pool, fountain or spa is prohibited	Yes
5	Landscape - Other landscape restriction or prohibition	40-50%	Council would adopt restriction prohibiting all landscape irrigation. Watering of public benefit facilities and recreational landscape subject to restriction	Yes
5	Other	3%	Enforceable mandatory water budget program	Yes
NOTES: Each level adopted continues the restrictions associated with the prior level(s)				

Submittal Table 8-3: Supply Augmentation and Other Actions			
Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier	How much is this going to reduce the shortage gap? *Include units used (volume type or percentage)*	Additional Explanation or Reference *(optional)*
Add additional rows as needed			
All	Other Actions (describe)	N/A	See note
NOTES: San José does not have augmented supplies available as a retailer; supply augmentation for purchased supplies is managed by wholesalers. San José will focus on demand reduction actions as identified in Table 8-2.			

Submittal Table 10-1 Retail: Notification to Cities and Counties		
City Name	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
San José	Yes	Yes
County Name *Drop Down List*	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
Santa Clara County	Yes	Yes
NOTES: Notice of Public Hearing was also sent to all agencies listed in Table 2-5		

Urban Water Supplier: *City of San José*

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

Enter Start Date for Reporting Period	1/1/2020	**Urban Water Supplier Operational Control**		
End Date	12/31/2020			
Is upstream embedded in the values reported? ☐		**Sum of All Water Management Processes**	**Non-Consequential Hydropower**	
Water Volume Units Used	*AF*	Total Utility	Hydropower	Net Utility
Volume of Water Entering Process (volume unit)		*17546*	*0*	*17546*
Energy Consumed (kWh)		*4611755*	*0*	*4611755*
Energy Intensity (kWh/vol. converted to MG)		*806.6*	*0.0*	*806.6*

Quantity of Self-Generated Renewable Energy

N/A kWh

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

Metered Data

Data Quality Narrative:

Billing periods as billed by energy utility do not exactly overlap identified reporting period. Best available billing data used.

Narrative:

Energy consumed includes some building energy use as it cannot be separated from system asset energy use. Utility utilizes some solar power for occupied buildings and communication equipment; solar power does not contribute to water management process and therefore is not included in this table.

Appendix D

Public Involvement Materials

San Jose Mercury News
4 N. 2nd Street, Suite 700
San Jose, CA 95113
408-920-5332

2003193

CALIF. NEWSPAPER SVC.
BILLING DEPT.
PO BOX 60460
LOS ANGELES, CA 90060

PROOF OF PUBLICATION
IN THE CITY OF SAN JOSE
IN THE STATE OF CALIFORNIA
COUNTY OF SANTA CLARA

FILE NO. 3473317

In the matter of

San Jose Mercury News

The undersigned, being first duly sworn, deposes and says: That at all times hereinafter mentioned affiant was and still is a citizen of the United States, over the age of eighteen years, and not a party to or interested in the above entitled proceedings; and was at and during all said times and still is the principal clerk of the printer and publisher of the San Jose Mercury News, a newspaper of general circulation printed and published daily in the City of San Jose, County of Santa Clara, State of California as determined by the court's decree dated June 27, 1952, Case Numbers 84096 and 84097, and that said San Jose Mercury News is and was at all times herein mentioned a newspaper of general circulation as that term is defined by Sections 6000; that at all times said newspaper has been established, printed and published in the said County and State at regular intervals for more than one year preceding the first publication of the notice herein mentioned. Said decree has not been revoked, vacated or set aside.

I declare that the notice, of which the annexed is a true printed copy, has been published in each regular or entire issue of said newspaper and not in any supplement thereof on the following dates, to wit:

05/25/2021, 06/01/2021

Dated at San Jose, California
June 1, 2021

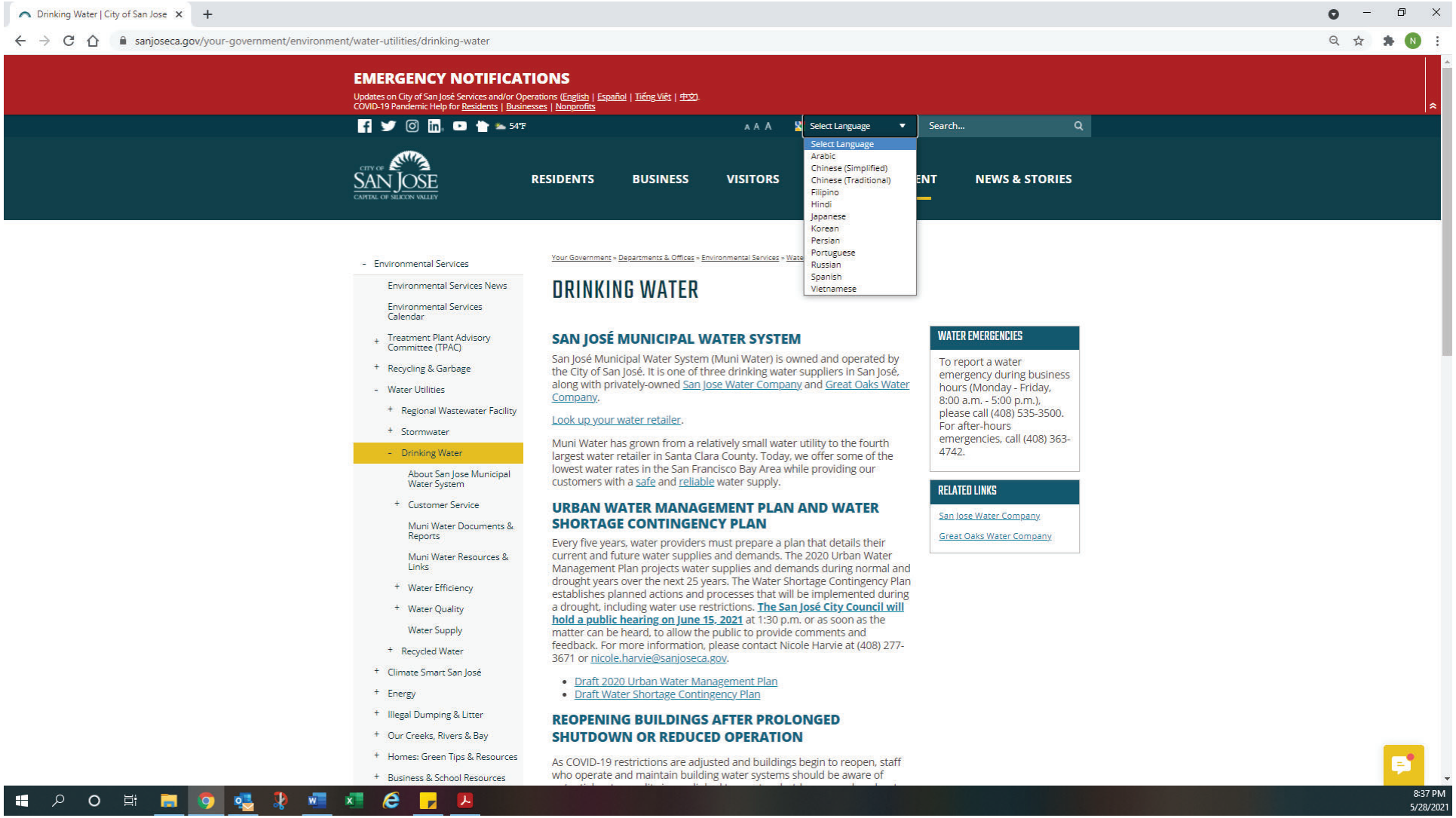
I declare under penalty of perjury that the foregoing is true and correct.

Principal clerk of the printer and publisher of the San Jose Mercury News

Legal No. **0006577822**

NOTICE OF PUBLIC HEARINGS
SAN JOSE MUNICIPAL WATER SYSTEM
2020 URBAN WATER MANAGEMENT PLAN
AND
WATER SHORTAGE CONTINGENCY PLAN

NOTICE IS HEREBY GIVEN that the City Council of the City of San José will hold public hearings in the Council Chambers at City Hall, 200 East Santa Clara Street, San José, California (virtually) on Tuesday, June 15, 2020, at 1:30 p.m. or as soon thereafter as the matter can be heard, on the 2020 Urban Water Management Plan and Water Shortage Contingency Plan for the San José Municipal Water System's North San José, Alviso, Evergreen, Edenvale and Coyote Valley service areas, filed with the City Clerk, pursuant to Sections 10608-10656 of the California Water Code. The plans include an analysis of drinking water supply and demand for the next twenty years, including a supply reliability analysis and identified actions to address water shortages. Draft plans can be viewed at www.sjmuniwater.com or may be provided upon request by calling (408) 277-3671. Information regarding remote meetings is available here: www.sanjoseca.gov/news-stories/watch-a-meeting.
DATE OF PUBLICATION: MAY 25, 2021 & JUNE 1, 2021
5/25, 6/1/21
CNS-3473317#
MERCURY NEWS
SJMN 6577822
May 25;June 1, 2021


Drinking Water | City of San Jose
sanjoseca.gov/your-government/environment/water-utilities/drinking-water
EMERGENCY NOTIFICATIONS
Updates on City of San José Services and/or Operations (English | Español | Tiếng Việt | 中文)
COVID-19 Pandemic Help for Residents | Businesses | Nonprofits
Select Language
Search...
RESIDENTS
BUSINESS
VISITORS
NEWS & STORIES
- Environmental Services
Environmental Services News
Environmental Services Calendar
+ Treatment Plant Advisory Committee (TPAC)
+ Recycling & Garbage
- Water Utilities
+ Regional Wastewater Facility
+ Stormwater
- Drinking Water
About San Jose Municipal Water System
+ Customer Service
Muni Water Documents & Reports
Muni Water Resources & Links
+ Water Efficiency
+ Water Quality
Water Supply
+ Recycled Water
+ Climate Smart San José
+ Energy
+ Illegal Dumping & Litter
+ Our Creeks, Rivers & Bay
+ Homes: Green Tips & Resources
+ Business & School Resources
Your Government » Departments & Offices » Environmental Services »
DRINKING WATER
SAN JOSÉ MUNICIPAL WATER SYSTEM
San José Municipal Water System (Muni Water) is owned and operated by the City of San José. It is one of three drinking water suppliers in San José, along with privately-owned San Jose Water Company and Great Oaks Water Company.
Look up your water retailer.
Muni Water has grown from a relatively small water utility to the fourth largest water retailer in Santa Clara County. Today, we offer some of the lowest water rates in the San Francisco Bay Area while providing our customers with a safe and reliable water supply.
URBAN WATER MANAGEMENT PLAN AND WATER SHORTAGE CONTINGENCY PLAN
Every five years, water providers must prepare a plan that details their current and future water supplies and demands. The 2020 Urban Water Management Plan projects water supplies and demands during normal and drought years over the next 25 years. The Water Shortage Contingency Plan establishes planned actions and processes that will be implemented during a drought, including water use restrictions. The San José City Council will hold a public hearing on June 15, 2021 at 1:30 p.m. or as soon as the matter can be heard, to allow the public to provide comments and feedback. For more information, please contact Nicole Harvie at (408) 277-3671 or nicole.harvie@sanjoseca.gov.
Draft 2020 Urban Water Management Plan
Draft Water Shortage Contingency Plan
REOPENING BUILDINGS AFTER PROLONGED SHUTDOWN OR REDUCED OPERATION
As COVID-19 restrictions are adjusted and buildings begin to reopen, staff who operate and maintain building water systems should be aware of
WATER EMERGENCIES
To report a water emergency during business hours (Monday - Friday, 8:00 a.m. - 5:00 p.m.), please call (408) 535-3500. For after-hours emergencies, call (408) 363-4742.
RELATED LINKS
San Jose Water Company
Great Oaks Water Company
8:37 PM
5/28/2021

PLACEHOLDER

Final June 15, 2021 Council Agenda to be inserted here

Appendix E

AWWA Free Water Audit Software Data Worksheets

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0

? Click to access definition
+ Click to add a comment

Water Audit Report for: San Jose Municipal Water System
Reporting Year: 2016 (1/2016 - 12/2016)

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

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.

Master Meter and Supply Error Adjustments

WATER SUPPLIED

<---------- Enter grading in column 'E' and 'J' ---------->

					Pcnt:	Value:	
Volume from own sources:	3	213.167	MG/Yr	2			MG/Yr
Water imported:	5	4,914.081	MG/Yr	2			MG/Yr
Water exported:	n/a	0.000	MG/Yr				MG/Yr

Enter negative % or value for under-registration
Enter positive % or value for over-registration

WATER SUPPLIED: 5,127.248 MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

			Pcnt:	Value:	
Billed metered:	4	4,383.192	MG/Yr			
Billed unmetered:	n/a	0.000	MG/Yr			
Unbilled metered:	n/a	0.000	MG/Yr			
Unbilled unmetered:	5	12.818	MG/Yr		12.818	MG/Yr

Use buttons to select percentage of water supplied **OR** value

AUTHORIZED CONSUMPTION: 4,396.010 MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption) 731.238 MG/Yr

Apparent Losses

			Pcnt:	Value:	
Unauthorized consumption:		12.818	MG/Yr	0.25%		MG/Yr

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies:	2	17.603	MG/Yr	0.40%	MG/Yr
Systematic data handling errors:		10.958	MG/Yr	0.25%	MG/Yr

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

Apparent Losses: 41.379 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 689.859 MG/Yr

WATER LOSSES: 731.238 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 744.056 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	7	335.0	miles
Number of active AND inactive service connections:	7	27,165	
Service connection density:		81	conn./mile main

Are customer meters typically located at the curbstop or property line? Yes

Average length of customer service line: (length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure: 5 | 91.0 psi

COST DATA

Total annual cost of operating water system:	6	$42,236,725	$/Year
Customer retail unit cost (applied to Apparent Losses):	8	$4.19	$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	5	$4,308.38	$/Million gallons

☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 51 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: Water imported
2: Billed metered
3: Customer metering inaccuracies

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0

? Click to access definition
+ Click to add a comment

Water Audit Report for: San Jose Municipal Water System
Reporting Year: 2017 | 1/2017 - 12/2017

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

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.

Master Meter and Supply Error Adjustments

WATER SUPPLIED

<---------- Enter grading in column 'E' and 'J' ---------->

					Pcnt:	Value:	
Volume from own sources:	3	101.680	MG/Yr	3			MG/Yr
Water imported:	5	5,391.180	MG/Yr	3			MG/Yr
Water exported:	n/a	0.000	MG/Yr				MG/Yr

Enter negative % or value for under-registration
Enter positive % or value for over-registration

WATER SUPPLIED: 5,492.860 MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

			Pcnt:	Value:	
Billed metered:	5	5,226.864	MG/Yr			
Billed unmetered:	n/a	0.000	MG/Yr			
Unbilled metered:	n/a	0.000	MG/Yr			
Unbilled unmetered:	5	13.732	MG/Yr		13.732	MG/Yr

Use buttons to select percentage of water supplied **OR** value

AUTHORIZED CONSUMPTION: 5,240.596 MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption)

252.264 MG/Yr

Apparent Losses

			Pcnt:	Value:	
Unauthorized consumption:		13.732	MG/Yr	0.25%		MG/Yr

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies:	3	26.266	MG/Yr	0.50%	MG/Yr
Systematic data handling errors:		13.067	MG/Yr	0.25%	MG/Yr

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

Apparent Losses: 53.065 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 199.199 MG/Yr

WATER LOSSES: 252.264 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 265.996 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	9	349.0	miles
Number of active AND inactive service connections:	7	27,169	
Service connection density:		78	conn./mile main

Are customer meters typically located at the curbstop or property line? Yes

Average length of customer service line: (length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure: 5 | 91.0 psi

COST DATA

Total annual cost of operating water system:	10	$46,295,103	$/Year
Customer retail unit cost (applied to Apparent Losses):	9	$3.98	$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	5	$4,969.74	$/Million gallons

☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 58 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: Water imported
2: Customer metering inaccuracies
3: Billed metered

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0

? Click to access definition
+ Click to add a comment

Water Audit Report for: San Jose Municipal Water System
Reporting Year: 2018 | 1/2018 - 12/2018

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

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.

Master Meter and Supply Error Adjustments

WATER SUPPLIED

<---------- Enter grading in column 'E' and 'J' ---------->

					Pcnt:	Value:	
Volume from own sources:	3	277.190	MG/Yr	3			MG/Yr
Water imported:	5	5,284.730	MG/Yr	3			MG/Yr
Water exported:	n/a		MG/Yr				MG/Yr

Enter negative % or value for under-registration
Enter positive % or value for over-registration

WATER SUPPLIED: 5,561.920 MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

				Pcnt:	Value:	
Billed metered:	7	5,246.480	MG/Yr			
Billed unmetered:	n/a	0.000	MG/Yr			
Unbilled metered:	n/a	0.000	MG/Yr			
Unbilled unmetered:	5	13.905	MG/Yr		13.905	MG/Yr

Use buttons to select percentage of water supplied **OR** value

AUTHORIZED CONSUMPTION: 5,260.385 MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption) 301.535 MG/Yr

Apparent Losses

				Pcnt:	Value:	
Unauthorized consumption:		13.905	MG/Yr	0.25%		MG/Yr

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies:	5	31.669	MG/Yr	0.60%		MG/Yr
Systematic data handling errors:	5	13.116	MG/Yr	0.25%		MG/Yr

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

Apparent Losses: 58.690 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 242.845 MG/Yr

WATER LOSSES: 301.535 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 315.440 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	9	345.0	miles
Number of active AND inactive service connections:	7	27,212	
Service connection density:		79	conn./mile main

Are customer meters typically located at the curbstop or property line? Yes

Average length of customer service line: (length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure: 5 | 91.0 psi

COST DATA

Total annual cost of operating water system:	10	$41,189,861	$/Year	
Customer retail unit cost (applied to Apparent Losses):	9	$4.34	$/100 cubic feet (ccf)	
Variable production cost (applied to Real Losses):	5	$5,265.08	$/Million gallons	☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 61 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: Water imported
2: Customer metering inaccuracies
3: Variable production cost (applied to Real Losses)

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0

? Click to access definition
+ Click to add a comment

Water Audit Report for: San Jose Municipal Water System (4310020)
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

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.

Master Meter and Supply Error Adjustments

WATER SUPPLIED

<---------- Enter grading in column 'E' and 'J' ---------->

						Pcnt:	Value:	
Volume from own sources:	5	295.510	MG/Yr	3			MG/Yr
Water imported:	5	3,642.970	MG/Yr	3			MG/Yr
Water exported:	n/a	0.000	MG/Yr				MG/Yr

Enter negative % or value for under-registration
Enter positive % or value for over-registration

WATER SUPPLIED: 3,938.480 MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

				Pcnt:	Value:	
Billed metered:	7	3,544.230	MG/Yr			
Billed unmetered:	n/a	0.000	MG/Yr			
Unbilled metered:	n/a	0.000	MG/Yr			
Unbilled unmetered:	5	9.846	MG/Yr		9.846	MG/Yr

Use buttons to select percentage of water supplied **OR** value

AUTHORIZED CONSUMPTION: 3,554.076 MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption) 384.404 MG/Yr

Apparent Losses

			Pcnt:	Value:	
Unauthorized consumption:	9.846	MG/Yr	0.25%		MG/Yr

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies:	3	21.394	MG/Yr	0.60%	MG/Yr
Systematic data handling errors:	5	8.861	MG/Yr	0.25%	MG/Yr

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

Apparent Losses: 40.101 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 344.303 MG/Yr

WATER LOSSES: 384.404 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 394.250 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	9	287.0	miles
Number of active AND inactive service connections:	8	24,339	
Service connection density:		85	conn./mile main

Are customer meters typically located at the curbstop or property line? Yes

Average length of customer service line: (length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure: 5 | 91.0 psi

COST DATA

Total annual cost of operating water system:	10	$30,980,000	$/Year
Customer retail unit cost (applied to Apparent Losses):	9	$4.30	$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	3	$5,070.00	$/Million gallons

☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 58 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: Water imported
2: Customer metering inaccuracies
3: Variable production cost (applied to Real Losses)

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0

? Click to access definition
+ Click to add a comment

Water Audit Report for: San Jose Municipal Water System (4310019)
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

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.

Master Meter and Supply Error Adjustments

WATER SUPPLIED

<---------- Enter grading in column 'E' and 'J' ---------->

					Pcnt:	Value:	
Volume from own sources:	7	10.238	MG/Yr	3			MG/Yr
Water imported:	5	1,546.249	MG/Yr	5			MG/Yr
Water exported:	n/a	0.000	MG/Yr				MG/Yr

Enter negative % or value for under-registration
Enter positive % or value for over-registration

WATER SUPPLIED: 1,556.487 MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

				Pcnt:	Value:	
Billed metered:	7	1,518.370	MG/Yr			
Billed unmetered:	n/a	0.000	MG/Yr			
Unbilled metered:	n/a	0.000	MG/Yr			
Unbilled unmetered:	5	3.891	MG/Yr		3.891	MG/Yr

Use buttons to select percentage of water supplied **OR** value

AUTHORIZED CONSUMPTION: 1,522.261 MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption)

34.225 MG/Yr

Apparent Losses

			Pcnt:	Value:	
Unauthorized consumption:	3.891	MG/Yr	0.25%		MG/Yr

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies:	3	9.165	MG/Yr	0.60%	MG/Yr
Systematic data handling errors:	5	3.796	MG/Yr	0.25%	MG/Yr

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

Apparent Losses: 16.852 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 17.373 MG/Yr

WATER LOSSES: 34.225 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 38.117 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	9	59.0	miles
Number of active AND inactive service connections:	8	2,922	
Service connection density:		50	conn./mile main

Are customer meters typically located at the curbstop or property line? Yes

Average length of customer service line: (length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure: 5 — 86.0 psi

COST DATA

Total annual cost of operating water system:	10	$14,880,000	$/Year	
Customer retail unit cost (applied to Apparent Losses):	9	$5.06	$/100 cubic feet (ccf)	
Variable production cost (applied to Real Losses):	3	$6,460.00	$/Million gallons	☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 58 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: Water imported
2: Customer metering inaccuracies
3: Variable production cost (applied to Real Losses)

Appendix F

San José Municipal Code

Chapter 15.10 - WATER WASTE PREVENTION AND WATER SHORTAGE MEASURES

Part 1 - GENERAL PROVISIONS

15.10.010 - Purpose.

The City of San José is dedicated to long-term water conservation to address the chronic water shortage, to protect the aquifers of the city, and to prevent land surface subsidence. Moreover, the city is subject to periodic droughts, a circumstance which requires the city council to take steps to protect the health, safety and general welfare of the public.

(Ord. 24600.)

15.10.020 - Definitions.

The definitions set forth in this part shall govern the application and interpretation of this chapter.

(Ord. 24600.)

15.10.030 - Potable water.

A. "Potable water" means water of a quality which meets California Department of Health Services and San Francisco Bay Regional Water Quality Control Board requirements for water suitable for human consumption.

B. "Potable water" does not include bottled drinking water; reclaimed water; recycled or so-called "gray water"; water brought into the County of Santa Clara by truck; water from dewatering operations; water pollution control plant effluent; or water pumped for remediation purposes pursuant to a permit from the Santa Clara Valley Water District or the San Francisco Bay Regional Water Quality Control Board.

(Ord. 24600.)

15.10.040 - Gray water.

"Gray water" means water which is collected and recycled or reused after its original use.

(Ord. 24600.)

15.10.045 - Food service establishment.

"Food service establishment" means a user that prepares and/or sells food for consumption either on or off the premises or washes utensils or dishes on premises, including, but not limited to, restaurants, sandwich shops, delicatessens, bakeries, cafeterias, markets, bed and breakfast inns, motels, hotels, meeting halls, caterers, retirement and nursing homes or pizzerias.

(Ord. 28597.)

15.10.050 - Reclaimed water.

"Reclaimed water" means water which, as a result of treatment of domestic wastewater, or groundwater cleanup discharge, is suitable for direct beneficial use or a controlled use that would not otherwise occur.

(Ord. 24600.)

15.10.060 - Water from dewatering operations.

"Water from dewatering operations" means water which is extracted from the ground or a sump to prevent the flooding of a building, structure, or excavation.

(Ord. 24600.)

15.10.070 - Syringing.

"Syringing" means the watering of golf course greens, golf course tees, lawn bowling greens, or tennis greens, for a period not to exceed ten minutes per hour.

(Ord. 24600.)

15.10.080 - Landscape irrigation audit.

"Landscape irrigation audit" means a process to perform site inspections, evaluate irrigation systems, and develop efficient irrigation schedules.

(Ord. 24600.)

15.10.090 - Automatic positive self-closing valve.

"Automatic positive self-closing valve" is a valve that requires a person using a hose to apply and maintain pressure at the outlet end of the hose to activate the flow of water.

(Ord. 24600.)

15.10.095 - Director.

Except as otherwise explicitly stated, "director" means the director of the environmental services department.

(Ord. 24600.)

Part 2 - WATER WASTE PREVENTION

15.10.200 - Water waste prevention.

A. The regulations in this part are intended to be permanent water conservation measures and to apply to the use of water from all sources on an on-going basis.
B. No person shall waste water from any source nor shall any person allow such water wastage.
C. No person shall use any water from any source, or continue the use of any water from any source, in any way prohibited by this chapter.

(Ord. 24600.)

15.10.210 - Repair of plumbing, sprinkler and irrigation systems.

A. No owner or manager or other person responsible for the day-to-day operation of any premises shall fail to

initiate repair of any leaking, broken or defective water pipes, faucets, plumbing fixtures, other water service appliances, sprinklers, watering or irrigation systems within five (5) working days after the owner, manager or other responsible person knew or should have known of such leaks, breaks or defects.

B. No owner or manager or other person responsible for the day-to-day operation of any premises shall fail to complete repair of any leaking, broken or defective water pipes, faucets, plumbing fixtures, other water service appliances, sprinklers, watering or irrigation systems, as soon as practical after initiation of such repair.

(Ord. 24600.)

15.10.220 - Water run-off prohibited.

A. No person shall use any water in any manner which results in run-off onto sidewalks, driveways, gutters or streets, except for water used in accordance with Sections 15.10.240 or 15.10.250.

B. No person shall use any water in any manner which results in run-off beyond the immediate area of use, or the pooling or puddling of water, except for water used in accordance with Sections 15.10.240 or 15.10.250.

(Ord. 24600.)

15.10.230 - Food service establishments.

A. No person shall provide any water to any customer at any food service establishment unless and until the customer requests water.

B. No person shall use any non-water conserving dish wash spray valve in any food service establishment

(Ords. 24600, 28597.)

15.10.235 - Hotels, motels and other lodgings.

The owner and manager of every hotel, motel, inn, guest house, bed and breakfast facility, and every other short-term commercial lodging shall prominently display a written notice in each bathroom of the facility providing customers or guests with the option of helping to conserve water by not having towels and linens laundered daily.

(Ord. 28597.)

15.10.240 - Cleaning of structures and surfaces.

No person shall use water through a hose to clean the exterior of any building or any structure or to clean sidewalks, driveways, patios, decks, tennis courts, parking lots or any other exterior paved or hard-surfaced areas, unless such hose is equipped with an automatic positive self-closing valve.

(Ord. 24600.)

15.10.250 - Washing of vehicles.

No person shall use any water through a hose to wash any car, truck, boat, trailer, bus, recreational vehicle, camper, or any other vehicle, or any portion thereof, unless such hose is equipped with an automatic positive self-closing valve.

(Ord. 24600.)

15.10.255 - Commercial car washes.

No owner, manager or employee of a commercial car wash facility shall use any water to wash, or allow or permit the use of any water to wash, any car, truck, boat, trailer, bus, recreation vehicle, camper or any other vehicle, or any portion thereof, except if such person can demonstrate that such washing is exclusively by one of the following methods:

A. Use of mechanical automatic car wash facilities utilizing water recycling equipment.

B. Use of a bucket and handwashing.

C. Use of a hose equipped with an automatic positive self-closing valve.

(Ord. 24600.)

15.10.260 - Building and construction.

No person shall use, permit or allow the use of potable water for building or construction purposes, such as consolidation of backfill or dust control, without a prior approved written exception from the city.

(Ord. 24600.)

15.10.270 - Hydrants.

No person, except a water company for the purpose of necessary hydrant or water distribution system maintenance, or under the direction of the city's fire chief for firefighting or fire sprinkler maintenance, shall use, permit or allow the use of any water or flushing of any water from any fire hydrant, without a prior approved written exception from the city.(Ord. 24600.)

15.10.290 - Landscape irrigation.

A. No person shall use, permit or allow the use of potable water to irrigate any outdoor landscaping at any time between the hours of 10:00 a.m. and 8:00 p.m., unless the person using, permitting or allowing the use of the water is using a bucket, hand-carried container, or a hose equipped with an automatic positive self-closing valve.

B. No person shall use, permit or allow the use of potable water to irrigate any outdoor landscaping or other vegetated area more than fifteen minutes per day per station when using a landscape irrigation system or a watering device that is not continuously attended, except for landscape irrigation systems that exclusively use very low-flow drip-type irrigation systems when no emitter produces more than two gallons of water per hour and weather-based controllers or stream rotor sprinklers that meet a seventy-one percent efficiency standard.

C. The restrictions on landscape irrigation contained in this section do not apply to the following activities or during the following periods of time:

1. Syringing of golf course greens, golf course tees, lawn bowling greens or lawn tennis courts;

2. The conduct of a landscape water management audit to provide for the evaluation and adjustment of a landscape irrigation system; or

3. During plant establishment periods as defined in Section 15.11.390 of this code.

(Ords. 24600, 28597, 29243.)

15.10.295 - Use of reclaimed water.

No person shall use, permit or allow the use of potable water to irrigate any outdoor landscaping, where an irrigation system has been installed to allow for use of reclaimed water and reclaimed water is available to the property for irrigation use.

(Ord. 24600.)

Part 3 - WATER SHORTAGE MEASURES

15.10.300 - Water shortage measures.

A. The city council may, by resolution, declare a state of water shortage whenever it finds that water supplies are expected to be inadequate to meet at least ninety percent of projected water demand, or whenever a minimum conservation level of ten percent or more has been established by the Santa Clara Valley Water District.
B. In adopting such a resolution, the city council may declare whether the water shortage is a ten percent shortage; a twenty-five percent shortage; a thirty percent shortage; or a forty percent shortage. In the event that a water shortage resolution adopted by the city council fails to declare the level of water shortage, the resolution shall be deemed to be a resolution of a ten percent water shortage.
C. In addition to the requirements of Part 2 of this chapter, the provisions of this Part 3 shall apply to all uses of water for such period of time as a water shortage resolution adopted by the council remains in effect.

(Ords. 24600, 28597.)

15.10.310 - Landscape irrigation restrictions.

After adoption by the city council of a resolution declaring a ten percent or greater water shortage, it shall be unlawful for any person to use or allow the use of potable water to irrigate any outdoor landscaping more than zero to four days per week, according to the schedule and with such exceptions, as may be set forth in the council resolution declaring such drought.

(Ords. 24600, 29555, 29556.)

15.10.320 - Ornamental lakes and ponds.

Upon adoption by the City Council of a resolution declaring a twenty-five percent or greater water shortage, no person shall cause, permit or allow filling or re-filling ornamental lakes or ponds with potable water, except to the extent needed to sustain aquatic life that is of significant value and which has been actively managed within the water feature prior to declaration of a supply shortage level by the city council.

(Ords. 24600, 28597.)

15.10.325 - Car washing.

Upon adoption by the City Council of a resolution declaring a twenty-five percent or greater water shortage, no person shall cause, permit or allow the use of water to wash or clean a vehicle, except at a commercial car washing facility that utilizes a re- circulating water system to capture or reuse water.

(Ords. 24600, 28597.)

15.10.330 - Residential swimming pools and outdoor spas.

Upon adoption by the city council of a resolution declaring a thirty percent or greater water shortage, no person shall cause, permit or allow initial filling or re-filling of more than one foot except for re-filling after repair for leaks, of residential swimming pools or outdoor spas with potable water, except for re-filling after repair for leaks.

(Ords. 24600, 28597, 29555, 29556.)

15.10.340 - Cleaning of structures and surfaces.

After adoption by the city council of a resolution declaring a twenty-five percent or greater water shortage, it shall be unlawful for any person to:

A. Use potable water, to clean sidewalks, driveways, patios, decks, tennis courts, parking lots or any other exterior paved or hard-surfaced areas, except by the use of a bucket or pursuant to a prior approved written exception from the director.
B. Use potable water, to clean the exterior of any building or structure, except as surface preparation for the application of any architectural coating, or in connection with waxing, except by the use of a bucket or pursuant to a prior approved written exception from the director. For purposes of this section, "structures" includes mobile homes and manufactured homes.

(Ords. 24600, 28597.)

15.10.350 - Operation of decorative fountains.

After the adoption by the city council of a resolution declaring a twenty-five percent or greater water shortage, it shall be unlawful for any person to operate any decorative fountain with potable water unless such decorative fountain is recirculating, non- misting and fully lined.

(Ords. 24600, 28597.)

15.10.355 - Leak repair.

A. Upon adoption by the city council of a resolution declaring a forty percent or greater water shortage no owner or manager or other person responsible for the day-to-day operation of any premises shall fail to initiate repair of any leaking, broken or defective water pipes, faucets, plumbing fixtures, other water service appliances, sprinklers, watering or irrigation systems within forty eight hours after the owner, manager or other responsible person knew or should have known of such leaks, breaks or defects.
B. Upon adoption by the city council of a resolution declaring a forty percent or greater water shortage no owner or manager or other person responsible for the day-to-day operation of any premises shall fail to complete repair of any leaking, broken or defective water pipes, faucets, plumbing fixtures, other water service appliances, sprinklers, watering or irrigation systems, as soon as practical after initiation of such repair.

(Ord. 28597.)

15.10.360 - New landscape installation.

After adoption by the city council of a resolution declaring a thirty percent or greater water shortage, it shall be unlawful for any person to install new outdoor landscaping, or plantings, during the months of May through October in an area with an overhead irrigation system unless the overhead irrigation system is disconnected, removed or converted to drip irrigation as defined in Section 15.11.340 of Part 2 of Chapter 15.11 of this Title 15, except for:

A. Installation of drought-tolerant or native plants, or plants or trees grown for consumption; or
B. Installation that has been commenced prior to the date of the council resolution declaring the thirty percent water shortage pursuant to a development permit or building permit for which a landscape documentation package has been submitted to the city; or
C. Installation on a project for which a development permit application has been filed prior to the date of the council resolution declaring the thirty percent water shortage, and which is located in an employment lands area, as designated in the City of San José Envision 2040 General Plan or subsequent equivalent document.

(Ords. 24600, 29555, 29556.)

15.10.365 - Hydrants.

After adoption by the city council of a resolution declaring a thirty percent or greater water shortage, it shall be unlawful for any person, except a water company for the purpose of necessary hydrant or water distribution system maintenance, or under the direction of the city's fire chief for firefighting or fire sprinkler maintenance, to use or allow the use of any water or flushing of any water from any fire hydrant.

(Ord. 24600.)

15.10.370 - Reserved.

Editor's note— Ord. No. 29555, § 4, adopted April 21, 2015, repealed § 15.10.370, which pertained to prohibition on landscape irrigation and derived from Ords. 24600, 28597. Section 15.10.370 was also subsequently repealed by Ord. No. 29556, § 4, adopted May 5, 2015.

15.10.375 - Filling pools, spas and fountains.

After adoption by the city council of a resolution declaring a forty percent or greater water shortage, it shall be unlawful for any person to fill any swimming pool, fountain or spa.

(Ord. 24600.)

15.10.380 - Exception requests.

A. Any person seeking an exception to the use of potable water under any provision of this chapter shall file a written request for exception on a form provided by the city, documenting the reasons why there is no other alternative to the use of potable water for the specified purpose, and why no other source of water, such as reclaimed water or water from dewatering operations, can be used.
B. Any request for exception filed under this section shall be accompanied by an exception review fee. The amount of the exception review fee shall be as set forth in the schedule of fees established by resolution of the city council.
C. No request for an exception shall be accepted for review until the fee has been paid.

D. Requests for exceptions shall be filed with the director of environmental services, except that requests under Sectic 15.10.260 shall be filed with the director of public works.

E. No exception shall be granted unless the director of the department with which it is required to be filed determines that there is no other alternative to potable water reasonably available for the specified purpose, and that no other source of water, such as reclaimed water or water from dewatering operations, can reasonably be used.

F. The directors of environmental services and public works are authorized to promulgate joint guidelines for determining when other alternative sources of water will be considered reasonably available.

(Ord. 24600.)

15.10.390 - Fee for placards.

Whenever the director provides placards or decals to businesses for use in compliance with this chapter, the director shall first collect from such businesses a fee as set forth in the schedule of fees adopted by resolution of the city council.

(Ord. 24600.)

Part 4 - WATER MANAGEMENT

15.10.400 - Landscape irrigation audit required.

The owner of any property that is subject to the requirements of Chapter 15.11 of this Code, and any owner of property having a landscaped area (as defined in Section 15.11.126) of one acre or more, including golf courses, green belts, common areas, multifamily housing, schools, businesses, parks, cemeteries, and publicly owned landscapes, shall cause a landscape irrigation audit of the property to be performed at least every five years.

(Ord. 24600.)

15.10.410 - Certificate in lieu of landscape irrigation audit.

A. If a landscaped area is using no more than twenty-two and one-half gallons of water per year per square foot, in lieu of an audit, the owner of the property may file a certificate, under penalty of perjury, stating that the area is using no more than twenty-two and one-half gallons of water per square foot per year.

B. The certificate shall be supported by a calculation of the average annual water usage for the area, based on water bills, covering at least one year, and no more than five years, immediately preceding the date on which a landscape irrigation audit would otherwise be due.

(Ord. 24600.)

15.10.420 - Format and filing of audits and certificates.

Landscape irrigation audits and certificates shall be filed with the director. The form of the audit and certificate and the information and data to be provided thereby shall be as prescribed by the director.

(Ord. 24600.)

15.10.430 - Due date for audits and certificates.

A. For landscaped areas in existence on January 1, 1993, landscape irrigation audits shall be due on June 1, 1998, and e five years thereafter.

B. For landscaped areas installed after January 1, 1993, audits shall be due sixty-six months after installation of the landscaped area, and every five years thereafter.

(Ord. 24600.)

Chapter 15.11 - WATER EFFICIENT LANDSCAPE STANDARDS FOR NEW AND REHABILITATED LANDSCAPING

Part 1 - GENERAL PROVISIONS

15.11.010 - Purpose.

The purpose of this chapter is to promote the conservation and efficient use of water, and to prevent the waste of this valuable resource by regulating landscape design, installation, and maintenance consistent with the Water Conservation in Landscaping Act, California Government Code Section 65591 et seq.

(Ord. 29243.)

15.11.020 - Applicability.

A. The requirements of this chapter shall apply to the following projects:

1. New construction projects with a total landscape area equal to or greater than five hundred square feet that require a building permit pursuant to the provisions of Title 24 of this Code or development permit pursuant to the provisions of Chapter 20.100 of Title 20 of this Code; or
2. Rehabilitated landscape projects with a total landscape area equal to or greater than two thousand five hundred square feet that require a building permit pursuant to the provisions of Title 24 of this Code or a development permit pursuant to the provisions of Chapter 20.100 of Title 20 of this Code.

B. Notwithstanding the provisions of Subsection A above, the requirements of this chapter shall not apply to:

1. Registered historic sites;
2. Ecological restoration projects that do not require a permanent irrigation system;
3. Hydraulic mulch seeding (hydroseeding) for erosion/sedimentation control projects where a permanent irrigation system is not required;
4. Mined-land reclamation projects that do not require a permanent irrigation system;
5. Community gardens, and existing plant collections as part of botanical gardens and arboretums open to the public; and
6. The commercial cultivation of agricultural products including, but not limited to, products from farms, orchards, production nurseries, and forests.

C. Notwithstanding the provisions of Subsection A above, only Sections 15.11.920, 15.11.1030 and 15.11.1040 shall apply to new construction and rehabilitated landscape projects within a cemetery.

D. Notwithstanding the provisions of Subsection A above, only Section 15.11.900.B.1.e shall apply to projects with less than two thousand five hundred square feet of landscaping that use treated or untreated graywater or groundwater captured on site to meet the project's entire landscape water requirement.

E. Notwithstanding the provisions of Subsection A above, the provisions of Sections 15.11.970, 15.11.980 and

15.11.990 shall not apply to landscaped areas only requiring temporary irrigation solely for the plant establishment period.

(Ords. 29243, 29671.)

Part 2 - DEFINITIONS

15.11.200 - Definitions.

The definitions set forth in this part shall govern the application and interpretation of this chapter.

(Ord. 29243.)

15.11.210 - Anti-drain valve.

"Anti-drain valve" or "check valve" means a valve located under a sprinkler head to hold water in the system so it minimizes drainage from the lower elevation sprinkler heads.

(Ord. 29243.)

15.11.220 - Applicant.

"Applicant" means the individual or entity submitting a landscape documentation package, as part of an application for a development permit or a building permit.

(Ord. 29243.)

15.11.230 - Application rate.

"Application rate" means the depth of water applied to a given area, usually measured in inches per hour.

(Ord. 29243.)

15.11.240 - Applied water.

"Applied water" means the water supplied to the landscape area by the irrigation system.

(Ord. 29243.)

15.11.250 - Automatic irrigation controller.

"Automatic irrigation controller" is a timing device used to remotely control valves that operates an irrigation system. Automatic irrigation controllers are able to self-adjust and schedule irrigation events using either evapotranspiration (weather-based) or soil moisture data.

(Ords. 29243, 29671.)

15.11.260 - Backflow prevention device.

"Backflow prevention device" means a safety device used to prevent pollution or contamination of the water supply due to the reverse flow of water from the irrigation system.

(Ord. 29243.)

15.11.265 - Building permit.

"Building permit" means a permit required for new construction pursuant to the provisions of Section 24.02.100 of Chapter 24.02 of Title 24 of this Code.

(Ord. 29243.)

15.11.270 - Certificate of completion.

"Certificate of completion" means the document specified in Section 15.11.1050.

(Ord. 29243.)

15.11.280 - Certified irrigation designer.

"Certified irrigation designer" means a person certified to design irrigation systems by an accredited academic institution, a professional trade organization, or other program such as the U.S. Environmental Protection Agency's Water Sense irrigation designer certification program, or the Irrigation Association's Certified Irrigation Designer program.

(Ord. 29243.)

15.11.290 - Certified landscape irrigation auditor.

"Certified landscape irrigation auditor" means a person certified to perform landscape irrigation audits by an accredited academic institution, a professional trade organization, or other program such as the U.S. Environmental Protection Agency's Water Sense irrigation auditor certification program and Irrigation Association's Certified Landscape Irrigation Auditor program.

(Ord. 29243.)

15.11.300 - Check valve.

"Check valve" or "anti-drain valve" means a valve located under a sprinkler head, or other location in the irrigation system, to hold water in the system to prevent drainage from sprinkler heads when the sprinkler is off.

(Ord. 29243.)

15.11.305 - Compost.

"Compost" means the safe and stable product of controlled biologic decomposition of organic materials that is beneficial to plant growth.

(Ord. 29671.)

15.11.310 - Conversion factor (0.62).

"Conversion factor (0.62)" means the number that converts acre-inches per acre per year to gallons per square foot per year.

(Ord. 29243.)

15.11.320 - Development permit.

"Development permit" means any permit issued pursuant to Chapter 20.100 of Title 20 of this Code, with the exception of a sidewalk café permit issued pursuant to Part 12 of Chapter 20.100.

(Ord. 29243.)

15.11.330 - Director.

"Director" means the director of planning, building and code enforcement.

(Ord. 29243.)

15.11.335 - Distribution uniformity.

"Distribution uniformity" means the measure of the uniformity of irrigation water over a defined area.

(Ord. 29671.)

15.11.340 - Drip irrigation.

"Drip irrigation" means any non-spray low-volume irrigation system utilizing emission devices, with a flow rate measured in gallons per hour. Low-volume irrigation systems are specifically designed to apply small volumes of water slowly at or near the root zone of plants.

(Ord. 29243.)

15.11.350 - Ecological restoration project.

"Ecological restoration project" means a project where the site is intentionally altered to establish a defined, indigenous, historic ecosystem.

(Ord. 29243.)

15.11.360 - Effective precipitation or usable rainfall.

"Effective precipitation" or "usable rainfall (Eppt)" means the portion of total precipitation that becomes available for plant growth.

(Ord. 29243.)

15.11.370 - Emitter.

"Emitter" means a drip irrigation emission device that delivers water slowly from the system to the soil.

(Ord. 29243.)

15.11.380 - Established landscape.

"Established landscape" means the point at which plants in the landscape have developed significant root growth into the soil. Typically, most plants are established after one or two years of growth, but native habitat mitigation area and trees may need three to five years for establishment.

(Ords. 29243, 29671.)

15.11.390 - Establishment period.

"Establishment period" means the first year after installing plants in the landscape, or the first two years, if irrigation will be terminated after establishment. Typically, most plants are established after one or two years of growth.

(Ord. 29243.)

15.11.400 - Estimated total water use (ETWU).

"Estimated total water use (ETWU)" means the total water use for the landscape area, estimated by applying the formula in Section 15.11.900.

(Ord. 29243.)

15.11.410 - Evapotranspiration adjustment factor (ETAF).

"Evapotranspiration adjustment factor (ETAF)" means a factor of 0.55 for residential landscape and 0.45 for non-residential landscape, that, when applied to reference evapotranspiration, adjusts for plant factors and irrigation efficiency, two major influences upon the amount of water that needs to be applied to the landscape area. The ETAF for existing non-rehabilitated landscapes is 0.8. The ETAF for a new and existing (non-rehabilitated) special landscape area shall not exceed 1.0.

(Ords. 29243, 29671.)

15.11.420 - Flow rate.

"Flow rate" means the rate at which water flows through pipes, valves and emission devices, measured in gallons per minute, gallons per hour, or cubic feet per second.

(Ord. 29243.)

15.11.422 - Flow sensor.

"Flow sensor" means an inline device installed at the supply point of the irrigation system that produces a repeatable signal proportional to flow rate. Flow sensors must be connected to an automatic irrigation controller, or flow monitor capable of receiving flow signals and operating master valves. A flow sensor connected to an automatic irrigation controller may also function as a landscape water meter or submeter.

(Ord. 29671.)

15.11.424 - Friable.

"Friable" means a soil condition that is easily crumbled or loosely compacted down to a minimum depth per planting material requirements, whereby the root structure of newly planted material will be allowed to spread unimpeded.

(Ord. 29671.)

15.11.426 - Fuel modification plan guideline.

"Fuel modification plan guideline" means guidelines from a local fire authority to assist residents and businesses that are developing land or building structures in a fire hazard severity zone.

(Ord. 29671.)

15.11.428 - Graywater.

"Graywater" means untreated wastewater that has not been contaminated by any toilet discharge, has not been affected by infectious, contaminated, or unhealthy bodily wastes, and does not present a threat from contamination by unhealthful processing, manufacturing, or operating wastes. "Graywater" includes, but is not limited to, wastewater from bathtubs, showers, bathroom washbasins, clothes washing machines, and laundry tubs, but does not include wastewater from kitchen sinks or dishwashers.

(Ord. 29671.)

15.11.430 - Hardscapes.

"Hardscapes" means any durable material, pervious and non-pervious.

(Ord. 29243.)

15.11.440 - Hydrozone.

"Hydrozone" means a portion of the landscape area having plants with similar water needs and rooting depth. A hydrozone may be irrigated or non-irrigated.

(Ords. 29243, 29671.)

15.11.450 - Infiltration rate.

"Infiltration rate" means the rate of water entry into the soil expressed as a depth of water per unit of time (e.g., inches per hour).

(Ord. 29243.)

15.11.460 - Invasive plant species.

"Invasive plant species" means species of plants not historically found in California that spread outside cultivated areas and can damage environmental or economic resources. Invasive plant species may be regulated by county agricultural agencies as noxious species. Lists of invasive plant species are maintained at the California Invasive Plant Inventory and USDA invasive and noxious weeds database.

(Ords. 29243, 29671.)

15.11.470 - Irrigation audit.

"Irrigation audit" means an in-depth evaluation of the performance of an irrigation system conducted by a certified landscape irrigation auditor. An irrigation audit includes, but is not limited to: inspection, system tune-up, system test with distribution uniformity or emission uniformity, reporting overspray or runoff that causes overland flow, and preparation of an irrigation schedule. The audit must be conducted in a manner consistent with the irrigation association's landscape irrigation auditor certification program or other U.S. Environmental Protection Agency "Watersense" labeled auditing program.

(Ords. 29243, 29671.)

15.11.480 - Irrigation efficiency.

"Irrigation efficiency (IE)" means the measurement of the amount of water beneficially used divided by the amount of water applied. Irrigation efficiency is derived from measurements and estimates of irrigation system characteristics and management practices. The irrigation efficiency for purposes of this chapter is 0.75 for overhead spray devices and 0.81 for drip irrigation systems.

(Ords. 29243, 29671.)

15.11.490 - Landscape architect.

"Landscape architect" means a person who holds a license to practice landscape architecture in the State of California, pursuant to California Business and Professions Code, Section 5615, as may be amended.

(Ord. 29243.)

15.11.500 - Landscape area.

"Landscape area" means all the planting areas, and water features in a landscape design plan. The landscape area does not include footprints of buildings or structures, sidewalks, driveways, parking lots, decks, patios, gravel or stone walks, other pervious or non-pervious hardscapes, and other non-irrigated areas designated for non-development (e.g., open spaces and existing native vegetation).

(Ord. 29243.)

15.11.510 - Landscape contractor.

"Landscape contractor" means a person licensed by the State of California to construct, maintain, repair, install, or subcontract the development of landscape systems.

(Ord. 29243.)

15.11.520 - Landscape documentation package.

"Landscape documentation package" means the documents required under Section 15.11.910.

(Ord. 29243.)

15.11.530 - Landscape project.

"Landscape project" means the total area of landscape in a project as defined in "landscape area" under Section 15.11.500 for purposes of this chapter, that meets the applicability requirements set forth in Section 15.11.020.

(Ord. 29243.)

15.11.535 - Landscape water meter.

"Landscape water meter" means an inline device installed at the irrigation supply point that measures the flow of water into the irrigation system and is connected to a totalizer to record water use.

(Ord. 29671.)

15.11.540 - Lateral line.

"Lateral line" means the water delivery pipeline that supplies water to the emitters or sprinklers from the valve.

(Ord. 29243.)

15.11.550 - Local water purveyor.

"Local water purveyor" means any entity, including a public agency, city, county, city and county, or private water company that provides retail water service.

(Ord. 29243.)

15.11.560 - Low-volume irrigation.

"Low-volume irrigation" means the application of irrigation water at low pressure through a system of tubing or lateral lines and low-volume emitters such as drip irrigation, drip lines, and bubblers. Low-volume irrigation systems are specifically designed to apply small volumes of water slowly at or near the root zone of plants.

(Ord. 29243.)

15.11.570 - Main line.

"Main line" means the pressurized pipeline that delivers water from the water source to the valve or outlet.

(Ord. 29243.)

15.11.575 - Master shut-off valve.

"Master shut-off valve" is an automatic valve installed at the irrigation supply point which controls water flow into the irrigation system. When the master shut-off valve is closed water will not be supplied to the irrigation system. A master shut-off valve will greatly reduce any water loss due to a leaky station valve.

(Ord. 29671.)

15.11.580 - Maximum applied water allowance (MAWA).

"Maximum applied water allowance (MAWA)" means the upper limit of annual applied water for the established landscape area. It is based upon the reference evapotranspiration, the ET adjustment factor, and the size of the landscape area. The estimated total water use shall not exceed the maximum applied water allowance. Special landscape areas, including recreational areas, areas permanently and solely dedicated to edible plants such as orchards and vegetable gardens are subject to the MAWA with an ETAF not to exceed 1.0.

(Ord. 29243.)

15.11.585 - Median.

"Median" is an area between opposing lanes of traffic that may be unplanted or planted with trees, shrubs, perennials, and ornamental grasses.

(Ord. 29671.)

15.11.590 - Mined-land reclamation projects.

"Mined-land reclamation projects" mean any surface mining operation with a reclamation plan approved in accordance with the Surface Mining and Reclamation Act of 1975, as may be amended.

(Ord. 29243.)

15.11.600 - Mulch.

"Mulch" means any organic material such as leaves, bark, straw, compost, or inorganic mineral materials such as rocks, gravel, and decomposed granite left loose and applied to the soil surface for the beneficial purposes of reducing evaporation, suppressing weeds, moderating soil temperature, and preventing soil erosion.

(Ord. 29243.)

15.11.610 - New construction.

"New construction" means, for the purposes of this chapter, a new building with a landscape or other new landscape, such as a park, playground, or greenbelt without an associated building.

(Ord. 29243.)

15.11.615 - Non-residential landscape.

"Non-residential landscape" means landscapes in commercial, institutional, industrial and public settings that may have areas designated for recreation or public assembly. It also includes portions of common areas of common interest developments with designated recreational areas.

(Ord. 29671.)

15.11.620 - Operating pressure.

"Operating pressure" means the pressure at which the parts of an irrigation system are designed by the manufacturer to operate.

(Ord. 29243.)

15.11.625 - Overhead sprinkler irrigation systems.

"Overhead sprinkler irrigation systems" means systems that deliver water through the air (e.g., spray heads and rotors).

(Ord. 29243.)

15.11.630 - Overspray.

"Overspray" means the water which is delivered beyond the target area.

(Ord. 29243.)

15.11.640 - Pervious.

"Pervious" means any surface or material that allows the passage of water through the material and into the underlying soil.

(Ord. 29243.)

15.11.650 - Plant factor.

"Plant factor" is a factor, when multiplied by the reference evapotranspiration ("ETo", measured in inches per year), estimates the amount of water needed by plants. For purposes of this chapter, the plant factor range for very low water use plants is 0.0 to 0.1, the plant factor range for low water use plants is 0.1 to 0.3, the plant factor range for moderate water use plants is 0.4 to 0.6, and the plant factor range for high water use plants is 0.7 to 1.0. Plant factors cited in this chapter are derived from the publication "Water Use Classification of Landscape Species" ("WUCOLS") as may be amended. Plant factors may also be obtained from horticultural researchers from academic institutions or professional associations as approved by the California Department of Water Resources (DWR).

(Ords. 29243, 29671.)

15.11.660 - Precipitation rate.

"Precipitation rate" means the rate of application of water measured in inches per hour.

(Ord. 29243.)

15.11.670 - Record drawing.

"Record drawing" or "as-builts" means a set of reproducible drawings which show significant changes in the work made during construction and which are usually based on drawings marked up in the field and other data furnished by the contractor.

(Ord. 29243.)

15.11.680 - Recreational area.

"Recreational area" means areas, excluding private single-family residential areas, designated for active play, recreation, or public assembly, in parks, sports fields, picnic grounds, amphitheater, or golf courses, tees, fairways, roughs, surrounds and greens.

(Ords. 29243, 29671.)

15.11.690 - Recycled water.

"Recycled water" means treated or recycled wastewater of a quality suitable for non-potable uses including landscape irrigation and water features. This water is not intended for human consumption.

(Ord. 29243.)

15.11.700 - Reference evapotranspiration (ETo).

"Reference evapotranspiration (ETo)" means a standard measurement of environmental parameters which affect the water use of plants. ETo is expressed in inches per day, month, or year, and is an estimate of the evapotranspiration of a large field of four- to seven-inch tall, cool-season grass that is well watered. Reference evapotranspiration is used as the basis of determining the maximum applied water allowance so that regional differences in climate can be accommodated.

(Ord. 29243.)

15.11.710 - Rehabilitated landscape.

"Rehabilitated landscape" means any re-landscaping project that requires a development permit or a building permit where the modified landscape area is equal to or greater than two thousand five hundred square feet.

(Ords. 29243, 29671.)

15.11.715 - Residential landscape.

"Residential landscape" means landscapes surrounding single-family or multifamily homes.

(Ord. 29671.)

15.11.718 - Registered historic site.

Sites and/or structures and/or buildings that are either designated city landmarks, California Historical Landmarks, or listed in the California Register of Historical Places.

(Ord. 29671.)

15.11.720 - Runoff.

"Runoff" means water which is not absorbed by the soil or landscape to which it is applied and flows from the landscape area. For example, runoff may result from water that is applied at too great a rate (application rate exceeds infiltration rate), or when there is a slope.

(Ord. 29243.)

15.11.730 - Soil moisture sensor.

"Soil moisture sensor" means a device that measures the amount of water in the soil. The device may also initiate or suspend an irrigation event.

(Ord. 29243.)

15.11.740 - Soil texture.

"Soil texture" means the classification of soil based on its percentage of sand, silt, and clay.

(Ord. 29243.)

15.11.750 - Special landscape area (SLA).

"Special landscape area (SLA)" means an area of the landscape dedicated solely to edible plants, water features and areas using recycled water, and/or recreational areas.

(Ords. 29243, 29671.)

15.11.760 - Sprinkler head.

"Sprinkler head" means a device which delivers water through a nozzle.

(Ord. 29243.)

15.11.770 - Static water pressure.

"Static water pressure" means the pipeline or local water purveyor's water supply pressure when water is not flowing.

(Ord. 29243.)

15.11.780 - Station.

"Station" means an area served by one valve or by a set of valves that operate simultaneously.

(Ord. 29243.)

15.11.785 - Submeter.

"Submeter" means a metering device to measure water applied to the landscape that is installed after the primary utility water meter.

(Ord. 29671.)

15.11.790 - Swing joint.

"Swing joint" means an irrigation component that provides a flexible, leak-free connection between the emission device and lateral pipeline to allow movement in any direction and to prevent equipment damage.

(Ord. 29243.)

15.11.800 - Turf.

"Turf" means a ground cover surface of mowed, natural grass.

(Ord. 29243.)

15.11.810 - Valve.

"Valve" means a device used to control the flow of water in the irrigation system.

(Ord. 29243.)

15.11.820 - Water conserving plant species.

"Water conserving plant species" means a plant species identified as having a low plant factor.

(Ord. 29243.)

15.11.830 - Water feature.

"Water feature" means a design element where open water performs an aesthetic or recreational function. Water features include ponds, lakes, waterfalls, fountains, artificial streams, spas, and swimming pools (where water is artificially supplied). The surface area of water features is included in the high water use hydrozone of the landscape area. Constructed wetlands used for on-site wastewater treatment or stormwater best management practices that are not irrigated and used solely for water treatment or stormwater retention are not water features and, therefore, are not subject to the water budget calculation.

(Ord. 29243.)

15.11.840 - Watering window.

"Watering window" means the time of the day irrigation is allowed.

(Ord. 29243.)

15.11.850 - Water use classification of landscape species (WUCOLS).

"Water Use Classification of Landscape Species (WUCOLS)" means the water use classification species published by the University of California Cooperative Extension and the Department of Water Resources 2014, as may be amended.

(Ords. 29243, 29671.)

Part 3 - LANDSCAPE INSTALLATION REQUIREMENTS

15.11.900 - Water efficiency design requirements.

A. Landscape areas shall be designed to achieve water efficiency as required by this chapter.

B. Applicants may choose one of the following options to demonstrate that the landscape project meets the water efficiency criteria required by this chapter:

1. Plant-type restriction option:

a. Incorporate compost at the rate of at least four cubic yards per one thousand square feet to a depth of six inches into the landscape area, unless contraindicated by a soil test.

b. Turf shall comply with all of the following:

   i. Turf shall not exceed twenty-five percent of the landscape area or one thousand two hundred fifty square feet, whichever is less in residential landscape;

   ii. There shall be no turf in non-residential landscape;

   iii. Turf shall not be planted on sloped areas which exceed a slope of one foot vertical elevation change for every four feet of horizontal length;

   iv. Turf is prohibited in parkways less than ten feet wide, except for parkways adjacent to a parking strip and used for the entry or exit of vehicles;

   v. Any turf in parkways must be irrigated by subsurface irrigation or by other technology that creates no overspray or runoff.

c. Non-turf plant material shall comply with the following:

   i. For residential landscape areas less than or equal to two thousand five hundred square feet low water use, very low water use or no water use plants (average WUCOLS plant factor of 0.3) shall be installed in at least seventy-five percent of the portion of the landscape area where turf is not installed, excluding areas planted in edibles and areas using recycled water;

   ii. For residential landscape areas greater than two thousand five hundred square feet low water use, very low water use or no water use plants (average WUCOLS plant factor of 0.3) shall be installed in at least eighty percent of the portion of the landscape area where turf is not installed, excluding areas planted in edibles and areas using recycled water;

   iii. For non-residential areas, low water use, very low water use or no water use plants (average WUCOLS plant factor of 0.3) shall be installed in one hundred percent of the landscape area, excluding areas planted in edibles and areas using recycled water; and

   iv. A minimum of three inch layer of mulch shall be applied on all exposed soil surfaces of planting areas except turf areas, creeping or rooting groundcover, or direct seeding applications where mulch is contraindicated.

d. If water features are installed, the surface area of the water features shall not exceed twenty percent of the landscape area.

e. Irrigation systems for projects with a landscape area of two thousand five hundred square feet or less shall comply with the following, in lieu of the requirements of Sections 15.11.970, 15.11.980 and 15.11.990:

   i. Automatic irrigation controllers are required and must use evapotranspiration or soil moisture sensor data.

   ii. Irrigation controllers shall be of a type which does not lose programming data in the event the primary power source is interrupted.

   iii. Pressure regulators shall be installed on the irrigation system to ensure the dynamic pressure of the system is within the manufacturer's recommended pressure range.

   iv. Manual shut-off valves (such as a gate valve, ball valve, or butterfly valve) shall be installed as close as possible to the point of connection of the water supply.

   v. All irrigation emission devices must meet the requirements set in the ANSI standard, ASABE/ICC 802-

2014, "Landscape Irrigation Sprinkler and Emitter Standard." All sprinkler heads installed in the landscape must document a distribution uniformity low quarter of 0.65 or higher using the protocol defined in ASABE/ICC 802-2014.

f. Irrigation systems for projects with a landscape area of greater than two thousand five hundred square feet or less shall comply with the requirements of Sections 15.11.970, 15.11.980 and 15.11.990.

g. For projects with a landscape area two thousand five hundred square feet or less, the applicant, if different than the property owner, must at the time of final inspection, provide the owner of the property with a certificate of completion, certificate of installation, irrigation schedule and a schedule of landscape and irrigation maintenance.

2. Water budget calculation option:

a. The plant factor used shall be from WUCOLS, as may be amended. The plant factor in 2015 ranges from 0 to 0.1 for very low water use plants, from 0.1 to 0.3 for low water use plants, from 0.4 to 0.6 for moderate water use plants, and from 0.7 to 1.0 for high water use plants.

b. All water features shall be included in the high water use hydrozone and temporarily irrigated areas shall be included in the low water use hydrozone.

c. Where low and moderate water use plants are mixed within a single hydrozone, the entire hydrozone area shall be classified as moderate water use for purposes of a water budget calculation. High water use plants shall not be mixed with low or moderate water use plants.

d. All special landscape areas shall be identified and their water use included in the water budget calculation.

e. The ETAF for new and existing (non-rehabilitated) special landscape areas shall not exceed 1.0. The ETAF for existing non-rehabilitated landscapes is 0.8. The ETAF for the remaining landscape area shall not exceed 0.55 residential and 0.45 for non-residential.

f. Irrigation efficiency shall be seventy-five percent for overhead spray devices and eighty-one percent for drip irrigation devices.

g. The maximum applied water allowance shall be calculated using the equation:

MAWA = (ETo) (0.62) [(ETAF × LA) + (1-ETAF) × SLA)]

Where:

MAWA = Maximum applied water allowance (gallons per year)

ETo = Reference evapotranspiration (inches per year)

0.62 = Conversion factor (to gallons)

Varies see 15.11.410 = Evapotranspiration adjustment factor (ETAF)

LA = Landscape area including SLA (square feet)

1-ETAF = Water allowance for SLA

SLA = Special landscape area (square feet)

h. Estimated total water use (ETWU) shall be calculated for each hydrozone and special landscape area using the equation below. The sum of the ETWU calculated for all hydrozones shall not exceed the MAWA.

Formula for regular landscape areas

$$ETWU = (ETo)(0.62)\left(\frac{PF}{IE}\right)(HA)$$

Formula for special landscape areas

$$ETWU = (ETo)(0.62)(SLA)$$

Where:

ETWU = Estimated total water use per year (gallons)

ETo = Reference evapotranspiration (inches)

PF = Plant factor from WUCOLS

HA = Hydrozone area [high, medium, and low water use areas] (square feet)

SLA = Special landscape area (square feet)

0.62 = Conversion factor

IE = Irrigation efficiency (minimum 0.75 for overhead spray devices and 0.81 for drip irrigation devices.)

3. Recycled water option:

   At least ninety percent of the square footage of the landscape area shall be irrigated with recycled water.

(Ords. 29243, 29671.)

15.11.910 - Landscape documentation package.

A. A landscape documentation package conforming to this chapter shall be submitted to the director for the new construction and rehabilitated landscape projects described in Section 15.11.020. The landscape documentation package shall be considered as part of the development permit application if a development permit is required or shall be included with a building permit application. Failure to submit the landscape documentation package required by this section shall result in a determination of incompleteness pursuant to the provisions of Section 20.100.150 of this Code if a development permit is required or shall be deemed an incomplete application pursuant to the provisions of Section 24.02.210A. of this Code if a building permit, but not a development permit, is required.

B. Except as provided in Section 15.11.920 B., each landscape documentation package shall include the following elements, which are described in further detail in Sections 15.11.920 through 15.11.1020 of this chapter:

   1. Project information:
      a. Date;
      b. Applicant name and property owner, if different;
      c. Project address (if available, parcel and/or lot number(s));
      d. Total landscape area (square feet);
      e. Project type (e.g., new construction or rehabilitated landscape);
      f. Water supply type (e.g., potable, recycled, well) and identify the local water purveyor if the applicant is not served by a private well;
      g. Checklist of all documents in the landscape documentation package;

h. Project contact information for the applicant and property owner if the property owner is not the applicant;

i. Proposed method of complying with requirements of this chapter (e.g., plant-type restriction, water budget calculation, or recycled water) as specified in Section 15.11.900;

j. Applicant signature and date along with the following statement: "I agree to comply with, or cause anyone who works on the Landscape Project to comply with, the requirements of Chapter 15.11 of Title 15 of the San José Municipal Code and to submit a complete Landscape Documentation Package that complies with Chapter 15.11 of Title 15 of the San José Municipal Code."

2. Water efficient landscape worksheet as specified in Section 15.11.920;

3. Soil management report as specified in Section 15.11.930;

4. Landscape design plan as specified in Section 15.11.940;

5. Irrigation design plan as specified in Section 15.11.970; and

6. Grading design plan as specified in Section 15.11.1020.

(Ord. 29243.)

15.11.920 - Water efficient landscape worksheet.

A. Applicants who elect to comply with this chapter through the water budget calculation option described in Section 15.11.900 shall complete a water efficient landscape worksheet in a form approved by the director and submit it as part of the landscape documentation package as specified in Section 15.11.910.

B. Applicants who elect to comply with this chapter through the plant-type restriction option or the recycled water option described in Section 15.11.900 shall not be required to submit a water efficient landscape worksheet as part of the applicant's landscape documentation package.

(Ord. 29243.)

15.11.930 - Soil management report.

In order to reduce runoff and encourage healthy plant growth, a soil management report shall be completed by the applicant as follows, for any project that has a landscape area greater than two thousand five hundred square feet or that uses the water budget calculation option:

A. Applicant shall submit soil samples to a plant soil laboratory for analysis and recommendations.

1. Soil sampling shall be conducted in accordance with laboratory protocol, including protocols regarding adequate sampling depth for the intended plants.

2. The soil analysis shall include:

a. Soil texture;

b. Infiltration rate determined by laboratory test or soil texture infiltration rate table;

c. pH;

d. Total soluble salts;

e. Sodium;

f. Percent organic matter; and

g. Recommendations.

B. In projects with multiple landscape installations (i.e. production home developments) a soil sampling rate of one in seven lots or approximately fifteen percent will satisfy this requirement. Large landscape projects shall

sample at a rate equivalent to one in seven lots.

C. Applicant shall comply with one of the following:
   1. If significant mass grading is not planned, the soil management report shall be performed after grading and the landscape areas are prepared for plant installation and submitted as part of the landscape documentation package; or
   2. If significant mass grading is planned, the soil analysis report shall be submitted as part of the certificate of completion.

D. Applicant shall certify that the soil management report will be provided to the professionals preparing the landscape design plans and irrigation design plans to make any necessary adjustments to the design plans.

E. Applicant shall submit documentation verifying implementation of the soil management report recommendations to the director with the certificate of completion.

(Ords. 29243, 29671.)

15.11.940 - Landscape design plan requirements.

A. Except as otherwise provided for in this section, a landscape design plan arranged by hydrozone shall be submitted as part of the landscape documentation package. The form of the landscape design plan and the information and data required to be set forth therein shall be as prescribed by the director and shall, at a minimum:
   1. Delineate and label each hydrozone by number, letter, or other method;
   2. Identify each hydrozone as low, moderate, high water, or mixed water use;
   3. Temporarily irrigated areas of the landscape area shall be included in the low water use hydrozone for the water budget calculation if a water budget calculation is prepared pursuant to Section 15.11.900;
   4. Identify recreational areas;
   5. Identify areas permanently and solely dedicated to edible plants;
   6. Identify areas irrigated with recycled water;
   7. Identify type of mulch and application depth;
   8. Identify soil amendments, type, and quantity;
   9. Identify type and surface area of water features;
   10. Identify hardscapes (pervious and non-pervious);
   11. Identify location and installation details of any applicable stormwater best management practices that encourage on-site retention and infiltration of stormwater. Stormwater best management practices shall be included in the landscape design plan and examples include, but are not limited to:
      a. Infiltration beds, swales, and basins that allow water to collect and soak into the ground;
      b. Constructed wetlands and retention ponds that retain water, handle excess flow, and filter pollutants; and
      c. Pervious or porous surfaces (e.g., permeable pavers or blocks, pervious or porous concrete, etc.) that minimize runoff.
   12. Identify any applicable rain harvesting or catchment technologies (e.g., rain gardens, cisterns, etc.);
   13. Identify on-center spacing for tree(s) measuring from the center of the tree(s) trunk(s) to adjacent hardscape and structures;

14. Contain the following statement: "I agree to comply with, or cause anyone who works on the landscape design p comply with, the requirements of Chapter 15.11 of Title 15 of the San José Municipal Code and to submit a comp landscape design plan that complies with Chapter 15.11 of Title 15 of the San José Municipal Code"; and
15. Bear the signature of the landscape architect authorized by the property owner or applicant to design the landscape.

B. Applicants who have elected to use the plant-type restriction option or the recycled water option as a means of demonstrating compliance with this chapter shall not be required to show in the landscape design plan that the plant material to be installed does not exceed the MAWA.

(Ord. 29243.)

15.11.950 - Landscape design plan criteria - Plant material, selection, and grouping.

A. The landscape design plan shall include water conserving plant species.

B. Plant varieties that require large amounts of irrigation water to survive the hot dry summer season shall not be used except when the plant is located within a micro-climate area of the landscape project that maintains plant health and appearance.

C. Each hydrozone shall have plant materials with similar water use, with the exception of hydrozones with plants of mixed water use, as specified in Section 15.11.980.

D. Plants shall be selected and planted appropriately based upon their adaptability to the climatic, geologic, and topographical conditions of the landscape project site.

E. All plant materials used in the landscape area shall be chosen to ensure that the estimated applied water use recommended does not exceed the MAWA for applicants who choose the water budget calculation option described in Section 15.11.900 to demonstrate that the landscape project meets the water efficiency criteria required by this chapter.

F. If turf is part of the landscape design plan, the installation shall comply with the following:
1. Turf is not allowed on slopes greater than twenty-five percent where the toe of the slope is adjacent to an impermeable hardscape and where twenty-five percent means one foot of vertical elevation change for every four feet of horizontal length (rise divided by run × 100 = slope percent); and
2. Turf areas that are less than ten feet wide shall be irrigated in accordance with Section 15.11.980.

G. Fire prone plant materials and highly flammable mulches are prohibited.

H. The use of invasive plant species and/or noxious plant species is prohibited.

I. High water use plants, characterized by a plant factor of 0.7 to 1.0, are prohibited in medians.

J. Soil preparation, amendments and mulching shall comply with the following:
1. Prior to the planting of any materials, compacted soils shall be transformed to a friable condition. On engineered slopes, only amended planting holes need meet this requirement.
2. For landscape installations, compost at a rate of a minimum of four cubic yards per one thousand square feet of permeable area shall be added and tilled into the soil to a depth of six inches. Soils with greater than six percent organic matter in the top six inches of soil are exempt from adding compost and tilling.
3. A minimum three inch layer of mulch shall be applied on all exposed soil surfaces of planting areas except in turf areas, creeping or rooting groundcovers, or direct seeding applications where mulch is contraindicated. To provide habitat for beneficial insects and other wildlife, up to five percent of the landscape area may be left without mulch. Designated insect areas must be included in the landscape plan as such.

4. Stabilizing mulching products shall be used on slopes.
5. The mulching portion of the seed/mulch slurry in hydro-seeded applications shall meet the mulching requirement referenced in Subsection 4 of this section.
6. Soil amendments shall be incorporated according to recommendations of the soil report and what is appropriate for the plants selected.

(Ords. 29243, 29671.)

15.11.960 - Landscape design plan criteria - Water features.

Recirculating systems or recycled water, where available, shall be used for decorative water features, such as ponds, lakes, waterfalls, and fountains.

(Ord. 29243.)

15.11.970 - Irrigation design plan.

An irrigation design plan shall be submitted as part of the landscape documentation package for any project that has a landscape area greater than two thousand five hundred square feet or that uses the water budget calculation option. The irrigation design plan shall be consistent with the hydrozones for the landscape areas. The irrigation design plan shall be set forth in a form prescribed by the director and at a minimum shall contain all of the following:

A. Location and size of separate water meters for landscape areas;
B. Location, type and size of all components of the irrigation system, including controllers, main and lateral lines, valves, sprinkler heads, moisture sensing devices, rain switches, quick couplers, pressure regulators, and backflow prevention devices;
C. Static water pressure at the point of connection to the public water supply;
D. Flow rate (gallons per minute), application rate (inches per hour), and design operating pressure (pressure per square inch) for each station;
E. Recycled water irrigation systems if applicable as specified in Section 15.11.1000;
F. The statement: "I agree to comply with, or cause anyone who works on the irrigation design plan to comply with, the requirements of Chapter 15.11 of Title 15 of the San José Municipal Code and to submit a complete irrigation design plan that complies with Chapter 15.11 of Title 15 of the San José Municipal Code"; and
G. The signature of a landscape architect or certified irrigation designer authorized by the property owner or the applicant to design the irrigation system.

(Ords. 29243, 29671.)

15.11.980 - Irrigation design plan criteria - System requirements.

For the efficient use of water, an irrigation design plan meeting the following design criteria for irrigation systems shall be included in the irrigation design plan and submitted as part of the landscape documentation package for any project that has a landscape area greater than two thousand five hundred square feet or that uses the water budget calculation option:

A. Relevant information from the soil management plan, such as soil type and infiltration rate, shall be utilized when designing irrigation systems.
B. All irrigation systems shall be designed to avoid run-off, low head drainage, overspray and other similar

conditions where water flows onto adjacent property, non-irrigated areas, walks, roadways or structures.

C. The design of the irrigation system shall conform to the hydrozones of the landscape design plan.

D. Irrigation systems shall be designed, installed, and maintained to meet, at a minimum, an irrigation efficiency of 0.75 for overhead spray devices and 0.81 for drip system devices.

E. All landscape areas in excess of ten thousand square feet shall be designed to allow for the current and future use of recycled water except as follows:

1. Landscape areas in excess of ten thousand square feet do not have to be designed to allow for the current and future use of recycled water where the director grants an exemption to the requirement set forth in Subsection E of this section on the basis that recycled water is not available, and will not be available in the foreseeable future to serve the landscape project.

F. In mulched planting areas, the use of low volume irrigation is required to maximize water infiltration into the root zone.

G. Sprinkler heads and other emission devices shall have matched precipitation rates, unless otherwise directed by the manufacturer's recommendations.

H. Head to head coverage is required at a minimum, with consideration for average wind conditions. However, sprinkler spacing shall be designed to achieve the highest possible distribution using the manufacturer's recommendations.

I. Areas less than ten feet in width in any direction shall be irrigated with subsurface irrigation or other means that produces no runoff or overspray.

J. Overhead sprinkler irrigation systems shall not be permitted within twenty-four inches of any non-permeable surface. Allowable irrigation within the setback from non-permeable surfaces may include drip irrigation, or other low volume irrigation technology. The setback area may be planted or unplanted. The surfacing of the setback may be mulch, gravel, or other porous material. These restrictions may be modified if:

1. The adjacent non-permeable surfaces are designed and constructed to drain entirely to landscaping;
2. The landscape area is adjacent to permeable surfacing and no runoff occurs; or
3. The certified irrigation designer specifies an alternative design or technology, as part of the landscape documentation package and clearly demonstrates strict adherence to irrigation system design criteria in this section. Prevention of overspray and runoff must be confirmed during the irrigation audit required by Section 15.11.1040.

K. Slopes greater than twenty-five percent shall not be irrigated with an irrigation system with an application rate exceeding 0.75 inches per hour. This restriction may be modified if the certified landscape designer specifies an alternative design or technology, as part of the landscape documentation package, and clearly demonstrates no runoff or erosion will occur. Prevention of runoff and erosion must be confirmed during the irrigation audit required by Section 15.11.1040.

L. Each valve shall irrigate a hydrozone with similar site, slope, sun exposure, soil conditions, and plant materials with similar water use.

M. Sprinkler heads and other emission devices shall be selected based on what is appropriate for the plant type within that hydrozone.

N. Trees shall be placed on separate valves from shrubs, groundcovers, and turf, where feasible.

O. Individual hydrozones that mix plants of moderate and low water use, or moderate and high water use, may be allowed if:

1. The plant factor calculation is based on the proportions of the respective plant water uses and their plant fa
2. The plant factor of the higher water using plant is used for calculations.

P. Individual hydrozones that mix high and low water use plants shall not be permitted.

Q. On the landscape design plan and irrigation design plan, hydrozone areas shall be designated by number, letter, or other designation. On the irrigation design plan, the areas irrigated by each valve shall be designated and a number assigned to each valve.

R. If the water pressure is below or exceeds the recommended pressure for the specified irrigation devices, the installation of a pressure regulating device is required to ensure that the dynamic pressure at each emission device is within the manufacturer's recommended pressure range for optimal performance.

1. If the static water pressure is above or below the required dynamic pressure of the irrigation system, pressure-regulating devices such as inline pressure regulators, booster pumps, or other devices shall be installed to meet the required dynamic pressure of the irrigation system.
2. Static water pressure, dynamic or operating pressure, and flow reading of the water supply shall be measured at the point of connection. These pressure and flow measurements shall be conducted at the design stage. If the measurements are not available at the design stage, the measurements shall be conducted at installation.

(Ords. 29243, 29671.)

15.11.990 - Irrigation design plan criteria - Equipment.

For the efficient use of water, an irrigation design plan meeting the following design criteria for irrigation equipment shall be included in the irrigation design plan and submitted as part of the landscape documentation package for any project that has a landscape area greater than two thousand five hundred square feet or that uses the water budget calculation option:

A. Landscape water meters, defined as either a customer service meter provided by a local water purveyor or privately owned meter submeter, shall be installed for all irrigated non-residential landscapes of one thousand to five thousand square feet and all irrigated residential landscapes of five thousand square feet or greater. Irrigated non-residential landscapes of more than five thousand square feet shall provide a separate meter as required by Water Code Section 535, as may be amended or renumbered.

B. Automatic irrigation controllers utilizing either evapotranspiration or soil moisture sensor data utilizing non-volatile memory shall be required for irrigation scheduling in all irrigation systems.

C. Sensors (rain, freeze, wind, etc.), either integral or auxiliary, that suspend or alter irrigation operation during unfavorable weather conditions shall be required on all irrigation systems, as appropriate for local climatic conditions. Irrigation shall be avoided during windy or freezing weather or during rain.

D. Manual shut-off valves (such as a gate valve, ball valve, or butterfly valve) shall be required, as close as possible to the point of connection of the water supply, to minimize water loss in case of an emergency (such as a main line break) or routine repair.

E. Backflow prevention devices and automatic irrigation controllers shall be installed in all irrigation systems and must be able to accommodate all aspects of the design.

F. Flow sensors that detect high flow conditions created by system damage or malfunction are required for all non-residential landscapes and for residential landscapes of five thousand square feet or larger.

G. Sprinkler heads and other emission devices shall have matched precipitation rates.

H. Sprinkler head spacing shall be head to head.

I. Swing joints or other riser-protection components are required on all risers subject to damage that are adjacent to hardscapes or in high traffic areas of turfgrass.

J. Check valves or anti-drain valves are required on all irrigation systems where low point drainage could occur.

K. Master shut-off valves are required except for irrigation systems that make use of technologies that allow for the individual control of sprinklers that are individually pressurized in a system equipped with low pressure shut down features.

L. All irrigation emission devices must meet the requirements set in the American National Standards Institute (ANSI) standard, American Society of Agricultural and Biological Engineers'/International Code Council's (ASABE/ICC) 802-2014 "Landscape Irrigation Sprinkler and Emitter Standard." All sprinkler heads installed in the landscape area must document a distribution uniformity low quarter of 0.65 or higher using the protocol defined in ASABE/ICC 802-2014.

(Ords. 29243, 29671.)

15.11.1000 - Landscape irrigation systems with recycled water.

A. Plants and trees that will be irrigated with recycled water as described in the landscape design plan shall be plants adapted for the San José climate and tolerant of salinity buildup in the soil.

B. All recycled water irrigation systems shall:

1. Be metered separately from the potable water supply system;
2. Have no on-site cross-connections to the potable water supply system; and
3. Be designed and operated in accordance with applicable laws.

(Ord. 29243.)

15.11.1010 - Irrigation schedules.

For the efficient use of water, all irrigation schedules shall be developed, managed, and evaluated to utilize the minimum amount of water required to maintain plant health. Irrigation schedules shall meet the following criteria:

A. Irrigation scheduling shall be regulated by automatic irrigation controllers.

B. Overhead irrigation shall be restricted between the hours specified in Chapter 15.10 of this Code.

C. The irrigation schedule shall include run times, emission device, flow rate, and current reference evapotranspiration. Actual irrigation schedules shall be regulated by automatic irrigation controllers using current reference evapotranspiration data for San José or on-site moisture data.

D. Parameters used to set the automatic irrigation controller shall be developed and submitted for each of the following:

1. The establishment period;
2. The established landscape; and
3. Temporarily irrigated areas.

E. Each irrigation schedule shall consider for each station all of the following that apply:

1. Irrigation interval (days between irrigation);
2. Irrigation run times (hours or minutes per irrigation event to avoid runoff);
3. Number of cycle starts required for each irrigation event to avoid runoff;

4. Amount of applied water scheduled to be applied on a monthly basis;
5. Application rate setting;
6. Root depth setting;
7. Plant type setting;
8. Soil type;
9. Slope factor setting;
10. Shade factor setting; and
11. Irrigation uniformity or efficiency setting.

F. The landscape irrigation schedule shall be consistent with the requirements of Chapter 15.10 of this Code.

(Ord. 29243.)

15.11.1020 - Grading design plan.

A. For the efficient use of water, grading of the landscape project site shall be designed to minimize soil erosion, runoff, and water waste. A grading plan shall be submitted as part of the landscape documentation package for any project that has a landscape area greater than two thousand five hundred square feet or that uses the water budget calculation option. A comprehensive grading plan prepared by a civil engineer in relation to another city permit application satisfies this requirement.

B. The applicant shall submit a landscape grading plan that indicates finished configurations and elevations of the landscape area including:
   1. Height of graded slopes;
   2. Drainage patterns;
   3. Pad elevations;
   4. Finish grade; and
   5. Stormwater retention improvements, if applicable.

C. To prevent excessive erosion and runoff, applicants shall:
   1. Grade so that all irrigation and normal rainfall remains within property lines and does not:
      a. Drain on to non-permeable hardscapes; or
      b. Allow for ponding water in violation of applicable law;
   2. Avoid disruption of natural drainage patterns and undisturbed soil; and
   3. Avoid soil compaction in landscape areas.

D. The grading design plan shall contain the following statement: "I agree to comply with, or cause anyone who works on the grading design plan to comply with, the requirements of Chapter 15.11 of Title 15 of the San José Municipal Code and to submit a complete grading design plan that complies with Chapter 15.11 of Title 15 of the San José Municipal Code" and shall bear the signature of a licensed professional as authorized by law.

(Ords. 29243, 29671.)

15.11.1030 - Landscape and irrigation maintenance schedule.

A. Landscapes shall be maintained to ensure water use efficiency. A regular maintenance schedule shall be submitted to the director by the applicant with the certificate of completion.

B. A regular maintenance schedule shall include, but not be limited to, routine inspection; adjustment and repair of th irrigation system and its components; aerating and dethatching turf areas; topdressing with compost; replenishing fertilizing; pruning; weeding in all landscape areas, and removing any obstructions to emission devices. Operation o irrigation system outside the watering window is allowed for auditing, system maintenance and during plant establi periods.

C. Irrigation systems shall be tested, adjusted and repaired following the manufacturers' specifications and the recommendations of the landscape professional who signed the landscape design plan.

D. Failed plants shall be replaced with the same or functionally equivalent plants that may be size-adjusted as appropriate for the stage of growth of the overall installation.

E. Repair of all irrigation equipment shall be done with the originally installed components or their equivalents or with components with greater efficiency.

F. A diagram of the irrigation plan showing hydrozones shall be kept with the irrigation controller for subsequent management purposes.

(Ords. 29243, 29671.)

15.11.1040 - Irrigation audit.

A. The applicant shall submit an irrigation audit report with the certificate of completion for any new construction or rehabilitated landscape project that uses the water budget calculation or has a landscape area greater than two thousand five hundred square feet. The irrigation audit may include, but is not limited to: inspection, system tune-up, system test with distribution uniformity, reporting overspray or run-off that causes overland flow, and preparation of an irrigation schedule, including configuring irrigation controllers with application rate, soil types, plant factors, slope, exposure and any other factors necessary for accurate reprogramming.

B. All landscape irrigation audits shall be conducted by a third party certified landscape irrigation auditor. Irrigation audits shall not be conducted by the person who designed or installed the landscaping.

C. In large projects or projects with multiple landscape installations (e.g. production home developments) an auditing rate of one in seven lots or approximately fifteen percent will satisfy the irrigation audit requirement.

(Ords. 29243, 29671.)

15.11.1050 - Certificate of completion.

A. A certificate of completion shall be submitted to the director prior to the date that a certificate of occupancy is issued pursuant to the provisions of Part 6 of Chapter 24.02 of Title 24 of this Code. The form of the certificate of completion shall be as prescribed by the director and shall include the following:

1. A project information sheet that contains:
    a. Date;
    b. Project name;
    c. Applicant name, telephone, and mailing address;
    d. Project address and location; and
    e. Property owner name, telephone, and mailing address.
2. A certification by the signer of the landscape design plan, the signer of the irrigation design plan, or the licensed landscape contractor that the landscape project has been installed in accordance with the submitted landscape documentation package:

a. Where there have been significant changes made in the field during construction, these "as-built" or record be included with the certification;

b. Where recycled water is used to demonstrate water efficiency for the landscape project under Section 15.11.900, the certificate of completion shall include a verification by the signer of the landscape design plan, the signer of the irrigation design plan, or the licensed landscape contractor, that the irrigation system is designed in accordance with Section 15.11.1000.

3. Irrigation scheduling parameters used to set the automatic irrigation controller;

4. Landscape and irrigation maintenance schedule;

5. Irrigation audit report;

6. Soil management report if not submitted with landscape documentation package; and

7. Documentation verifying implementation of the recommendations contained in the soil management report.

B. The Applicant shall:

1. Submit the signed certificate of completion to the director pursuant to Section 15.11.1050A. above; and

2. Ensure that copies of the certificate of completion are submitted to the local water purveyor and property owner or his or her designee.

C. An applicant shall be fully responsible for and subject to enforcement action for any inaccurate, incomplete or false information provided on its certificate of completion. It shall be a violation of this section for any applicant to provide any such inaccurate, incomplete or false information on its certificate of completion.

(Ord. 29243.)

Appendix G

SBX7-7 Compliance Form

SB X7-7 Table 0: Units of Measure Used in 2020 UWMP* *(select one from the drop down list)*
Acre Feet
**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	
Method Used to Determine 2020 Population (may check more than one)	
☐	**1. Department of Finance** (DOF) or **American Community Survey** (ACS)
☐	**2. Persons-per-Connection Method**
☐	**3. DWR Population Tool**
☑	**4. Other** DWR recommends pre-review
NOTES: Methodology reviewed with DWR in 2020.	

SB X7-7 Table 3: 2020 Service Area Population	
2020 Compliance Year Population	
2020	132,644
NOTES:	

SB X7-7 Table 4: 2020 Gross Water Use

Compliance Year 2020	2020 Volume Into Distribution System *This column will remain blank until SB X7-7 Table 4-A is completed.*	2020 Deductions					2020 Gross Water Use
		Exported Water *	Change in Dist. System Storage* (+/-)	Indirect Recycled Water *This column will remain blank until SB X7-7 Table 4-B is completed.*	Water Delivered for Agricultural Use*	Process Water *This column will remain blank until SB X7-7 Table 4-D is completed.*	
	17,546	-	-	-	-	-	**17,546**

*** 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:

SB X7-7 Table 4-A: 2020 Volume Entering the Distribution System(s), Meter Error Adjustment Complete one table for each source.			
Name of Source	SFPUC		
This water source is *(check one)*:			
☐	The supplier's own water source		
☑	A purchased or imported source		
Compliance Year 2020	Volume Entering Distribution System [1]	Meter Error Adjustment [2] *Optional (+/-)*	Corrected Volume Entering Distribution System
	4,731	-	4,731
*[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) Meter Error Adjustment Complete one table for each source.			
Name of Source	Valley Water		
This water source is *(check one)*:			
☐	The supplier's own water source		
☑	A purchased or imported source		
Compliance Year 2020	Volume Entering Distribution System [1]	Meter Error Adjustment [2] *Optional (+/-)*	Corrected Volume Entering Distribution System
	11,930		11,930
*[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), Meter Error Adjustment Complete one table for each source.			
Name of Source	Groundwater		
This water source is *(check one)*:			
☐	The supplier's own water source		
☑	A purchased or imported source		
Compliance Year 2020	Volume Entering Distribution System [1]	Meter Error Adjustment [2] *Optional (+/-)*	Corrected Volume Entering Distribution System
	885		885
*[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)		
2020 Gross Water *Fm SB X7-7 Table 4*	**2020 Population** *Fm SB X7-7 Table 3*	**2020 GPCD**
17,546	132,644	**118**
NOTES:		

SB X7-7 Table 9: 2020 Compliance							
Actual 2020 GPCD[1]	Optional Adjustments to 2020 GPCD Enter "0" if Adjustment Not Used Extraordinary Events[1]	Weather Normalization[1]	Economic Adjustment[1]	TOTAL Adjustments[1]	Adjusted 2020 GPCD [1] *(Adjusted if applicable)*	2020 Confirmed Target GPCD [1, 2]	**Did Supplier Achieve Targeted Reduction for 2020?**
118	*0*	*0*	*0*	0	118	145	**YES**
[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:							

Appendix H

Valley Water: Groundwater Management Plan, Delta Reliance

2016

Groundwater Management Plan

Santa Clara Valley Water District

CSJ UWMP: Appendix H

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Santa Clara Valley Water District

2016 Groundwater Management Plan
Santa Clara and Llagas Subbasins

Prepared by:

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Santa Clara Valley Water District

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Acronyms and Abbreviations

AF: acre-feet

AFY: acre-feet per year

BAO: Board Appointed Officer

Board: Santa Clara Valley Water District Board of Directors

CASGEM: California Statewide Groundwater Elevation Monitoring Program

CCAMP: Central Coast Ambient Monitoring Program

CEO: Chief Executive Officer

County: Santa Clara County

CVP: Central Valley Project

CY: Calendar Year

DDW: State Water Resources Control Board Division of Drinking Water

DEH: Santa Clara County Department of Environmental Health

DFW: California Department of Fish and Wildlife

District: Santa Clara Valley Water District

District Act: Santa Clara Valley Water District Act

DSOD: California Division of Safety of Dams

DTSC: California Department of Toxic Substances Control

DWR: California Department of Water Resources

DWSAP: Drinking Water Source Assessment and Protection Program

EDD: Electronic Data Deliverable

EIR: Environmental Impact Report

FAHCE: Fisheries and Aquatic Habitat Collaborative Effort

FWS: United States Fish and Wildlife Service

FY: Fiscal Year (July 1 to June 30)

GAMA: Groundwater Ambient Monitoring assessment

GCRCD: Guadalupe Coyote Resource Conservation District

GIS: Geographic Information System

GMMP: Groundwater Mitigation and Monitoring Plan

GSA: Groundwater Sustainability Agency

GSP: Groundwater Sustainability Plan

GWMP: Groundwater Management Plan

Acronyms and Abbreviations

IDT: Integrated Device Technology, Inc.

ILRP: Irrigated Lands Regulatory Program

InSAR: Interferometric Synthetic Aperture Radar

IQR: Interquartile range

LAMP: Local Agency Management Plan

LIDAR: Light Imaging, Detecting, and Ranging

LLNL: Lawrence Livermore National Laboratory

LUFT: Leaking Underground Fuel Tank

MCL: Maximum Contaminant Level

MGD: Million gallons per day

MLE: Maximum Likelihood Estimate

MRP: Municipal Regional Permit

MTBE: Methyl tert-butyl ether

NAVD 88: North American Vertical Datum of 1988

NDMA: N-Nitrosodimethylamine

NGVD 29: National Geodetic Vertical Datum of 1929

NMFS: National Marine Fisheries Service

NPDES: National Pollutant Discharge Elimination System

OWTS: Onsite Wastewater Treatment Systems

PAWS: Protection and Augmentation of Water Supplies

PFC: Perfluorochemical

PPT: parts per trillion

PSI: pounds per square inch

QA: Quality Assurance

QC: Quality Control

RWIG: Recycled Water Irrigation and Groundwater

SBA: South Bay Aqueduct

SBWR: South Bay Water Recycling

SCRWA: South County Regional Wastewater Authority

SCVURPPP: Santa Clara Valley Urban Runoff Pollution Prevention Program

SCVWCD: Santa Clara Valley Water Conservation District

Acronyms and Abbreviations

SFEI: San Francisco Estuary Institute

SFPUC: San Francisco Public Utilities Commission

SGMA: Sustainable Groundwater Management Act

SMCL: Secondary Maximum Contaminant Level

SNMP: Salt and Nutrient Management Plan

State Water Board: State Water Resources Control Board

SVAWPC: Silicon Valley Advanced Water Purification Center

SWID: Stormwater Infiltration Device

SWP: State Water Project

TDS: Total Dissolved Solids

USEPA: United States Environmental Protection Agency

USGS: United States Geological Survey

UST: Underground Storage Tank

UWMP: Urban Water Management Plan

VOC: Volatile Organic Compound

Water Board: Regional Water Quality Control Board

Water Code: California Water Code

WPCP: Water Pollution Control Plant

WTP: Water Treatment Plant

WWTP: Wastewater Treatment Plant

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Executive Summary

EXECUTIVE SUMMARY

Nearly half of the water used in Santa Clara County (county) is pumped from the Santa Clara and Llagas subbasins, with some communities relying solely on groundwater. For over 80 years, the Santa Clara Valley Water District (District) has managed groundwater in the county per statutory authority provided by the Santa Clara Valley Water District Act (District Act).[1] The District's comprehensive groundwater management programs and investments have resulted in sustainable groundwater conditions for many decades, and will ensure groundwater resources are sustainable far into the future.

This 2016 Groundwater Management Plan (GWMP) describes the District's comprehensive groundwater management framework, including existing and potential actions to achieve basin sustainability goals and ensure continued sustainable groundwater management. The GWMP covers the Santa Clara and Llagas subbasins, located entirely in Santa Clara County and identified by the Department of Water Resources (DWR) as Basins 2-9.02 and 3-3.01, respectively.

GROUNDWATER MANAGEMENT PLAN AUTHORITY

This 2016 GWMP is prepared pursuant to authority granted by the District Act and supersedes all previous Groundwater Management Plans.

The 2016 GWMP also satisfies the objectives of the Sustainable Groundwater Management Act (SGMA). SGMA, enacted by the state legislature in 2014, and subsequent Groundwater Sustainability Plans (GSPs) Emergency Regulations have resulted in statewide requirements for basins designated as medium and high priority basins by DWR. In the basins designated by DWR as medium and high priority, local public agencies and Groundwater Sustainability Agencies (GSAs) are required to develop and implement GSPs or alternatives to GSPs (Alternative Plans). DWR has identified the Santa Clara and Llagas subbasins as medium- and high-priority basins, respectively.

The 2016 GWMP meets the requirements of California Water Code (Water Code) Section 10733.6, which allows for an Alternative Plan to be submitted to DWR. Specifically, the District believes the 2016 GWMP, prepared pursuant to the District Act, qualifies as an Alternative Plan per Water Code Section 10733.6(b)(1), which defines an Alternative Plan as a plan developed pursuant to other law authorizing groundwater management. The 2016 GWMP, which updates technical information from the District's previous GWMP adopted by the Board in 2012, meets the objectives of SGMA and contains information and elements that are functionally equivalent to the elements of a GSP required by Articles 5 and 7 of the GSP Emergency Regulations.

DISTRICT OVERVIEW

The District is an independent special district that provides wholesale water supply, groundwater management, flood protection, and stream stewardship for its service area, which includes all of Santa Clara County. The mission of the District is to provide Silicon Valley safe, clean water for a healthy life, environment, and economy. The District is governed by an elected Board of Directors, comprised of seven members elected from equally-divided districts drawn through a formal process.

Formed in 1929 in response to groundwater overdraft and subsidence, the District has been a leader in the conjunctive management of groundwater and surface water for many decades. Under the District Act, the District's objectives and authority related to groundwater management are to recharge groundwater basins, conserve, manage and store water for beneficial and useful purposes, increase water supply, protect surface water

[1] Santa Clara Valley Water District Act, Water Code Appendix, Chapter 60.

and groundwater from contamination, prevent waste or diminution of the District's water supply, and do any and every lawful act necessary to ensure sufficient water is available for present and future beneficial uses.[2]

SGMA lists the District as one of fifteen exclusive agencies with powers to comply with SGMA within its statutory boundary.[3] In May 2016, following a public hearing, the District Board of Directors (Board) adopted a resolution to become the Groundwater Sustainability Agency (GSA) for the Santa Clara and Llagas subbasins.

Groundwater management programs are funded by the District's Water Utility Enterprise, with funding sources including charges for groundwater production, treated water, recycled water, and surface water, along with property taxes, interest earnings, reimbursements, and grants. These funds are used to operate and maintain the District's complex water supply infrastructure network, maintain water supply sources and water rights, and make capital improvements as needed to ensure water supply reliability.

WATER SUPPLY AND GROUNDWATER OVERVIEW

The District manages a diverse water supply portfolio, with sources including groundwater, local surface water, imported water, and recycled water. About half of the county's water supply comes from local sources and the other half comes from imported sources. Imported water includes the District's State Water Project and Central Valley contract supplies and supplies delivered by the San Francisco Public Utilities Commission (SFPUC) to cities in northern Santa Clara County. Local sources include natural groundwater recharge and surface water supplies. A small, but growing, portion of the county's water supply is recycled water.

The District supplies are distributed to recharge facilities in the Santa Clara and Llagas subbasins, drinking water treatment plants, local creeks for environmental needs, or directly to water users. The conjunctive management of surface water and groundwater maximizes water supply reliability, allowing the District to store surface water in local groundwater basins to help balance pumping and provide reserves for use during dry years when surface water availability is limited.

Local groundwater resources make up the foundation of the county's water supply, but they need to be augmented by the District's comprehensive water supply management activities to reliably meet the county's needs. These include the managed recharge of imported and local surface water and in-lieu recharge through the provision of treated surface water, acquisition of supplemental water supplies, and water conservation and recycling. The District also has programs to protect, manage and sustain water resources. The District operates and maintains a complex infrastructure network, with major features including:

- 10 surface water reservoirs
- 169,000 acre-feet total reservoir storage capacity
- 17 miles of raw surface water canals
- 393 acres of groundwater recharge ponds
- 91 miles of controlled in-stream recharge
- 142 miles of pipelines
- three pumping stations
- three drinking water treatment plants
- Silicon Valley Advanced Water Purification Center

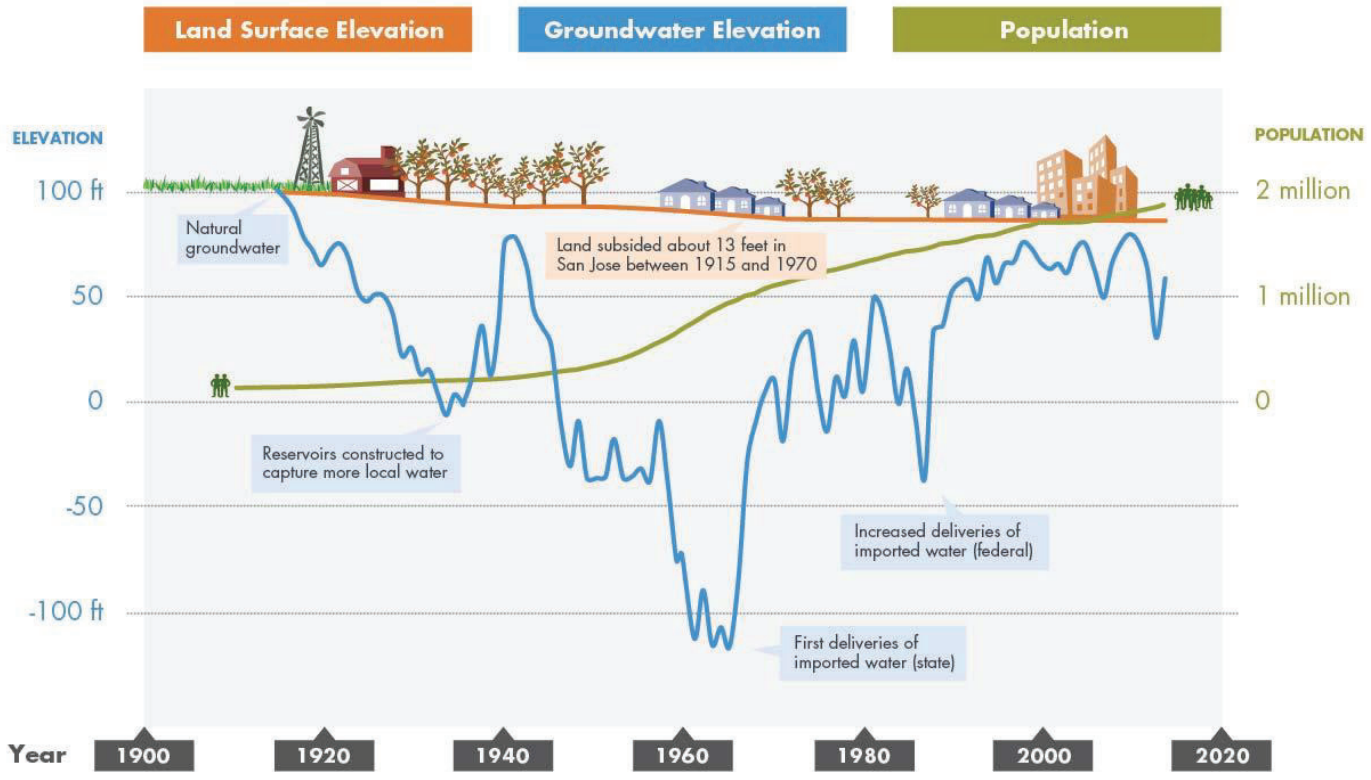
In addition to working to secure adequate water supplies for the county, the District also has a long history of protecting groundwater resources, beginning with efforts to address salt water intrusion adjacent to San Francisco

[2] District Act, Sections 4 and 5.
[3] California Water Code Section 10723 (a).

Bay in the late 1950s.[4] In the 1980s, contamination from leaking chemical storage tanks at semiconductor manufacturing facilities brought groundwater quality issues to the forefront. District efforts to aggressively protect groundwater quality have included close coordination with regulatory agencies overseeing cleanup, the implementation of numerous programs including efforts to seal abandoned wells and reduce nitrate loading, the oversight of fuel leak cases, the regulation of wells, and efforts to influence statewide policy from threats such as MTBE, an additive formerly used in gasoline.[5] More recently, the District worked with stakeholders to develop Salt and Nutrient Management Plans to assess salt and nutrient loading to groundwater and identify related management strategies. This includes ensuring recycled and purified water projects are adequately protective of local groundwater quality.

Protecting groundwater resources is a key District mission as demonstrated by District Board Supply Objective 2.1.1: "Aggressively protect groundwater from the threat of contamination and maintain and develop groundwater to optimize reliability and to minimize land subsidence and salt water intrusion." Figure ES-1 shows how the District's investments and conjunctive management programs have contributed to a sustainable groundwater supply.

Figure ES-1. Santa Clara County Groundwater History



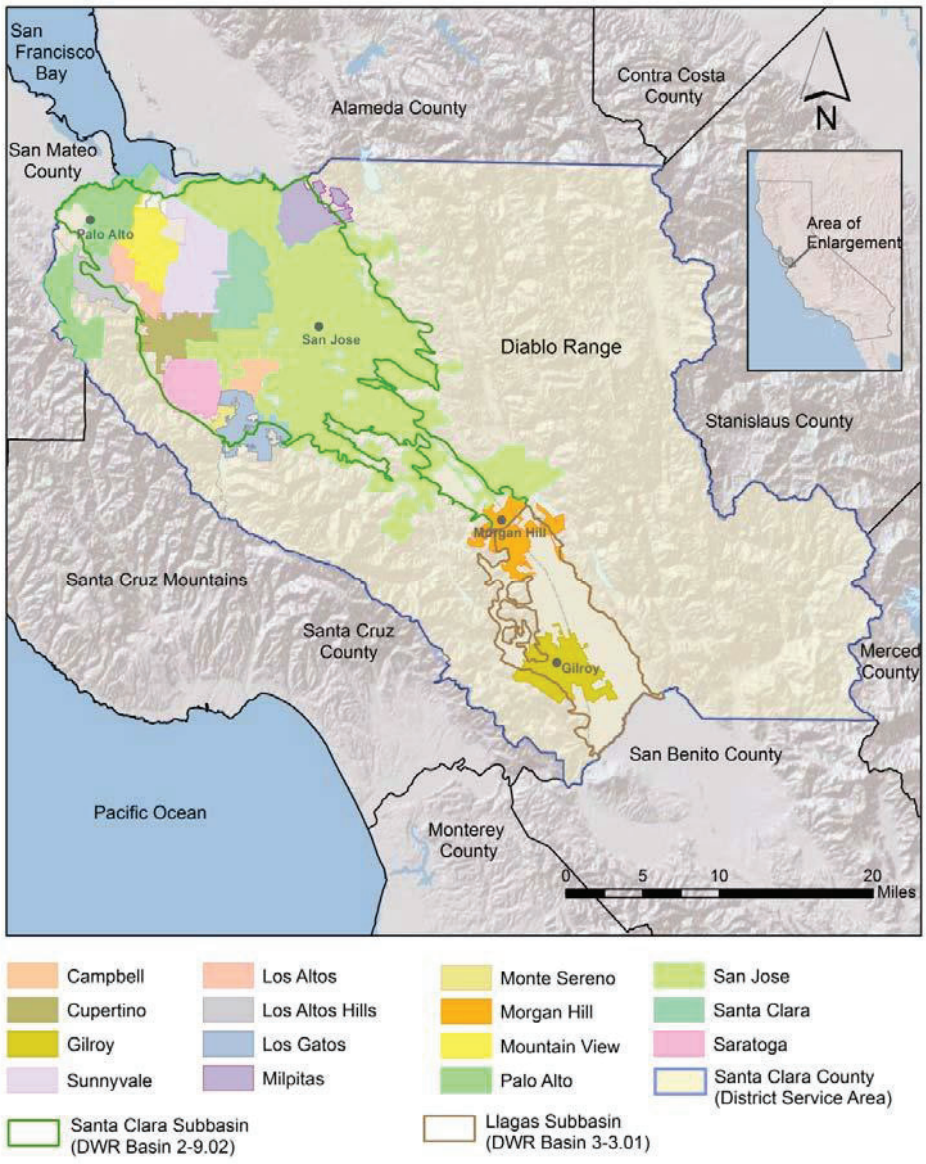
GROUNDWATER SUBBASINS

The 2016 GWMP covers the Santa Clara and Llagas subbasins, located entirely in Santa Clara County and identified by DWR as Basins 2-9.02 and 3-3.01, respectively (Figure 1-1).[6] The Santa Clara Subbasin is part of the Santa Clara

[4] Santa Clara Valley Water District, Saltwater Intrusion Investigation, September 1980.
[5] California History Center & Foundation, Water in the Santa Clara Valley: A History, 2005.
[6] California Department of Water Resources, California's Groundwater: Bulletin 118 Update 2003.

Valley Basin (Basin 2-9), which extends from southern San Jose north into Alameda, Contra Costa, and San Mateo counties. The Llagas Subbasin is part of the Gilroy-Hollister Valley Basin (Basin 3-3), which extends from Morgan Hill into San Benito County. The Santa Clara and Llagas subbasins cover a surface area of approximately 385 square miles (Figure ES-2). Due to different land use and management characteristics, the District further delineates the Santa Clara Subbasin into two groundwater management areas: the Santa Clara Plain and the Coyote Valley.

Figure ES-2. Santa Clara County Groundwater Subbasins



The groundwater subbasins provide multiple benefits to residents and businesses in Santa Clara County. Although most of the groundwater pumped is a result of District managed recharge programs, the subbasins provide some groundwater supply resulting from the percolation of rainfall in the recharge areas and natural seepage through local creeks and streams. In addition, the groundwater subbasins serve as an extensive conveyance network, allowing water to move from the recharge areas to individual groundwater wells. The groundwater subbasins also provide some natural filtration of surface water as it percolates through the soil and rock. The groundwater

subbasins provide water storage, allowing water to be carried over from the wet season to the dry season and even from wet years to dry years. Due to the District's comprehensive groundwater management programs, the subbasins are in long-term balance. Groundwater quality is typically very good, and most public water supply wells do not require any treatment beyond disinfection.

2016 GROUNDWATER MANAGEMENT PLAN

The District's prior Groundwater Management Plan was adopted by the Board in 2012 and described the District's comprehensive groundwater management framework, including basin management objectives, strategies, groundwater management programs, and outcome measures. The 2016 GWMP updates and expands on technical information in the 2012 GWMP and is prepared as an Alternative to a GSP under SGMA. Basin management goals, strategies, programs, and outcome measures in the 2016 GWMP (summarized below) are very similar to the 2012 plan, as they have been effective in ensuring sustainable conditions.

Lastly, the 2016 GWMP acknowledges potential new authorities under SGMA that would be available upon Board adoption of the 2016 GWMP. These include the ability to regulate groundwater pumping and assess different types of groundwater charges. The District plans to evaluate these new authorities in cooperation with water retailers and other interested stakeholders and consider what conditions might necessitate their implementation to sustainably manage groundwater into the future.

The District will review and update the GWMP as needed, but at least every five years. This will ensure compliance with SGMA requirements for Alternatives, and provide current groundwater management information to support five-year updates of the Urban Water Management Plan (UWMP) as required by State law.

BASIN SUSTAINABILITY GOALS AND STRATEGIES

Using the District's overall water supply management objectives, the following sustainability goals related to groundwater supply reliability and protection were developed:

- Groundwater supplies are managed to optimize water supply reliability and minimize land subsidence.
- Groundwater is protected from contamination, including salt water intrusion.

These describe the overall objectives of the District's groundwater management programs. The basin management strategies below are used to meet the sustainability goals. Many of these strategies have overlapping benefits, acting to improve water supply reliability, minimize subsidence, and protect or improve groundwater quality. The strategies are listed below and are described in detail in Chapter 6 of this report.

1. Manage groundwater in conjunction with surface water.
2. Implement programs to protect and promote groundwater quality.
3. Maintain and develop adequate groundwater models and monitoring networks.
4. Work with regulatory and land use agencies to protect recharge areas, promote natural recharge, and prevent groundwater contamination.

BASIN MANAGEMENT PROGRAMS AND ACTIVITIES

The District and local partners have implemented numerous programs to protect groundwater resources that support the sustainability goals and strategies. The District's annual Protection and Augmentation of Water Supplies (PAWS) Report[7] presents detailed information on District activities to ensure sustainable groundwater supplies, as

[7] Available at www.valleywater.org.

does Chapter 5 of this GWMP. The District's Water Utility Enterprise operations and capital budget for fiscal year 2016-17 is $359 million.

The assessment of groundwater conditions relies on timely, accurate, and representative data. The District's comprehensive monitoring programs related to groundwater levels, land subsidence, groundwater quality, recharge water quality, and surface water flow are described in detail in Chapter 7 of this plan.

OUTCOME MEASURES

The District has developed the following outcome measures to gauge performance in meeting the basin sustainability goals:

1. Projected end of year groundwater storage is greater than 278,000 AF in the Santa Clara Plain, 5,000 AF in the Coyote Valley, and 17,000 AF in the Llagas Subbasin.
2. Groundwater levels are above subsidence thresholds at the Santa Clara Plain subsidence index wells.
3. At least 95% of countywide water supply wells meet primary drinking water standards and at least 90% of Coyote Valley and Llagas Subbasin wells meet Basin Plan agricultural objectives.
4. At least 90% of wells have stable or decreasing concentrations of nitrate, chloride, and total dissolved solids (TDS).

The basis for these outcome measures and a description of how they will be evaluated is presented in Chapter 6 of this plan. The measures will be assessed annually, with related results presented in the District's Annual Groundwater Report. If evaluation of the outcome measures indicates poor performance toward meeting a basin sustainability goal, the District will first evaluate potential changes to existing programs and activities prior to considering significant groundwater management changes. Any significant policy or investment decisions would be developed and evaluated in consultation with local stakeholders, as the District does in current planning and budgeting processes.

NEXT STEPS

The District's proactive groundwater management programs and activities have resulted in sustainable groundwater conditions in the Santa Clara and Llagas subbasins, and continued planning, investments, and coordination will be needed to address future water supply challenges. Groundwater demands are projected to increase in the future, and the District is coordinating with water retailers and other interested stakeholders during the development of the Water Supply Master Plan, which will recommend various actions and investments needed to address projected future shortfalls during multi-year droughts. The District is scheduled to complete the Water Supply Master Plan in 2017.

To maintain the long-term viability of groundwater resources, the following actions are recommended:

1. Maintain existing conjunctive water management programs and evaluate opportunities for enhancement or increased efficiency.
2. Continue to aggressively protect groundwater quality through District programs and collaboration with land use agencies, regulatory agencies, and basin stakeholders.
3. Continue to incorporate groundwater sustainability in District planning efforts.
4. Maintain adequate monitoring programs and modeling tools.
5. Continue and enhance groundwater management partnerships with water retailers and land use agencies.
6. Evaluate the potential new authorities provided by SGMA.

Draft Reduced Delta Reliance document from Valley Water as of June 1, 2021. Valley Water considering final approval on June 8, 2021. Final version to replace draft upon Valley Water adoption.

Appendix H - Reduced Delta Reliance

Valley Water manages an integrated water resources system to provide safe and clean water, flood protection, and stewardship of streams on behalf of Santa Clara County's ("County") nearly two million residents and 13 water retailers. Water supplies include local surface water and groundwater, imported water, and recycled water. Water conservation is also an important part of the of the water supply mix, which helps reduce water demands and improve reliability during droughts. Valley Water is also the Groundwater Sustainability Agency (GSA) for the Santa Clara and Llagas Subbasins, which are both identified as high priority basins by the Department of Water Resources (DWR). Valley Water sustainably manages its local groundwater basins to support beneficial use by water retailers, private well users, and the environment.

Since the 1930s, Valley Water's water supply strategy has been to maximize the conjunctive management of surface water and groundwater supplies to enhance water supply reliability and avoid land subsidence. Local groundwater resources make up the foundation of the County's water supply but need to be augmented by Valley Water's comprehensive water management activities to reliably meet the needs of county residents, businesses, agriculture, and the environment. These activities include managed recharge of imported and local supplies and in-lieu groundwater recharge through the provision of treated surface water and raw water, acquisition of supplemental water supplies, and water conservation and recycling.

Imported water diverted from the Delta watershed is an important component of Valley Water's current water supply portfolio, accounting for approximately 50% of its annual water supply on average. Imported supplies received from the State Water Project (SWP) and Central Valley Project (CVP) are either sent to one of Valley Water's three drinking water treatment plants, used for managed groundwater recharge, or stored in local and State reservoirs for use in subsequent years. Valley Water also stores some of its imported water in the Semitropic Groundwater Bank in the Central Valley for withdrawal during dry periods. Valley Water's retail water agencies do not control the amount of Delta watershed water they receive from Valley Water and the interconnected nature of the groundwater basins and blended use of sources in Valley Water infrastructure like reservoirs and pipelines make it infeasible to quantify imported water use at the retailer level.

Valley Water, Not Its Retailers, Manages How Imported and Local Water Supplies Are Utilized

Valley Water's retail water agencies do not control the amount of Delta watershed water that they receive from Valley Water, and Valley Water's use of blended local and imported water sources and "conjunctive use" approach to managing its surface water and groundwater supplies make it infeasible to quantify imported water use at the retailer level.

Instead, Valley Water's retailers rely on Valley Water to maintain sustainable water supplies, including managed groundwater recharge and in-lieu groundwater recharge (e.g., treated surface water deliveries, demand management programs, etc.) The interconnected nature of the groundwater basins and blended use of sources in Valley Water infrastructure like reservoirs and pipelines make it infeasible to quantify the blend of local and imported

supplies at the retailer level. The system and operations are designed to integrate and work at a regional level.

Furthermore, depending on groundwater conditions and other drivers, Valley Water has some flexibility in adjusting its treated water pricing so as to promote the most effective use of available water resources. So, in addition to managing regional surface water and groundwater supplies through operational activities, Valley Water also uses pricing mechanisms to incentivize retailers as to how local and imported water supplies are used in the County. Together, these approaches support the balanced use of groundwater and surface water to maintain sustainable water supplies and avoid undesirable groundwater basin effects.

In addition, Valley Water manages most of the water conservation programs for the County with the support of retailers through water rates and cost share agreements.

As such, Valley Water believes that its quantification of the use of imported and local water supplies in the County and its showing of reduced reliance on the Delta watershed should apply to all of the local retail water agencies that it serves.

Short Term Impact of Valley Water's Largest Reservoir Being Maintained at Deadpool During Dam Retrofit Project (expected completion around 2030)

In 2020 the Dam Safety Division of the Federal Energy Regulatory Commission ordered that Valley Water's largest reservoir, Anderson Reservoir, capable of holding over 89,000 acre-feet (AF) of water supplies (both local and imported water) be drained to deadpool until it is seismically retrofitted. This is a ten-plus year project estimated to cost approximately $700 million. Because Valley Water does not have Anderson Reservoir for the next 10 years to store local rainfall and runoff as a source for treated water and managed groundwater recharge, Valley Water will, especially if drought conditions persist, need to *temporarily supplement its local water supplies with additional (i.e., more than normal) imported water supplies* during this period to meet its treated water contract obligations and keep its local groundwater basins from becoming severely depleted.

H.1 Regional Self Reliance

Water supplies that contribute to regional self-reliance are shown in Table C-3. Consistent development and funding of these supplies has resulted in reduced reliance on the percentage of water supplies imported from the Delta watershed as compared to overall water use in the County. Valley Water, with the financial support of all its retailers as reflected in its water rates, has made significant investments in demand management and developing local supplies to reduce Santa Clara County's reliance on the Delta watershed and increase regional self-reliance. These investments include:

- Conservation and demand management
- Recycled and purified water
- Stormwater capture
- Dam improvements/seismic retrofits to lift storage restrictions on local reservoirs
- Regional collaborations to increase self-reliance

Conservation and Demand Management

Valley Water has made significant investments to manage demands for water and continues to be a leader in water conservation in the region.

Valley Water manages most of Santa Clara County's water conservation programs with the support of retailers. Retailers support the conservation programs through water rates, outreach, cost share agreements, and grants. Over time, Valley Water has implemented nearly 20 different ongoing water conservation programs that use a mix of incentives and rebates, free device installation, one-on-one home visits, site surveys, and education to reduce water use countywide (See Chapter 9 for a detailed description). Water savings from these programs are tracked on a countywide basis, not at the retailer level.

Collectively, Santa Clara County reduced water use by approximately 75,000 AF in 2020 as compared to 1992 through Valley Water's conservation and stormwater capture programs. In 2019, Valley Water updated its Water Supply Master Plan 2040 (WSMP), which includes a range of water conservation programs as well as stormwater capture/recharge programs that are designed to achieve a goal of increasing these savings to 110,000 AF per year (AFY) by 2040. In 2021, Valley Water will update its Water Conservation Strategic Plan to identify new or improved strategies to reach and expand long-term savings goals as well as future Water Use Objectives required by Assembly Bill 1668 and Senate Bill 606.

With the financial support of its retailers, Valley Water is able to engage in regional campaigns with wide-reaching impact. From 2012 to 2020 alone, Valley Water spent $47 million on water conservation programs. Regional investments in conservation and demand management programs benefit the entire region. These programs help to increase regional water supply reliability and reduce demands for imported water supplies.

Recycled and Purified Water

Valley Water actively promotes the use of recycled and purified water. Over the past decade, Valley Water has advanced water reuse in the County by leading water reuse planning efforts, developing wholesale recycled water programs, and constructing new infrastructure. In 2020, recycled water was about 5 percent (17,000 AFY) of the County's water supply that is distributed for non-potable uses.

Valley Water constructed the Silicon Valley Advanced Water Purification Center (SVAWPC) as a nationally-recognized pilot facility to develop purified water. The SVAWPC can produce up to 8 million gallons of purified water per day. Purified water is blended with tertiary treated water to create high quality recycled water that can be used by a wide variety of customers. Since March 2014, the SVAWPC has demonstrated the effectiveness of advanced treatment technologies (microfiltration, reverse osmosis, and advanced oxidation) to produce purified water and has set the stage for Valley Water to begin a potable reuse program. Potable reuse will involve using advanced purified water to augment groundwater or surface water supplies.

Valley Water is currently working with the cities of Palo Alto and Mountain View on additional recycled water options within those cities. In December 2019, Valley Water executed an agreement with the cities of Palo Alto and Mountain View that defined cost-sharing and supply commitments related to future water reuse. The agreement includes a minimum commitment of approximately 11,000 AFY of wastewater effluent provided to

Valley Water for purified water production at a future regional Advanced Water Purification Facility. With this agreement, Valley Water is working on a location for a regional Advanced Water Purification Facility at the SVAWPC, to produce up to 11,000 AFY of potable reuse supply by 2028 to replenish groundwater.

Valley Water is completing a Countywide Water Reuse Master Plan (CoRe Plan) in 2021 to identify feasible opportunities to expand water reuse, improve water supply reliability, and increase regional self-reliance. The CoRe Plan outlines Valley Water's opportunities and strategies toward achieving up to 24,000 AFY for potable water reuse. Potable reuse would be managed by Valley Water to either augment groundwater or treated surface water. In both instances, it will be blended with several other sources before being used by retailers making it infeasible to determine the proportion of potable recycled water going to each retailer compared to water supplies imported through the Delta.

Stormwater Capture

Valley Water managed recharge program includes capturing local runoff in reservoirs and releasing it to groundwater recharge facilities or drinking water treatment plants. Through its WSMP, Valley Water plans to increase local stormwater runoff capture to increase natural groundwater recharge as part of its 'ensure sustainability strategy.' Valley Water's stormwater projects for next 20 years include:

- **Green Infrastructure**. As part of its conservation program, Valley Water initiated a rebate program to incentivize the installation of rain barrels and cisterns, and the construction of rain gardens in residential and commercial landscapes.

- **Flood-Managed Aquifer Recharge (Flood-MAR).** Valley Water is working on a preliminary feasibility study to evaluate the potential for capturing and recharging stormwater on open space, a process referred to as Flood-MAR. The feasibility study will help identify potential areas where Flood-MAR projects could be implemented within Santa Clara County, evaluate potential program participation incentives, and assess the potential water supply benefit of Flood-MAR. The preliminary feasibility study is scheduled to be completed in 2022, with the goal of identifying a subsequent pilot program.

- **Centralized Stormwater Capture Projects.** Valley Water plans to develop two centralized stormwater capture projects in northern Santa Clara County. Centralized stormwater capture projects capture stormwater from multiple parcels for recharge in a single location and/or are municipal projects, including "green streets" projects. The Santa Clara Basin Storm Water Resources Plan completed in December 2018 identified potential projects throughout northern Santa Clara County. These projects would likely be partnerships with other jurisdictions and require outside funding. Regional investments in stormwater capture programs benefit the entire region.

These programs help to increase regional water supply reliability and reduce demands for imported water supplies. Water supplies developed through these stormwater capture programs are tracked on a countywide basis, not at the retailer level.

Dam Improvements/Seismic Retrofits to Lift Storage Restrictions on Local Reservoirs

Valley Water manages 10 dams and surface water reservoirs with a total storage capacity of about 166,000 acre-feet. Currently, five of Valley Water's 10 reservoirs are operating under various levels of restricted capacity due to seismic stability concerns. These are Almaden, Anderson, Calero, Coyote, and Guadalupe reservoirs. Future average use of local surface water supply is projected to increase over the planning horizon as Valley Water's dams are seismically retrofitted, allowing operating capacity restrictions to be lifted. The seismic retrofit of most these reservoirs (except Coyote) is expected to be completed by 2035 which will allow them to be operated at their full capacity.

Regional Collaborations to Increase Self-Reliance

Valley Water has partnered with seven water agencies in the Bay Area (Alameda County Water District, Bay Area Water Supply and Conservation Agency, Contra Costa Water District, East Bay Municipal Utility District, Marin Municipal Water District, San Francisco Public Utilities Commission, and Zone 7 Water Agency) to investigate opportunities for regional collaboration. The purpose of this planning effort, known as Bay Area Regional Reliability (BARR), is to identify projects and processes to enhance water supply reliability across the region, leverage existing infrastructure investments, facilitate water transfers during critical shortages, and improve climate change resiliency. Projects to be considered include interagency interties and pipelines; treatment plant improvements and expansion; groundwater management and recharge; potable reuse; desalination; and water transfers. While no specific capacity or supply has been identified, this program may result in the addition of future supplies that would benefit Santa Clara County and increase the region's self-reliance. For example, pursuant to this program, and because Anderson Reservoir has been drained to deadpool, Valley Water and Contra Costa Water District are actively exploring mutually beneficial water transfer, exchange and storage projects and agreements.

Valley Water is also an active participant in the Bay Area and Pajaro River Watershed Integrated Regional Water Management (IRWM) programs. To date, Valley Water has received $86.3 million in IRWM grant funding awards to support various water resource management projects, including water recycling, water conservation, flood protection, and dam seismic retrofits.

H.2 Showing of Reduced Reliance on the Delta Watershed

Valley Water has used the example methodology set forth in Appendix C of the 2020 Urban Water Management Plan Guidebook to demonstrate its reduced reliance on the Delta watershed.

As indicated in Tables C-2 and C-3, based on its past and ongoing efforts to increase regionally developed water supplies, planned water supply projects including expansion of water recycling, and long-term water conservation savings recommended in the WSMP, Valley Water estimates that it and the County in general have reduced, and will continue to reduce, their reliance on imported water supplies diverted from the Delta watershed from the 2010 baseline year through 2040, in consistence with the Delta Plan and regulation WR P1. Tables C-2 and C-3 show estimated changes in Valley Water's Delta watershed supply from 2010 through 2045. *Compared to baseline, the projected percentage decrease of Delta watershed supply in Valley Water's portfolio ranges from 5.1% (2015) to 13.8% (2040).*

Data for the 2010 and 2015 time periods were developed using averages over the ten-year periods (2005-2014 and 2010-2019, respectively). Data for 2020 uses actual 2020 data. Annual demand and supply data were collected from Valley Water's Protection and Augmentation of Water Supplies (PAWS) reports that are published annually. Actual numbers from the relevant years were not used since supplies and demands are highly dependent on annual hydrology. Averaging values over a longer period allows sometimes extreme annual variation to be smoothed out to a value that is more indicative of conditions of that time.

All demand and supply data for 2025, 2030, 2035, 2040, and 2045 is from water supply modeling conducted for this effort. The WSMP has a time horizon of 2040; therefore, no new projects are included in the 2040 to 2045 timeframe.

All data for water conservation comes from Valley Water's Water Savings Model, which tracks water conservation savings since 1992.

Reduced Reliance Calculation

Table C-1: Optional Calculation of Water Use Efficiency -To be completed if Water Supplier does not specifically estimate Water Use Efficiency as a supply

Service Area Water Use Efficiency Demands (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Service Area Water Demands with Water Use Efficiency Accounted For								
Non-Potable Water Demands								
Potable Service Area Demands with Water Use Efficiency Accounted For	-	-	-	-	-	-	-	-

Total Service Area Population	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Service Area Population								

Water Use Efficiency Since Baseline (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Per Capita Water Use (GPCD)	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Change in Per Capita Water Use from Baseline (GPCD)		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Estimated Water Use Efficiency Since Baseline		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

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

Total Service Area Water Demands (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Service Area Water Demands with Water Use Efficiency Accounted For	355,000	315,000	306,000	330,000	325,000	330,000	335,000	345,000
Reported Water Use Efficiency or Estimated Water Use Efficiency Since Baseline	-	13,000	28,000	40,000	53,000	58,000	62,000	62,000
Service Area Water Demands without Water Use Efficiency Accounted For	355,000	328,000	334,000	370,000	378,000	388,000	397,000	407,000

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

Water Supplies Contributing to Regional Self-Reliance (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Water Use Efficiency	-	13,000	28,000	40,000	53,000	58,000	62,000	62,000
Water Recycling	17,000	18,000	17,000	16,000	19,000	22,000	26,000	28,000
Stormwater Capture and Use							1,000	1,000
Advanced Water Technologies (purified water for potable use)	-	-	-	-	7,000	7,000	7,000	7,000

Conjunctive Use Projects (local surface water)	58,000	55,000	59,000	36,000	37,000	40,000	41,000	41,000
Local and Regional Water Supply and Storage Projects (Non-Valley Water controlled)	11,000	9,000	7,000	11,000	11,000	11,000	11,000	11,000
Other Programs that Contribute to Regional Self-Reliance (natural groundwater recharge)	61,000	61,000	61,000	61,000	61,000	62,000	62,000	62,000
Water Supplies Contributing to Regional Self-Reliance	147,000	156,000	172,000	164,000	188,000	200,000	210,000	212,000

Service Area Water Demands without Water Use Efficiency (Acre-Feet)	**Baseline (2010)**	**2015**	**2020**	**2025**	**2030**	**2035**	**2040**	**2045 (Optional)**
Service Area Water Demands without Water Use Efficiency Accounted For	355,000	328,000	334,000	370,000	378,000	388,000	397,000	407,000

Change in Regional Self Reliance (Acre-Feet)	**Baseline (2010)**	**2015**	**2020**	**2025**	**2030**	**2035**	**2040**	**2045 (Optional)**
Water Supplies Contributing to Regional Self-Reliance	147,000	156,000	172,000	164,000	188,000	200,000	210,000	212,000
Change in Water Supplies Contributing to Regional Self-Reliance		9,000	25,000	17,000	41,000	53,000	63,000	65,000

Percent Change in Regional Self Reliance (As Percent of Demand w/out WUE)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Percent of Water Supplies Contributing to Regional Self-Reliance	41.4%	47.6%	51.5%	44.3%	49.7%	51.5%	52.9%	52.1%
Change in Percent of Water Supplies Contributing to Regional Self-Reliance		6.2%	10.1%	2.9%	8.3%	10.1%	11.5%	10.7%

Table C-4: Calculation of Reliance on Water Supplies from the Delta Watershed

Water Supplies from the Delta Watershed (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
CVP/SWP Contract Supplies (including other imported water purchases)	173,000	146,000	139,000	130,000	134,000	136,000	139,000	142,000
Delta/Delta Tributary Diversions (diverted by SFPUC)	55,000	48,000	46,000	55,000	56,000	59,000	61,000	63,000
Transfers and Exchanges								
Other Water Supplies from the Delta Watershed								
Total Water Supplies from the Delta Watershed	228,000	194,000	185,000	185,000	190,000	195,000	200,000	205,000

Service Area Water Demands without Water Use Efficiency (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)

Service Area Water Demands without Water Use Efficiency Accounted For	355,000	328,000	334,000	370,000	378,000	388,000	397,000	407,000

Change in Supplies from the Delta Watershed (Acre-Feet)	**Baseline (2010)**	**2015**	**2020**	**2025**	**2030**	**2035**	**2040**	**2045 (Optional)**
Water Supplies from the Delta Watershed	228,000	194,000	185,000	185,000	190,000	195,000	200,000	205,000
Change in Water Supplies from the Delta Watershed		(34,000)	(43,000)	(43,000)	(38,000)	(33,000)	(28,000)	(23,000)

Percent Change in Supplies from the Delta Watershed(As a Percent of Demand w/out WUE)	**Baseline (2010)**	**2015**	**2020**	**2025**	**2030**	**2035**	**2040**	**2045(Optional)**
Percent of Water Supplies from the Delta Watershed	64.2%	59.1%	55.4%	50.0%	50.3%	50.3%	50.4%	50.4%
Change in Percent of Water Supplies from the Delta Watershed		-5.1%	-8.8%	-14.2%	-14.0%	-14.0%	-13.8%	-13.9%

Appendix I

Water Shortage Contingency Plan

PLACEHOLDER

Final Water Shortage Contingency Plan
to be inserted here

Appendix J

Water Conservation Survey Form

DIY Water Wise Indoor Survey Worksheet

Name

Address

City

Zip Code

Email

Telephone

Date of Survey

Meter reading

Provide the number shown on the dial or meter's face.

The Pin Test

Does your water meter register when all your water using fixtures and appliances are turned off?

○ Yes (Go to House Line Test) ○ No (Go to Toilet Test)

The House Line Test

The House Line Test: Does the irrigation system branch off the house line before the house line shut-off valve?

○ Yes ○ No

Does the irrigation system have a shut-off valve?

○ Yes ○ No

After you turn off the house line and do a second Pin Test: Is there movement?

○ Yes (Call a plumber to fix a house line leak, or check irrigation system)

○ No (Leak is beyond this valve. Go to Toilet Test)

Turn on the house line valve using the same number of turns you to turn it off.

Leaks

Did you find any leaks indoors?

○ Yes ○ No

Any signs of standing water damage?

○ Yes ○ No

Any signs of leakage or water damage?

○ Yes ○ No

If so, where?

The Toilet Leak Test

Listen: Did you hear a noise?

	Yes	No
Toilet 1	○	○
Toilet 2	○	○
Toilet 3	○	○

Look: Did your parts work smoothly?

	Yes	No
Toilet 1	○	○
Toilet 2	○	○
Toilet 3	○	○

Look: Does water stop one inch below the top of the overflow pipe?

	Yes	No
Toilet 1	○	○
Toilet 2	○	○
Toilet 3	○	○

Dye Test: Did the flapper leak?

	Yes	No
Toilet 1	○	○
Toilet 2	○	○
Toilet 3	○	○

Measure Flow Rate

Showers

Showers: Do your showerheads use more than 2.0 gpm?

○ Yes ○ No

Total Showerheads

Shower Flow Rate A

Enter the highest flow rate

Shower Flow Rate B

Enter the next-highest flow rate

Bathroom Sink Faucets

Do your bathroom sink faucets use more than 1 gallon per minute (gpm)?

○ Yes ○ No

If you found you have different flow rates throughout your home, enter the highest flow rates in 'A', then the next highest flow rate in 'B'. If you have more than two flow rates, please provide any additional details in the 'Comments' at the end of this form.

Total Bathroom Sink Faucets

Bathroom Sink Faucets Flow Rate A

Enter the highest flow rate

Bathroom Sink Faucets Flow Rate B

Enter the next-highest flow rate

Kitchen Sink Faucets

Do your kitchen sink faucets use more than 1.5 gallon per minute (gpm)?

○ Yes ○ No

Total Kitchen Sink Faucets

Kitchen Sink Faucets Flow Rate A

Enter the highest flow rate

Kitchen Sink Faucets Flow Rate B

Enter the next-highest flow rate

Free Devices Requested

Notes:

Please note we will send you efficient faucet aerators, showerheads or toilet flappers based on your responses above, which may be less than what you specify below.

Toilet Flappers Requested

Showerheads Requested

For a 2.0 gpm showerheads, enter the quantity you want. Otherwise, check your local hardware store for even more efficient WaterSense-labeled showerheads.

Bathroom Sink Aerators Requested

Kitchen Sink Aerators Requested

Appliances

Is there any sign of water damage around your appliances?

○ Yes ○ No

Comments

Comments

Submit

Quick Links

Board of Directors

Board Meeting Agendas

Board Committees

Contact Us

Phone: 408-265-2600

Pollution Hotline

888-510-5151

Valley Water News

A new group of water ambassadors ready to make an impact

Valley Water completes flood protection project for Mountain View, Los Altos

Valley Water delegation participates in successful virtual advocacy visits with federal leaders

Appendix K

Public Education and Outreach Materials

Facebook Advertisements
Winter 2018

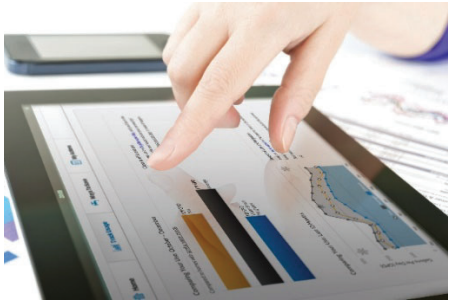
SJEnvironment

Let's make water efficiency a way of life! Replace an old lawn with a water saving landscape.

A message from your San José Municipal Water System.
Learn More (link to www.southbaygreengardens.org)

SJEnvironment

Sign up for a free home water report. Register using your water account number.



Compare your water use to your neighbors. A message from your San José Municipal Water System.
(link to www.sanjose.watersmart.com)

SJEnvironment

Prevent water waste. Let's make water efficiency a way of life. Learn San José's water use rules.

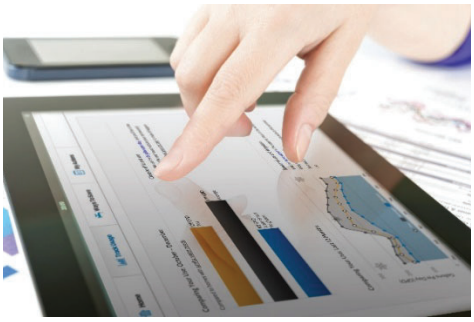
A message from your San José Municipal Water System.
Learn More (link to www.sjenvironment.org/muniwater)

Twitter Advertisements
Fall 2016

Message 1: (Limited to 116 characters)
Let's make water efficiency a way of life! Replace an old lawn with a water saving landscape.

Headline: (Limited to 70 characters)
A message from your San José Municipal Water System.
URL: www.southbaygreengardens.org

Message 2: (Limited to 116 characters)
Sign up for a free home water report. Register using your water account number.



Headline: (Limited to 70 characters)
A message from your San José Municipal Water System.
URL: www.sanjose.watersmart.com

Mercury News Online Advertisement Text
Winter 2018

Evergreen Times Print Advertisement
Spring 2017

Bill Insert
Spring/Summer 2018

Front:

Back:

Appendix L

2020 UWMP Adoption Resolution

PLACEHOLDER

Final 2020 UWMP Adoption Resolution
to be inserted here

ATTACHMENT B

DRAFT | JUNE 2021

WATER SHORTAGE CONTINGENCY PLAN

CITY OF SAN JOSE

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

DRAFT - Contact the Office of the City Clerk at (408) 535-1260 or CityClerk@sanjoseca.gov for final document, or access online here: https://www.sanjoseca.gov/your-government/environment/water-utilities/drinking-water

TABLE OF CONTENTS

WATER SHORTAGE CONTINGENCY PLAN

This document provides a plan of action during various stages of a water shortage, in compliance with Section 10632 of the California Water Code.

In response to the 2012-2016 drought, the Department of Water Resources (DWR) has updated Water Shortage Contingency Plan (WSCP) requirements. Updates in this 2020 WSCP include Annual Water Supply and Demand Assessment procedures, the standardization of water supply stages of action for the WSCP, and the quantification of how each contingency action affects supply and demand. Tables and figures are numbered to match DWR's content requirements.

The City's policy is to maximize the use of its resources, each to its best application, to maintain water supply under varying levels of availability, with a focus on ensuring public health and safety.

Water Supply Reliability Analysis

Water supply reliability analyses conducted in Section 7 of the 2020 Urban Water Management Plan (UWMP) identifies constraints on water supply sources and evaluates each source's availability during a normal year, a single dry year, and a multi-year drought. These analyses show that supply resources are sufficient to meet demands in a normal year but the WSCP will need to be implemented to reduce demands in single dry years and in 5-year drought periods. SJMWS depends on surface water from San Francisco Public Utilities Commission (SFPUC), local and imported surface water from Valley Water, groundwater, and recycled water. Local and regional droughts are the primary issues that could cause a water shortage, and other causes may include source water quality issues, infrastructure damage, or a natural disaster. Each source has its own constraints; however, operationally shifting the proportion of each supply used within each service area would allow for management of changing supply availability.

The supply of imported water from SFPUC is constrained by hydrology, infrastructure, and institutional parameters. In general, the SFPUC supply depends on reservoir storage for water reliability. During dry periods, imported water through SFPUC is allocated using a water shortage allocation plan. Climate change may affect the reliability of this resource.

Valley Water supplies include local groundwater, surface water, and imported water as well as recycled and purified water. This source may be vulnerable to climate change, hydrologic variability, infrastructure failure, regulatory actions, or invasive species. In general, the reservoirs are sized for annual operations, and it can be challenging to capture all the available water. Several upcoming plans through the "Ensure Sustainability" strategy in Valley Water's Water Supply Master Plan can help improve water reliability. These include securing and optimizing the use of current supplies and infrastructure as well as expanding water recycling and long-term conservation. Future projects and initiatives can increase supply reliability in the future.

The Drought Risk Assessment (UWMP Section 7) assesses the ability of current supplies to meet demand during a multi-year drought. For a drought beginning in 2021 and lasting for five consecutive years, the analysis shows that it is necessary to implement the WSCP response actions to reduce water demands by up to 12% to offset a water supply shortfall starting in 2023.

Annual Water Supply and Demand Assessment Procedures

Beginning in 2022, agencies must prepare and submit an annual water supply and demand assessment (Annual Assessment), pursuant to section 10632 (a)(2) of the Water Code. These annual assessments must be submitted to DWR by July 1 of each year.

Each year, beginning in January, staff will compile necessary data for the Annual Assessment. The item will go through the review process and proceed to the Director of Environmental Services, or approved designee, in Spring of each year for a formal approval. This report will summarize supply and demand from the previous year and will include an estimate of next year conditions.

The Annual Assessment will use the most recent available data to estimate the projected availability of surface water from SFPUC, local and imported surface water from Valley Water, groundwater, and recycled water as well as the expected demand for the next year. Projected supplies will be largely dependent on climate and water conditions during the previous water year and the projected imported water allocations. In the Annual Assessment, the supplies will be assessed for both a current year and a subsequent dry year, taking plausible constraints into account.

The Annual Assessment will include documentation of the projected supply and demand for the upcoming year and determination of whether supply will be sufficient. Supplies will be assessed by describing and quantifying the previous year's water supply and estimating the upcoming year's supplies. Groundwater use and basin conditions in the previous water year will be assessed to determine the availability of groundwater. The supply assessment may include new or updated data as may be relevant to current and planned supply levels, such as information on climatic conditions, groundwater levels and extraction, land use, imported water deliveries, recharge rates, and water quality data. Any infrastructure projects or conditions will also be factored into the Annual Assessment. The demand assessment will rely on agency reported totals by use category.

Unconstrained customer demand will be assessed by looking at historical growth, climate, and water demand over the previous water year. The previous year's use will be adjusted to account for new customer connections. If the planned use is greater than the dry year supply, the City should be prepared to enact the WSCP.

Six Standard Water Shortage Levels

The 2015 WSCP outlined five stages of action, now called levels in 2020, that would be undertaken in response to San José City Council (Council) declaration of a water shortage. These levels focus on restrictions that would decrease water demand and depend upon the projected severity and duration of the water supply shortage. The 2015 WSCP included Stage 0, not indicating a water shortage but rather a constant stage to prevent water waste, and Stages 1 through 5, where at least 10, 25, 30, 40, and 50 percent of water demand is reduced, respectively.

The 2020 UWMP guidelines state that all WSCPs must include six water shortage levels corresponding to water shortage levels of up to 10 percent, up to 20 percent, up to 30 percent, up to 40 percent, up to 50 percent, and greater than 50 percent of total water supply. During the 2012 through 2016 drought,

differences in state and local definitions led to uncertainty in public communication and state policy. The standardization is meant to aid communication and response action implementations across the state.

Water Code Section 10632(a)(3)(B) allows suppliers to retain existing water shortage response plan stages if the existing stages are directly related to the specified six levels. The six stages identified in 2015 can translate directly to the six new WSCP levels, as shown in **Figure 8-1**. The new levels are outlined in **Table 8-1.**

The 2015 WSCP Stage 0 includes baseline water conservation actions that are implemented when no water crisis has been declared. However, these demand reduction actions are comparable to or more restrictive than demand reduction actions implemented by surrounding water agencies during at least Level 1 (less than 10%). The 2015 Stage 0 has been adjusted to the new Level 1 (less than 10%), with the understanding that these restrictions will always be in place.

2015 UWMP Stage	Shortage Level		2020 WSCP Level	Shortage Level
0	0	→	1	Less than 10%
1	10-25%	→	2	10-20%
2	25-30%	→	3	20-30%
3	30-40%	→	4	30-40%
4	40-50%	→	5	40-50%
5	Greater than 50%	→	6	Greater than 50%

Figure 8-1. 2015 Water Shortage Stages Translated to 2020 Water Shortage Levels.

Table 8-1. Water Shortage Contingency Plan Levels

Shortage Level	Percent Shortage Range	Shortage Response Actions (*Narrative description*)
1	Up to 10%	No shortage declared. Water waste prevention measures in place.
2	Up to 20%	10 percent shortage declared. Current water use may be tapping into groundwater reserves.
3	Up to 30%	25 percent shortage declared. Shortage conditions are worsening. Groundwater levels continue to decrease.
4	Up to 40%	30 percent shortage declared. Signs of multi-year drought.
5	Up to 50%	Greater than 40 percent shortage declared. Continued signs of multi-year drought.
6	>50%	Greater than 50 percent shortage. Water supply reserved for health and safety needs.

Shortage Response Actions

Water shortages can be met by either augmenting the supply or decreasing the water demand. In the WSCP, proposed response actions must be implementable. Each action, the levels in which it is implemented, and the estimated percent by which it can decrease demand is summarized in **Table 8-2**.

Table 8-2. Demand Reduction Actions

Shortage Level[1]	Demand Reduction Actions	How much is this going to reduce the shortage gap? Include volume units used (volume type or percentage)	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
1	Other	5%	Various outreach strategies in San José Municipal Code aimed toward achieving long-term water conservation targets and prohibiting water waste.	Yes
1	Other	<1%	Leaks, broken water pipes, irrigation systems, and faucets must have repairs initiated within five working days. Repairs must be completed as soon as practical.	Yes
1	Other	<1%	Public use of water from hydrants is prohibited except under certain conditions	Yes
2,3,4	Landscape - Limit landscape irrigation to specific days	Varies; estimated 10-30% depending on schedule	No outdoor irrigation more than 1-4 days per week, according to schedule set by Council (depending on shortage level).	Yes
3	Water Features - Restrict water use for decorative water features, such as fountains	1%	Filling of non-recirculating decorative fountains with potable water is prohibited. Cannot operate a decorative fountain with potable water unless it is recirculating, non-misting, and lined.	Yes

Table 8-2. Demand Reduction Actions				
Shortage Level[1]	Demand Reduction Actions	How much is this going to reduce the shortage gap? Include volume units used (volume type or percentage)	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
3	Landscape - Other landscape restriction or prohibition	1%	No filling ornamental lakes or ponds with potable water	Yes
3	Other - Prohibit use of potable water for washing hard surfaces	<1%	No potable water may be used to clean any exterior paved or hard-surfaced area, or the exterior of any building or structure - except with a bucket, without a city exemption	Yes
3	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	<1%	No washing of vehicles, except at a commercial car washing facility that utilizes a re-circulating water system to capture or reuse water	Yes
4	Landscape - Other landscape restriction or prohibition	1%	No new outdoor landscaping or plantings during May through October with operating overhead irrigation, with exceptions for drip irrigation and drought tolerant or native plants, plants/trees grown for consumption, other exceptions.	Yes
4	Other water feature or swimming pool restriction	1%	No refilling residential swimming pools or outdoor spas more than one foot; no initial filling or residential pools/spas with potable water	Yes
4	Other	1%	Customers must repair leaks within 48 hours of notification	Yes
4	Other water feature or swimming pool restriction	<1%	Filling of any swimming pool, fountain or spa is prohibited	Yes

Table 8-2. Demand Reduction Actions				
Shortage Level[1]	Demand Reduction Actions	How much is this going to reduce the shortage gap? Include volume units used (volume type or percentage)	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
5	Landscape - Other landscape restriction or prohibition	40-50%	Council would adopt restriction prohibiting all landscape irrigation. Watering of public benefit facilities and recreational landscape subject to restriction	Yes
5	Other	3%	Enforceable mandatory water budget program	Yes

Notes:
[1] Each level adopted continues the restrictions associated with the prior level(s)

Outreach, education, and social pressures are expected to decrease demand, in addition to the restrictions implemented through the WSCP. In response to the new WSCP guidelines, the effectiveness of each action has been quantified for SJMWS using the best available data. It should be noted that the effectiveness of many shortage response actions has not been studied by the City, and existing studies may not be directly applicable to San José. These estimates are best used as guidelines to inform decision makers about which actions may contribute most to demand reductions.

The effectiveness of each action has been estimated based on available data, including the observed water demand reduction during the 2012 through 2016 drought, studies and literature reviews examining the effectiveness of individual and combined response actions, and calculations of demand decreases scaled to the regional population. There are few studies on the effectiveness of individual estimates. Historical demand data, both from SJMWS and case studies, show reductions during droughts that are a combined result of demand restrictions, public education, and social pressures. Each calculation relies on several assumptions, introducing a high level of uncertainty. For example, estimating cost savings from restricting at-home carwashes involves assumptions about how many SJMWS customers would wash their car at home in a non-drought month, equipment used at customer homes, and the volume of water per wash.

Special Water Feature Distinction

The WSCP distinguishes water features from swimming pools, for example, using designations such as “decorative water features” and “recreational water features” and provides response actions, enforcement actions, and monitoring programs for each, respectively. Per the San José Municipal Code, decorative fountains may not operate in Level 2 and swimming pools cannot be filled or refilled in Level 3.

Locally Appropriate Supply Augmentation

Supply augmentation is managed on an ongoing basis by the wholesalers; San José does not have additional supply augmentation options (**Table 8-3**). A detailed explanation of water supply sources and their use is in Section 6 of the UWMP.

Table 8-3. Supply Augmentation and Other Actions			
Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier	How much is this going to reduce the shortage gap?	Additional Explanation or Reference
All	Other Actions (describe)	N/A	See note

Notes: San José does not have augmented supplies available as a retailer; supply augmentation for purchased supplies is managed by wholesalers. San José will focus on demand reduction actions as identified in Table 8-2.

Locally Appropriate Demand Reduction by Level

The Water Code requires an analysis of mandatory prohibitions, penalties, and consumption reduction methods against specific water use practices, which may be considered excessive during water shortages.

The City can set forth water use violation fines and charges for removal of flow restrictors, establish the period during which mandatory conservation occurs, and enforce water use targets. In addition to the restrictions placed on metered water use, other unmetered water use practices can be limited during water shortages such as reduced distribution system flushing by SJMWS staff.

The City will enforce mandatory reduction programs as necessary to decrease consumption during a water shortage. **Table 8-2** provides the details of restrictions and prohibitions on end uses, the levels in which they are implemented, the estimated demand reduction they will cause, and associated implementation of penalties, charges, or other enforcement methods. SJMWS currently has limits on consumption to discourage and/or prevent excessive use during times of supply shortage, as specified in the San José Municipal Code Chapter 15.10. Additional mandatory restrictions may be added to the plan or implemented as needed.

Level 1: Less than 10% Water Shortage

Level 1 mandatory conservation actions are listed in the San José Municipal Code Chapter 15.10 and are in force at all times to prohibit water waste. They are summarized below:

- No irrigating landscapes between 10 am and 8 pm, unless using a bucket, hand-carried container, or a hose with a shut-off nozzle (15.10.290A).
- Sprinklers cannot run more than 15 minutes per station per day (15.10.290B).
- No excessive water runoff is allowed (15.10.220A & B).
- Leaking or broken water pipes, irrigation systems, and faucets must have repairs initiated within five working days and repaired as soon as practical (15.10.210A & B).
- No cleaning of structures or paved surfaces with a hose without a positive shut-off nozzle (15.10.240).
- No cleaning of vehicles with a hose without a positive shut-off nozzle (15.10.250)

- Commercial car washes must use water recycling equipment, a bucket and hand-washing, or a hose with positive shut-off nozzle (15.10.255A, B, C).
- No serving water in food service establishments unless requested by the customer (15.10.230A).
- Restaurants that use pre-rinse spray valves must use ones that are low flow (15.10.230B).
- Hotels/motels must provide guests the option to decline daily linen washing (15.10.235).
- Potable water cannot be used for building or construction purposes, such as dust control, without written exception by City (15.10.260).
- Water cannot be used from a hydrant without prior City approval (15.10.270).
- Potable water cannot be used for irrigation purposes where a recycled water service is currently plumbed to the site (15.10.295).

Level 2: 10 – 20 Percent Water Shortage

This Level continues the ongoing mandatory conservation actions specified in San José Municipal Code Chapter 15.10. Additional use restrictions go into effect when the Council declares a ten percent or greater water shortage. Outdoor irrigation is limited to 0-4 days per week. The number of days per week that irrigation is allowed is according to a schedule set by Council Resolution.

Level 3: 20 – 30 Percent Water Shortage

This Level builds upon the restrictions in Level 1 and Level 2. Council may choose to change the number of days per week in which outdoor irrigation is permitted. Additional restrictions go into effect when the Council declares there is a twenty-five percent or greater water shortage. The following restrictions are also in place:

- Filling of non-recirculating decorative fountains with potable water is prohibited. Cannot operate a decorative fountain with potable water unless it is recirculating, non-misting, and lined.
- No filling ornamental lakes or ponds with potable water.
- No potable water may be used to clean any exterior paved or hard-surfaced area, or the exterior of any building or structure - except with a bucket, without a city exemption.
- No washing of vehicles, except at a commercial car washing facility that utilizes a re-circulating water system to capture or reuse water.

Level 4: 30 – 40 Percent Water Shortage

Restrictions in Levels 1 through 3 remain in place. Additional restrictions occur when the Council declares a thirty percent or greater water shortage. The Council may choose to change the number of days per week in which outdoor irrigation is permitted. The following restrictions are also in place:

- No new outdoor landscaping or plantings during May through October with operating overhead irrigation, with exceptions for drip irrigation and drought tolerant or native plants, plants/trees grown for consumption, other exceptions.
- No refilling residential swimming pools or outdoor spas more than one foot; no initial filling or residential pools/spas with potable water

- Public use of water from hydrants is prohibited.

Level 5: 40 – 50 Percent Water Shortage
Restrictions in Levels 1 through 4 remain in place. Additional restriction are also in place when the Council declares a forty percent or greater water shortage:

- Filling of any swimming pool, fountain or spa is prohibited.
- Leaks, broken water pipes, irrigation systems, and faucets must have repairs initiated be fixed within 48 hours. Repairs must be completed as soon as practical.

Level 6: Greater than 50 Percent Water Shortage
Restrictions in all previous levels are enforced. The following restrictions and prohibitions would be recommended by Council:

- No landscape irrigation allowed.
- Watering of public benefit facilities and recreational landscape is subject to restriction.
- Customers must repair leaks within 24 hours of notification.
- Enforceable mandatory water budget program.

Retailer Emergency Response Plan

Following is information about SJMWS' emergency response planning. Valley Water and SFPUC have undertaken their own emergency planning efforts, which can be found in their respective UWMP and WSCP.

Catastrophic Supply Interruption

A water supplier must prepare for a catastrophic interruption of water supplies. A catastrophic interruption constitutes a proclamation of a water shortage and could be any natural or man-made event. A catastrophic supply interruption can occur when the City loses one or more of its main water supplies. The likelihood of experiencing a simultaneous loss of more than one supply is low. For example, local power outages may limit use of groundwater, but may not affect delivery of supplies purchased from wholesalers.

If the available supply is insufficient to meet the demand and water quality requirements, an emergency notification will be sent to all water customers to inform them of the condition. The message will include the expected duration of the condition, and restrictions on water use for the duration of the condition. SJMWS has developed an Emergency Response Plan which will be implemented as necessary.

Power Outage

SJMWS's facilities have been designed to provide adequate supplies of water during normal and emergency operations. Reservoirs and emergency backup generators have been placed at elevations and locations which will maintain supplies to customers during power failures. SJMWS staff is on duty 24 hours a day to respond to emergency situations, following the Emergency Response Plan where necessary. SJMWS's facilities are designed such that water stored in reservoirs at the higher elevations and pressure zones may be drawn down to the lower pressure zones for emergency use.

The City can continue to supply treated water from the wholesalers to its distribution system in the event of a power outage. Some of the City areas (e.g., Edenvale and Coyote Valley) rely on groundwater supplies. Depending on the expected length of power outage, the City will evaluate the amount of storage available, the amount of available supplies, and the projected demand to determine whether existing demands can be met while the outage persists. If not, the City will contact some of the customers (e.g., irrigation water users) to request that non-essential water use be curtailed until the outage is addressed. As most power outages tend to be localized, the City can use portable backup generators to provide power to supply sources where necessary, or can request mutual aid from adjacent water agencies for additional supply. Emergency connections are maintained with adjacent water utilities to provide limited supplies in the event of an emergency. Connections to San Jose Water Company are maintained in the Evergreen service area. Connections to the City of Santa Clara are maintained in the North San José/Alviso service area.

Seismic Risk Assessment and Mitigation Plan

Earthquakes present the greatest threat to the ability to supply water to customers. An earthquake can cause various kinds of failure that are structural or mechanical, such as rupture of a pipeline in the distribution system or damage to a water storage facility. The City will assess the condition of the water distribution system and arrange to provide emergency water where needed (e.g., use of groundwater supplies in the event of non-availability of wholesale water supplies or vice versa) in accordance with its Emergency Response Plan and in coordination with the City's Emergency Operations Center, where activated. Santa Clara County's Local Hazard Mitigation Plan will also be consulted and references where applicable (https://emergencymanagement.sccgov.org/partners).

Distribution system integrity and damage assessment reports will be prepared. SJMWS will coordinate with the City's Fire Department and Emergency Operations Center to identify immediate water and/or firefighting needs. To the greatest extent possible, alternate water supply will be made available to customers in affected regions. Water can be pumped from one location and delivered to central areas for distribution by container if the distribution system has failed or is contaminated.

In an event of health hazard of the water supply and distribution system, the City will notify its customers and make arrangements to conduct tests to update the community on the status of its water supply to ensure that essential water needs are met.

Communication Protocols

In the event of water shortage, SJWMS provides additional resources to ensure the timely dissemination of information to customers. The outreach may include social media posts, newspaper/digital advertisements, press releases, radio spots, television coverage, and blog posts. Information will be translated into multiple languages including Spanish and Vietnamese. SJMWS can utilize the WaterSmart "Group Messenger" software to communicate to over 9,000 customers via email.

For non-time sensitive communications, SJMWS may partner with community groups to promote conservation and distribute message. For example, in the past the City has partnered with the San José Earthquakes professional soccer team to promote water conservation at home games. The City would also coordinate and collaborate with water wholesalers and other local water retailers to distribute consistent messaging throughout the County and Bay Area. The City could also utilize on-bill messages or inserts to distribute messages directly to customers during the course of normal bimonthly billing.

SJWMS provides single-family residential accounts with WaterSmart Home Water Reports. WaterSmart allows SJWMS staff to interact with customers via a digital platform, which includes water conservation guidance, automated alerts, and group messaging.

Table 8-4 shows the City's communication protocols by water shortage level. Additional or revised communication protocols may be established when Council adopts a resolution declaring a specific water shortage level.

Table 8-4. Communication Protocols by Shortage Level	
Water Shortage Level	Communication Protocols
1	• Continue messaging consistent with the "Conservation is a Way of Life" initiative. • Enforce San José Municipal Code Chapter 15.10. • The City Council may, by resolution, declare a state of water shortage whenever it finds that water shortages are expected. • Direct contact (via telephone or email) with local media about conditions. • Notification to stakeholders, elected officials, and other decision-makers regarding water shortage conditions, projections, actions to be taken, demand reduction goals, and implementation.
2	• Continue messaging consistent with the "Conservation is a Way of Life" initiative. • Communicate new restrictions to public. • Enforce San José Municipal Code Chapter 15.10. • SJMWS will monitor water production data monthly. • The City Council may, by resolution, declare a state of water shortage whenever it finds that water shortages are expected. • Direct contact (via telephone or email) with local media about conditions. • Notification to stakeholders, elected officials, and other decision-makers regarding water shortage conditions, projections, actions to be taken, demand reduction goals, and implementation.
3	• Continue messaging consistent with the "Conservation is a Way of Life" initiative. • Communicate new restrictions to public. • Enforce San José Municipal Code Chapter 15.10. • SJMWS will monitor water production data weekly or monthly. • The City Council may, by resolution, declare a state of water shortage whenever it finds that water shortages are expected. • Direct contact (via telephone or email) with local media about conditions. • Notification to stakeholders, elected officials, and other decision-makers regarding water shortage conditions, projections, actions to be taken, demand reduction goals, and implementation.
4	• Continue messaging consistent with the "Conservation is a Way of Life" initiative. • Communicate new restrictions to public. • Enforce San José Municipal Code Chapter 15.10. • SJMWS will monitor water production data daily to weekly where possible, and may communicate data to the Director of Environmental Services and/or City Council. • The City Council may, by resolution, declare a state of water shortage whenever it finds that water shortages are expected.

Table 8-4. Communication Protocols by Shortage Level	
Water Shortage Level	Communication Protocols
	• Direct contact (via telephone or email) with local media about conditions. • Notification to stakeholders, elected officials, and other decision-makers regarding water shortage conditions, projections, actions to be taken, demand reduction goals, and implementation.
5	• Continue messaging consistent with the "Conservation is a Way of Life" initiative. • Communicate new restrictions to public. • Enforce San José Municipal Code Chapter 15.10. • SJMWS will monitor water production data daily to weekly where possible, and may communicate data to the Director of Environmental Services and/or City Council. • The City Council may, by resolution, declare a state of water shortage whenever it finds that water shortages are expected. • Direct contact (via telephone or email) with local media about conditions. • Notification to stakeholders, elected officials, and other decision-makers regarding water shortage conditions, projections, actions to be taken, demand reduction goals, and implementation.
6	• Continue messaging consistent with the "Conservation is a Way of Life" initiative. • Communicate new restrictions to public. • Enforce San José Municipal Code Chapter15.10. • SJMWS will monitor water production data daily to weekly where possible, and may communicate data to the Director of Environmental Services and/or City Council. • The City Council may, by resolution, declare a state of water shortage whenever it finds that water shortages are expected. • Direct contact (via telephone or email) with local media about conditions • Notification to stakeholders, elected officials, and other decision-makers regarding water shortage conditions, projections, actions to be taken, demand reduction goals, and implementation.

Compliance and Enforcement

Demand Reduction through Public Outreach

Public messaging is critical to WSCP implementation. For example, drought-specific messaging and outreach in 2015 helped Santa Clara County residents and businesses reduce water use by 35 percent during the peak of the drought (compared to 2013 water use). SJMWS's water conservation outreach actions and plans are discussed in more detail in Section 9 of the UWMP.

Table 8-5 summarizes the methods that can be used by the City to enforce water use restrictions associated with a declared water shortage through public outreach.

Table 8-5. Consumption Reduction Methods Through Outreach

Level	Consumption Reduction Methods by Water Supplier	Additional Explanation or Reference
All Levels	Expand Public Information Campaign	Public education/information programs
All Levels	Offer Water Use Surveys	Ongoing
All Levels	Provide Rebates on Plumbing Fixtures and Devices	Ongoing
All Levels	Provide Rebates for Landscape Irrigation Efficiency	Ongoing
All Levels	Provide Rebates for Turf Replacement	Ongoing
All Levels	Increase Water Waste Patrols	Ongoing
All Levels	WaterSmart Residential Home Water Reports	Ongoing
All Levels	Waterfluence Commercial Irrigation Water Use Software	Ongoing

Penalties, Charges, Other Enforcement of Prohibitions

The City will enforce mandatory reduction programs as necessary to decrease consumption during a water shortage. San José Municipal Code Section 1.08.010 provides that the failure to comply with mandatory requirements of the Code or any other City ordinance can be criminally charged as a misdemeanor, unless excluded as an infraction. All mandatory conservation requirements can be misdemeanors, punishable by a fine of up to one thousand dollars ($1,000.00) or up to six months in County jail, or both. In addition, the City has the ability to issue administrative citations for violations. Administrative citations for violating mandatory conservation requirements carry penalties as adopted by Council Resolution. In 2020, penalties for administrative citations issued for violating water use restrictions range from one hundred sixty dollars ($160.00) to five hundred dollars ($500.00), per Council Resolution No. 79844 (https://records.sanjoseca.gov/Resolutions/RES79844.pdf). When mandatory water use restrictions are implemented during a time of water shortage, the City will evaluate enforcement priorities and strategies, including penalties or fines, and citations for issuing warnings for violating a prohibition, followed by

increasing levels of fines for repeated offenses and escalation of enforcement. The City Council may adopt additional penalties or charges as deemed appropriate.

Water use restrictions for Levels 1 through 5 are contained within the San José Municipal Code Chapter 15.10. Water use restrictions for Level 6 would be determined based on the specific water shortage amount, and would be adopted by Council. SJMWS customers are required to comply with any measures the Council adopts, including those described **Table 8-2**. Customers that do not comply with adopted water use restrictions are subject to the penalties and enforcement described above.

Any person may submit a written request for exception to the potable water use restrictions on a form provided by the City. On this form, the applicant must describe their reasoning and why no other water source is available. An exemption review fee must be submitted, and an exception is not guaranteed.

Legal Authorities

In the event of a water shortage, SJMWS shall declare a water shortage emergency in accordance with Water Code Chapter 3 Division 1. In the event of a water shortage, the City can proclaim a local emergency, as defined in the California Government Code, California Emergency Services Act (Article 2, Section 8558).

The San José Municipal Code exercises this authority and states that "The City Council may, by resolution, declare a state of water shortage whenever it finds that water supplies are expected to be inadequate to meet at least ninety percent of projected water demand, or whenever a minimum conservation level of ten percent or more has been established by the Santa Clara Valley Water District." This process was implemented during the most recent drought. The City Council adopted a resolution declaring a 30 percent water shortage in April 2015. This allowed the City to implement the WSCP to reduce water use by 30 percent. Another resolution declaring a 20 percent water shortage was adopted by the City in June 2016 to return to a lower WSCP stage based on improving water supply conditions. In March 2017, the City Council adopted a resolution that declared an end to the water shortage.

Financial Consequences of WSCP

During periods of water shortage, SJMWS revenue may be reduced when the WSCP is implemented due to decreased water demand leading to decreased revenues. The WSCP calls for an increase in water use reduction programs and efforts, such as expanded public information campaigns, water use surveys, and water waste patrols, which may result in increased costs. Additionally, SFPUC's current retail water rates have a provision for a "drought surcharge" that automatically increases adopted rates in the event of a declared water shortage, so water purchase costs may also increase.

The City's annual rate setting process proactively accounts for projected revenue decreases and increased spending during times of water shortage as wells as revenue decreases resulting from past conservation. The costs associated with wholesale water purchases and operating the distribution system are variable in nature. Consequently, any increases in the water rate schedule due to a water shortage will be determined during an actual water shortage. Any required increase in the rate schedule will depend on operational expenditures, water revenue, and potential use of budget reserves.

During a water shortage, SJMWS staff will evaluate the situation and identify whether revenue shortfalls are anticipated based on the situation's circumstances, including factors such as budget status, drought level, changes in wholesale water rates or surcharges, and projected water sales. Any proposed revision to adopted rate schedules would need to be submitted for approval by the City Council after completion of any public noticing requirements. SJMWS maintains a rate stabilization reserve, which could be used to offset or minimize rate and revenue impacts.

Monitoring and Reporting

SJMWS monitors customer water usage with bi-monthly meter reading and provides monthly regulatory reports. Water use, as well as water production will continue to be monitored and reported during a water shortage. During the 1987-1992 drought, SJMWS compiled water production data daily. All sources were monitored, and a monthly report was submitted to SJMWS Deputy Director and Valley Water. This process was found effective in keeping SJMWS within its water allotment.

In the event of a Level 2 or 3 water shortage, SJMWS would monitor water production at least monthly, and weekly where possible. During a Level 4, 5 or 6 water shortage, water production figures would be monitored daily or weekly where possible and reported to the SJMWS Deputy Director, and monthly reports may be communicated to the Director of Environmental Services Department and/or the City Council. The plan to be followed during a specific shortage period would be confirmed at the time of Council's water shortage declaration.

At each declared water shortage level, customer outreach efforts will increase, specifically targeting high users.

WSCP Refinement Procedures

The WSCP can be refined as needed, both during a water shortage or in preparation of a future crisis. The Annual Water Supply and Demand Assessment provides SJMWS an opportunity to examine the previous year's water usage and evaluate the effectiveness of demand reduction measures. If water use monitoring shows that the current WSCP is insufficient to meet its demand reduction goals, the restrictions may be adjusted. Refinement may require an update to Chapter 15.10 of the San José Municipal Code and approval by the City Council.

Plan Adoption, Submittal, and Availability

The last WSCP adoption coincided with the 2015 UWMP adoption. In accordance with Water Code Section 10642 and Government Code Section 6066, a public hearing must be held before the adoption of these plan updates. The draft plan was available online through the SJMWS website prior to its adoption, and the final version was posted and distributed within 30 days. Any future updates to the WSCP shall be approved by City Council.