



SAN JOSE WATER



2020 Urban Water Management Plan

San Jose Water Company

2020 Urban Water Management Plan

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Draft Report

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- B. Demand Projection Calculations
- C. Water Loss Audit Worksheets
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Abbreviations and Acronyms

AB	Assembly Bill
ABAG	Association of Bay Area Governments
AF	Acre-foot
AMI	Automated Meter Infrastructure
AWWA	American Water Works Association
BARDP	Bay Area Regional Desalination Project
BARR	Bay Area Regional Reliability
BMP	Best Management Practices
CalWEP	California Water Efficiency Partnership
CII	Commercial, Industrial, and Institutional
CPUC	California Public Utilities Commission
CUWCC	California Urban Water Conservation Council
CVP	Central Valley Project
CWC	California Water Code
DCP	Delta Conveyance Project
DDW	California Division of Drinking Water
DMA	District Metered Areas
DMM	Demand Management Measures
DWR	California Department of Water Resources
EAMP	Enterprise Asset Management Plan
GIS	Geographic Information System
gpcd	Gallons per Capita per Day
GWAMP	Groundwater Well Asset Management Plan
HCD	California Department of Housing and Community Development
IPR	Indirect Potable Reuse
kWh	Kilowatt Hour
MAP	Monitoring and Assessment Program
MCL	Maximum Contaminant Limit
MG	Million Gallons
MGD	Million Gallons per Day
MOU	Memorandum of Understanding
NPDES	National Pollutant Discharge Elimination System
PFAS	Per- and Polyfluoroalkyl Substances
PWS	Public Water System
RHNA	Regional Housing Need Allocation
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SBWR	South Bay Water Recycling
SGMA	Sustainable Groundwater Management Act
SJ/SC RWF	San José/Santa Clara Regional Wastewater Facility

SJW	San Jose Water Company
SWP	State Water Project
SWRCB	California State Water Resources Control Board
USEPA	United States Environmental Protection Agency
UWMP	Urban Water Management Plan
WEAP	Water Evaluation And Planning
WSCP	Water Shortage Contingency Plan
WSMP	Water Supply Master Plan
WTP	Water Treatment Plant

Chapter 1

Introduction and Overview

This chapter provides background on San Jose Water Company (SJW), discusses the importance and uses of the 2020 Urban Water Management Plan (UWMP), identifies changes since the 2015 UWMP, presents the organization of the UWMP, describes the relationship of the UWMP to other planning efforts, and demonstrates consistency with the State of California's Delta Plan.

Founded in 1866, SJW is one of the largest investor-owned utilities in the United States, serving approximately one million residents in Santa Clara County through about 231,000 service connections. SJW's service area includes most of the cities of San Jose and Cupertino, the entire cities of Campbell, Monte Sereno, Saratoga, the Town of Los Gatos, and parts of unincorporated Santa Clara County. As an investor-owned utility, SJW's rates and operations are regulated by the California Public Utilities Commission (CPUC).

The California Urban Water Management Planning Act of 1983 requires urban water suppliers providing water for municipal purposes to more than 3,000 customers or serving more than 3,000 acre-feet annually, to adopt an UWMP every five years. An UWMP serves as a long-term water resource planning document that provides an understanding of a water supplier's past, current, and future water conditions and management. UWMPs are important for ensuring that adequate water supplies are available to meet existing and future water needs. The UWMP integrates many elements, including land use changes and population growth, historical and projected water demands, water supply reliability, climate change, water shortage contingency planning, and demand management programs. UWMPs prepared throughout California provide the state governing bodies with a picture of statewide water reliability, support coordination between water suppliers and other agencies, and are relevant for other local, regional, and statewide water planning efforts.

1.1 Background and Purpose

Water planning is an essential function of water suppliers and is critical as California grapples with threats of drought conditions and expected long-term climate changes. The 2020 SJW UWMP serves two primary purposes: (1) as a master plan for water supply and resources management, and (2) a reporting document for compliance with the California Water Code (CWC) and California Urban Water Management Planning Act of 1983 (Act).

The Act was originally developed due to concerns regarding potential water supply shortages throughout California and focused on water supply reliability and water use efficiency. Since its original passage, there have been several amendments in response to the state's water shortages, droughts, and other factors. A significant amendment to the Act was made in 2009, following the drought of 2007-2009 and the governor's call for a statewide 20% reduction in urban water use by year 2020. This was the California Water Conservation Act of 2009, also known as Senate Bill (SB) x7-7. SB x7-7 required agencies to establish water use targets for 2015 and 2020 that would result in statewide savings of 20% by 2020 using one of

four methodologies to calculate per capita water use. SJW's 2020 UWMP addresses the requirements of SB x7-7 and demonstrates that SJW has met its 2020 water use target.

Another significant amendment to the Act was made in 2018, with SB 606 and Assembly Bill 1668. Following the most recent 2012-2016 drought, the governor issued Executive Order B-37-16: Making Water Conservation a California Way of Life, to establish longer-term water conservation measures for California. The executive order calls for measures to use water more wisely, eliminate water waste, strengthen local drought resistance, and improve agricultural water use efficiency and drought planning. Subsequently, California passed SB 606 and AB 1668 to implement the Executive Order B-37-16 goals. Among other provisions, SB 606 and AB 1668 require the State Water Resources Control Board (SWRCB), in coordination with the Department of Water Resources (DWR), to establish long-term urban water use efficiency standards by June 30, 2022. Those standards will include components for indoor residential use, outdoor residential use, water losses, and other uses. In addition, water suppliers will be required to calculate and comply with their water use objectives, which will be based on the water use standards developed by the State. SB 606 and AB 1668 also require new five-year drought risk assessments and additional requirements for water shortage contingency planning. SJW's 2020 UWMP address the SB 606 and AB 1668 requirements, as well as other requirements in the CWC related to the UWMP (Sections 10610-10657 and 10608).

1.2 New Requirements for 2020 UWMPs

Additional requirements have been passed by the California Legislature for 2020 UWMPs, updating the 2015 UWMP guidance. Significant changes include the following:

- **Five Consecutive Dry-Year Water Reliability Assessment** – The California Legislature modified the dry-year water reliability planning from a “multiyear” period to a “drought lasting five consecutive water years” designation.
- **Drought Risk Assessment** – The California Legislature created a new UWMP requirement for drought planning called the Drought Risk Assessment (DRA), which requires water suppliers to assess water supply reliability over a five-year period from 2021 to 2025.
- **Seismic Risk** – The CWC now requires water suppliers to specifically address seismic risk to various water system facilities and to have a mitigation plan.
- **Energy Use Information** – The CWC now requires suppliers to include readily obtainable information on estimated amounts of energy for their water supply extraction, treatment, distribution, storage, conveyance, and other water uses.
- **Water Loss Reporting for Five Years** – The CWC added the requirement to include the past five years of water loss audit reports as part of this UWMP.
- **Water Shortage Contingency Plan** – The California Legislature modified the UWMP laws to require a Water Shortage Contingency Plan (WSCP) with new prescriptive elements.
- **Groundwater Supplies Coordination** – In 2014, the California Legislature enacted the Sustainable Groundwater Management Act (SGMA) to address groundwater conditions. The CWC now requires suppliers' 2020 UWMPs to be consistent with Groundwater Sustainability Plans, in areas where those plans have been completed by Groundwater Sustainability Agencies.

- **Lay Description** – The California Legislature included a new statutory requirement for suppliers to include a lay description of the fundamental determinations of the UWMP, especially regarding water service reliability, challenges ahead, and strategies for managing reliability risks.

1.3 Plan Organization

This report is organized in accordance with the recommended format provided by the DWR UWMP Guidebook 2020. The UWMP contains ten chapters, followed by appendices that provide supporting documentation for the information presented in the report. Each chapter begins with an overview of the chapter's contents and a lay description summarizing key information from the chapter. Tables throughout this UWMP are standardized submittal tables provided by DWR to be completed by water suppliers.

- **Chapter 1 – Introduction and Overview**
 - Provides a discussion on fundamentals of the UWMP
- **Chapter 2 – Plan Preparation**
 - Provides information on the processes used for developing the UWMP, including efforts in coordination and outreach
- **Chapter 3 – System Description**
 - Includes a description of SJW's service area and system, a map of the service area, and an overview of SJW's organizational structure and history
- **Chapter 4 – System Water Use**
 - Describes and quantifies current and projected water uses within SJW's service area
- **Chapter 5 – Senate Bill x7-7 Baselines, Targets, and 2020 Compliance**
 - Describes SJW's compliance with the 2020 per-capita water conservation mandate
- **Chapter 6 – System Supplies**
 - Describes and quantifies current and projected potable and non-potable water supplies
- **Chapter 7 – Water Supply Reliability and Drought Risk Assessment**
 - Describes water service reliability through at least a 20-year planning horizon under normal, single dry year, and five consecutive dry year conditions
- **Chapter 8 – Water Shortage Contingency Planning**
 - Provides a structured plan for dealing with water shortage, incorporating prescriptive information and standardized action levels, along with implementation actions in the event of a catastrophic supply interruption
- **Chapter 9 – Demand Management Measures**
 - Communicates efforts to promote conservation and reduce demand on water supplies
- **Chapter 10 – Plan Adoption, Submittal, and Implementation**
 - Describes and documents steps taken to make the UWMP publicly available, as well as steps taken to adopt and submit the UWMP in accordance with the CWC.

1.4 Relation to Other Planning Efforts

Local planning and preparation remains the fundamental focus of the 2020 UWMP, as UWMPs are prepared by suppliers that have the in-depth knowledge of their water systems. However, preparation of

the UWMP requires coordination with other planning agencies. Information in this 2020 UWMP reflects SJW's coordination with Valley Water, South Bay Water Recycling, the city and county jurisdictions in which SJW serves water, and the Association of Bay Area Governments (ABAG). To ensure a holistic planning process, SJW's UWMP integrates relevant information from other plans, including Water Master Plans, Recycled Water Master Plans, city and county General Plans, Groundwater Management Plans, and local and regional Hazard Mitigation Plans.

As SJW's water wholesaler, Valley Water provides or manages the majority of SJW's water supplies. Thus, certain sections of this UWMP were prepared using information from Valley Water's draft 2020 UWMP that was provided to SJW. Additional details can be found in Valley Water's 2020 UWMP.

1.5 Grant or Loan Eligibility

In order for an urban water supplier to be eligible for any water management grant or loan administered by DWR, the agency must have a current UWMP on file that has been determined by DWR to address the requirements of the CWC. A current UWMP must also be maintained by the water supplier throughout the term of any grant or loan administered by DWR. SJW's 2020 UWMP has been prepared in order to meet eligibility requirements for grants and loans administered by the State and/or DWR.

1.6 Demonstration of Consistency with the Delta Plan

For water suppliers that anticipate participating in, or receiving water from, a proposed project (covered action) under the Delta Plan, DWR recommends demonstrating consistency with the Delta Plan's policy to reduce reliance on the Sacramento-San Joaquin Delta (Delta). Covered actions include, but are not limited to, projects such as a multi-year water transfer, conveyance facility, or new diversion that involves transferring water through, exporting water from, or using water in the Delta, per California Code of Regulations, Title 23, Section 5003.

Through SJW's water wholesaler, Valley Water, SJW receives imported water supplies from the Delta. Additional information on Valley Water's, and by extension, SJW's, reduced reliance on the Delta can be found in Section 6.10 and Appendix A. Calculations for the reduced reliance on the Delta in Appendix A were prepared using optional submittal tables from DWR.

Chapter 2

Plan Preparation

This chapter describes the preparation of SJW’s 2020 UWMP, including coordination with other relevant agencies, and identifies standard reporting periods and units used throughout this UWMP.

This UWMP covers both of the water systems that SJW manages – the SJW system and the City of Cupertino Municipal Water System, which SJW operates, maintains, and improves through a lease agreement. SJW is a retail water agency, with Valley Water and South Bay Water Recycling (SBWR) as its water wholesalers. Data in this UWMP is reported on a calendar year basis and uses million gallons (MG) as the unit of measurement. Valley Water and the cities and counties in which SJW serves water were notified of SJW’s UWMP preparation and were encouraged to contact SJW’s UWMP preparers if they had any questions or comments about the UWMP or process. SJW also provided its wholesalers with SJW’s projected water demand over the next 25 years and contacted cities within the service area as well as Santa Clara County to identify appropriate land use information to be used in this UWMP.

2.1 Basis for Preparing a Plan

In accordance with CWC Section 10617, urban water suppliers with 3,000 or more service connections or supplying 3,000 or more acre-feet (AF) of water per year are required to prepare an UWMP. CWC Section 10621 states each urban water supplier shall update its UWMP every five years and submit its 2020 UWMP to DWR by July 1, 2021. SJW manages two Public Water Systems (PWSs) as shown in Table 2-1 and is beyond the service connection and acre-feet reporting threshold and therefore has prepared this UWMP.

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 (MG)
4310011	San Jose Water Company	226,296	39,530
4310018	City of Cupertino	4,673	860
TOTAL		230,969	40,390
NOTES: Includes potable, raw, and recycled water demands. Number of municipal connections in 2020 is as of December 31, 2020.			

2.2 Regional Planning

A group of water suppliers agreeing among themselves to plan, comply, and report as a region on the requirements of SB x7-7, is referred to as a Regional Alliance. Being a member of a Regional Alliance is not required and does not take the place of submitting an UWMP or Regional Urban Water Management Plan (RUWMP). While this 2020 UWMP was developed in close coordination with Valley Water, and SJW does

actively participate in all water supply and UWMP retailer meetings facilitated by Valley Water, SJW's 2020 UWMP was developed as an individual UWMP, as shown in Table 2-2.

Table 2-2: Plan Identification		
Select Only One	Type of Plan	Name of RUWMP or Regional Alliance <i>if applicable</i>
☒	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)	

2.3 Calendar Year and Units of Measure

SJW is a retail water agency and has elected to report data on a calendar year basis using million gallons (MG) as its unit of measurement for DWR standardized tables, as shown in Table 2-3.

Table 2-3: Supplier Identification	
Type of Supplier	
☐	Supplier is a wholesaler
☒	Supplier is a retailer
Fiscal or Calendar Year	
☒	UWMP Tables are in calendar years
☐	UWMP Tables are in fiscal years
Units of Measure Used in UWMP	
Unit	MG

2.4 Coordination and Outreach

Coordination and outreach are key elements to developing a useful and accurate UWMP. To this end, and in accordance with CWC Section 10621, notices of UWMP preparation were sent to Valley Water, Santa Clara County, and all cities served by SJW on November 9, 2020. Notification was provided more than 60 days prior to the public hearing for the UWMP. In addition, notified agencies were encouraged to contact SJW's UWMP preparers if they had any questions or comments about the UWMP or process. Additional details on the notice of UWMP preparation and public hearing can be found in Chapter 10.

Valley Water is the wholesale water supplier in Santa Clara County and regularly facilitates water supply and conservation subcommittee meetings for all 13 major retailers in Santa Clara County, the cities in Santa Clara County, County of Santa Clara, San Francisco Public Utilities Commission, and the Bay Area Water Supply and Conservation Agency. SJW staff regularly attends these meetings to discuss current and projected water supplies and demands. The development of this UWMP was a collaborative effort between, SJW, Valley Water, and other water and wastewater stakeholders in Santa Clara County. In accordance with CWC Section 10631, SJW has informed Valley Water and SBWR of its projected water demand over the next 25 years, as shown in Table 2-4. SJW also contacted representatives from each of the cities within the service area as well as Santa Clara County to identify appropriate land use information.

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 CWC 10631.	
Wholesale Water Supplier Name	
Valley Water	
South Bay Water Recycling	

Chapter 3

System Description

This chapter describes SJW and presents an overview of the system, sources of supply, climate, population, demographics, socioeconomics, and land uses within the service area.

In addition to its own water system, SJW also operates, maintains, and improves the City of Cupertino Municipal Water System through a lease agreement. SJW also serves water to, but does not manage, a number of small water systems. All water systems that SJW operates or serves are included in the analyses that were conducted as part of this UWMP. Population in SJW's service area is anticipated to increase from 997,817 in 2020 to 1,335,044 in 2045. Most of the service area is built out and most new developments are occurring within urbanized areas. Single-family residential currently comprises the most common land use in the service area. The service area experiences a Mediterranean climate with cool, wet winters and warm, dry summers. Climate change is anticipated to result in warming temperatures, shrinking snowpack, increasing weather extremes, and prolonged droughts.

3.1 General Description

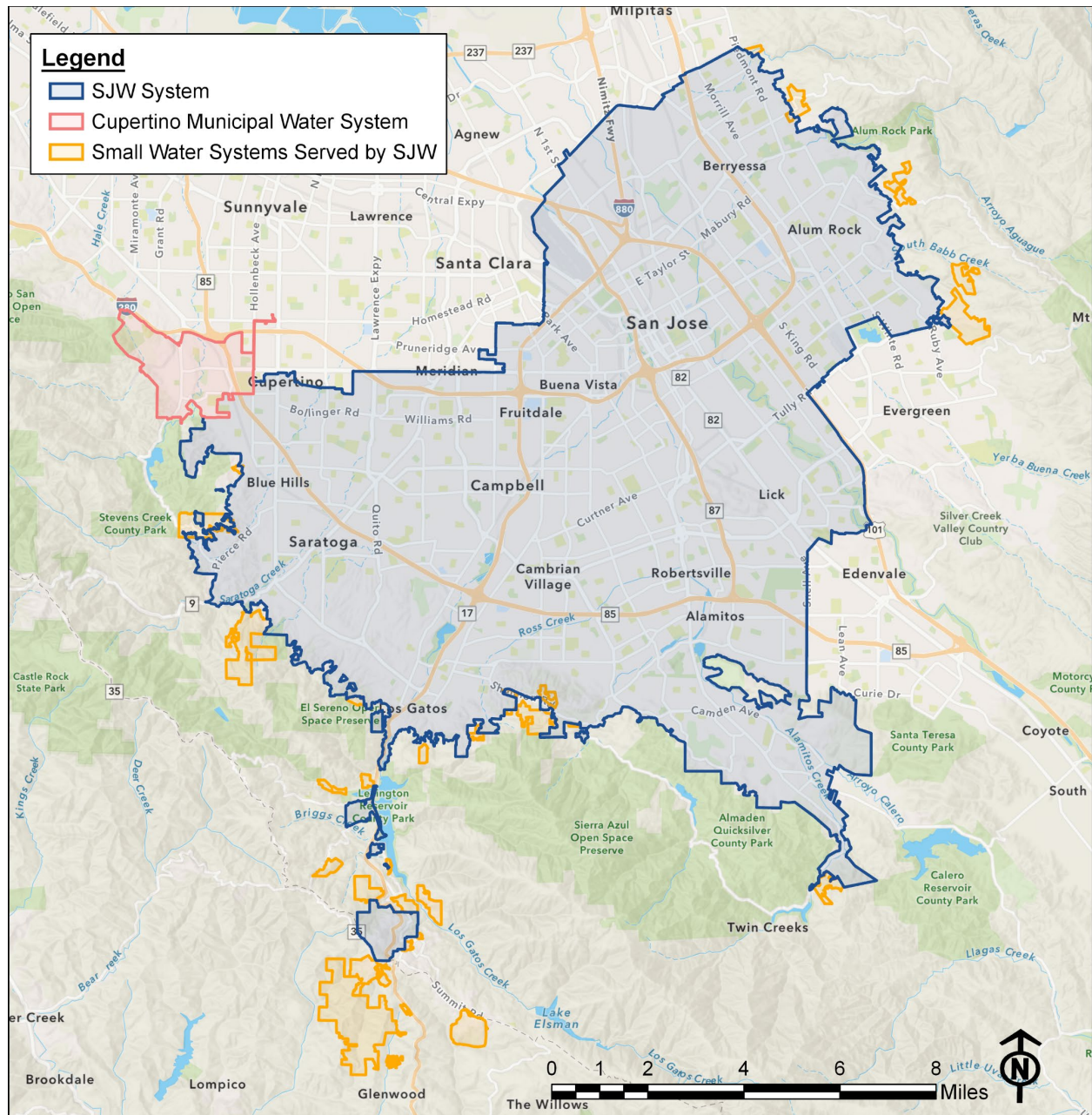
Founded in 1866, SJW is one of the largest investor-owned utilities in the United States, providing high quality, life-sustaining water to approximately one million residents in Santa Clara County through about 231,000 service connections. As an investor-owned utility, SJW is regulated by the CPUC. The CPUC is responsible for regulating SJW's rates, service, water quality, and operational safety.

In addition to its own water system (PWS number 4310011), SJW also operates, maintains, and improves the Cupertino Municipal Water System (PWS number 4310018) through a lease agreement. Combined, the SJW and City of Cupertino water systems consist of approximately 2,450 miles of pipelines, 100 pressure zones, 225 booster pumps, 92 wells, 110 tanks and reservoirs, 11 raw water intakes, 5 raw water impoundments, 3 water treatment plants, and tens of thousands of other assets including valves, meters, service lines, fire hydrants, and chemical systems.

Because both systems are operated by SJW, and are contiguous and connected through zone valves and interties, the two systems are reported together in this UWMP. All analyses that were conducted as part of this UWMP (population projections, water demand projections, water supply reliability, water shortage contingency planning, demand management measures) are applicable to both systems.

SJW also serves water to, but does not manage, a number of small water systems. Small water systems receive a master water service from SJW but are responsible for distributing the water within their respective systems. Their population and demands are accounted for and reported in this UWMP.

Including the other water systems that it operates or serves, SJW's service area spans about 145 square miles, including most of the cities of San Jose and Cupertino, the entire cities of Campbell, Monte Sereno, Saratoga, the Town of Los Gatos, and parts of unincorporated Santa Clara County, as shown in Figure 3-1. Most of the service area is built out and new development is primarily urban infill projects.



3.2 Sources of Supply

SJW has three sources of potable water supply: purchased, or imported, treated surface water from Valley Water, groundwater from the Santa Clara Subbasin, and surface water from local watersheds. A fourth and growing source of supply is non-potable recycled water. Figure 3-2 shows a breakdown of these sources of supply in 2020. The amount of supply from each source varies year to year, depending on hydrologic conditions, groundwater levels, water deliveries from Valley Water, and demand for recycled water. Additional details on sources of supply can be found in Chapter 6.

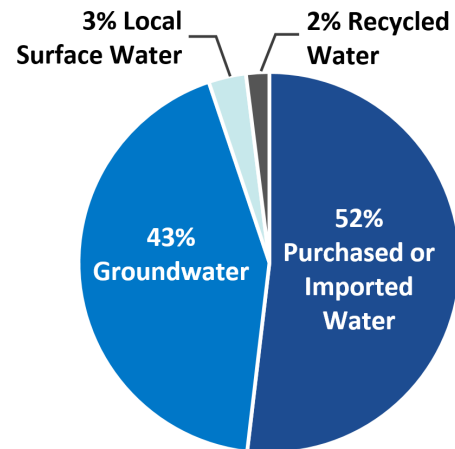


Figure 3-2. SJW Sources of Supply in 2020

SJW is under contract with Valley Water for the purchase of just over 50% of the needed water supply. This water originates from several sources including Valley Water’s local reservoirs, the State Water Project, and the federally funded Central Valley Project San Felipe Division before it is treated at one of three Valley Water operated treatment plants and then piped into SJW’s distribution system at various turnout locations.

On average, groundwater from the Santa Clara Subbasin accounts for 30% to 40% of SJW’s total water supply. These aquifers are recharged naturally by rainfall and streams and artificially by recharge ponds operated by Valley Water.

SJW also diverts surface water in the local Saratoga Creek and Los Gatos Creek watersheds to one of the three SJW water treatment plants for treatment prior to entering the distribution system. Surface water supplies are highly variable depending on annual rainfall and generally contribute less than 10% of total water supply.

Recycled water use has steadily grown over the years with increased customer demand for recycled water and construction of new recycled water pipelines. As of 2020, recycled water made up 2% of the total water supply.

3.3 Service Area Climate

Santa Clara County experiences a Mediterranean climate with cool, wet winters and warm, dry summers. From 1950-2020, the county received an annual average precipitation total of 23.2 inches. Most precipitation in the region occurs between the months of November and April. Temperature is typically moderate. Maximum monthly average temperatures range from 55.7°F to 83.4°F. Minimum monthly average temperatures range from 37.9°F to 56.6°F. The annual average evapotranspiration rate is 49.6 inches.¹ Summarized temperature and precipitation data is presented in Figure 3-3.

¹ Rainfall and temperature data provided by National Oceanic and Atmospheric Administration. Evapotranspiration data comes from California Irrigation Management Information System (Archived San Jose Station).

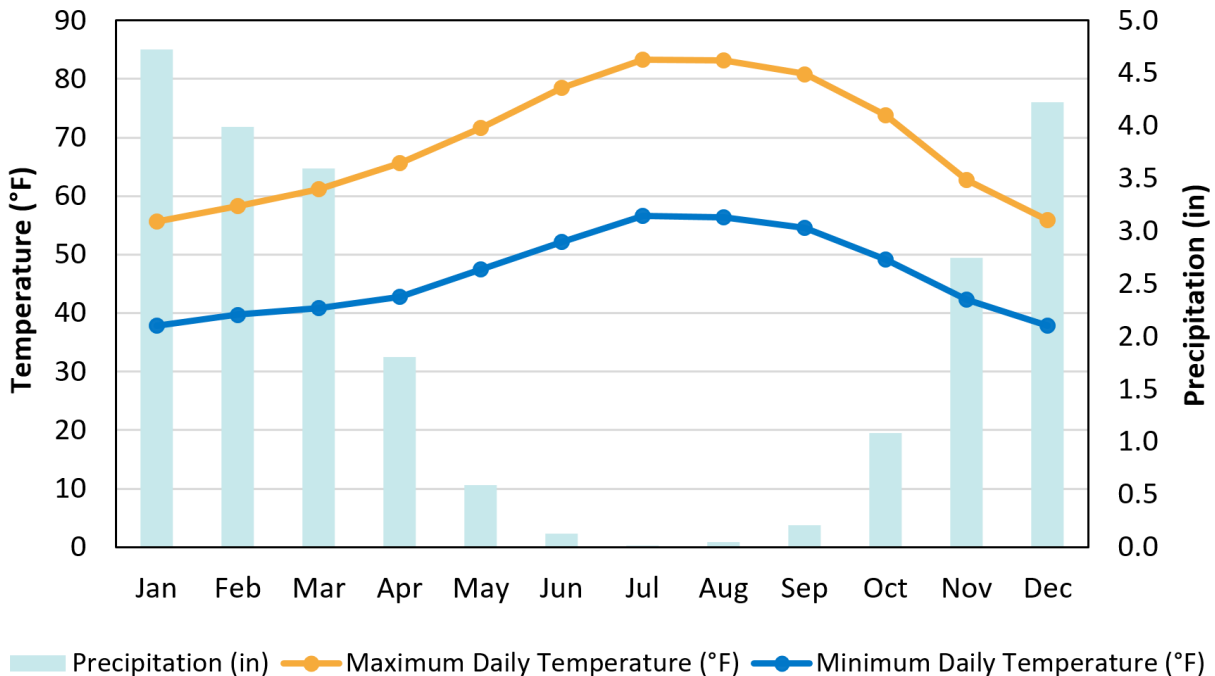


Figure 3-3. Historical Average Monthly Temperature and Precipitation (1950-2020)

3.3.1 Climate Change

Climate change will pose significant challenges to the continued operations of water supply systems. Elevated emissions of greenhouse gases, particularly carbon dioxide, are driving an increase in global average temperature. As a result, water suppliers need to prepare for alterations to natural systems such as the hydrologic cycle and the oceans. Climate change impacts that SJW is likely to face are:

- Higher temperatures: Increased demand for water during hot and dry years, particularly for irrigation.
- Alterations in precipitation patterns: Rising average global temperatures lead to more precipitation falling as rain instead of snow, affecting the availability of water supplies. Extended periods of drought may become more common.
- Increased flooding: Extreme bursts of rainfall increase the potential for large runoff events, causing severe flooding damage to people and infrastructure. Runoff events may also raise the amount of sediment, pollutants, and waste in water supplies. Rising sea levels may impact the reliability of imported water supplies and exacerbate potential flood damage.

Although climate-modeling projections are not consistent, SJW expects to see changes in precipitation patterns, warmer temperatures, and drier conditions. Climate change considerations are noted in various sections of this UWMP as they relate to projected demands, constraints on sources of supply, and water supply reliability.

3.4 Service Area Population and Demographics

3.4.1 Historical Population Count

SJW's 2010 population count is based on 2010 census block geographic information system (GIS) shapefiles provided by the United States Census Bureau, which includes the population count for every census block. Because census blocks have a greater resolution than census tracts (i.e. each census tract is often composed of numerous census blocks, particularly in highly populated areas), they allow for a more precise service area population count around boundaries of SJW's service area. The estimated 2010 population count for SJW's service area was calculated according to the following methodology:

- 1) Download the census block shapefile from the United States Census Bureau website.
- 2) Overlay the census blocks with SJW's service area boundary in ArcGIS software.
- 3) Input the census block shapefile and SJW's service area shapefile into the ArcGIS "Intersect" tool, and perform the "Intersect" analysis.
 - a. This ArcGIS tool will output a new shapefile that only contains population blocks within SJW's service area.
 - b. Census blocks that partially reside within SJW's service area are automatically clipped so that the new shapefile only includes the portion of these census blocks that reside within SJW's service area boundary.
- 4) Manually review clipped census blocks. For each census block, review the number of parcels, aerial photography, and housing information provided in the census block shapefile to determine the percentage of residential properties inside SJW's service area boundary. Apply this percentage to the total census block population to obtain the estimated population within SJW's service area, as demonstrated in Figure 3-4 below.

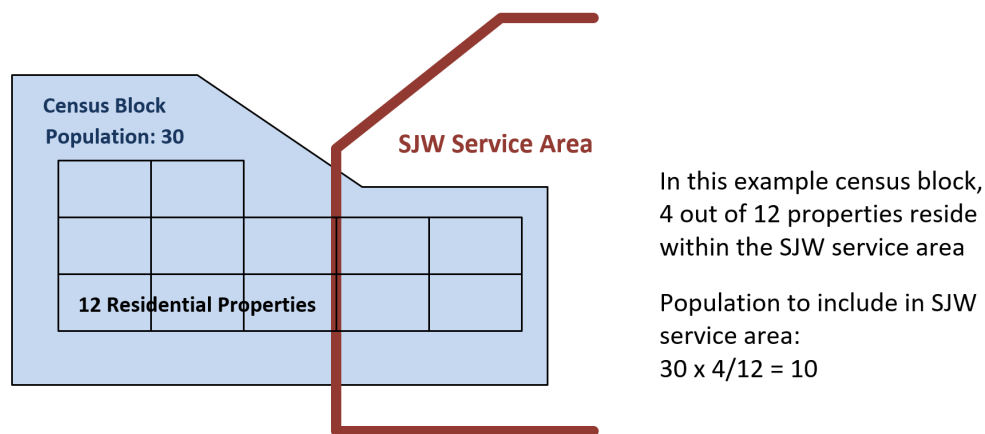


Figure 3-4. Example Showing Manual Review Process of Clipped Census Blocks

- 5) Sum up the population values of all census blocks within SJW's service area for a final population count.

Population data from the latest 2020 Census has not yet been published on the census block level. Once this 2020 population data is publically available, SJW will evaluate using the updated 2020 population counts to revise its future population and water demand projections.

3.4.2 Population Projections for 2020 – 2045

ABAG has developed a Plan Bay Area 2040 report², and companion Plan Bay Area Projections 2040 report³, for the San Francisco Bay Area, which is a series of statistical compilations on demographic, economic, and land use changes in the coming decades. ABAG projects population and job growth rates for Santa Clara County to be higher than the nine-county Bay Area average. Included in Plan Bay Area 2040 are population projections from 2010 to 2040 in five-year increments for each census tract. The projections take into account anticipated economic factors, changing demographic characteristics, expected local policies and infrastructure investment, as well as historic economic behavior. Population projections were only available for census tracts, and not for census blocks. As ABAG population projections were only available to 2040 and in order to align with the longer 25-year planning horizon (2020 to 2045) for the UWMP as recommended by DWR, SJW’s 2045 population was estimated by assuming the same percent growth rate from 2035 to 2040 and from 2040 to 2045. SJW used the ABAG census tract population projections to estimate population growth for all census blocks within SJW’s service area. The percent growth of a given census block was assumed to be equal to the percent growth of the census tract in which it resides, as illustrated in Figure 3-5.

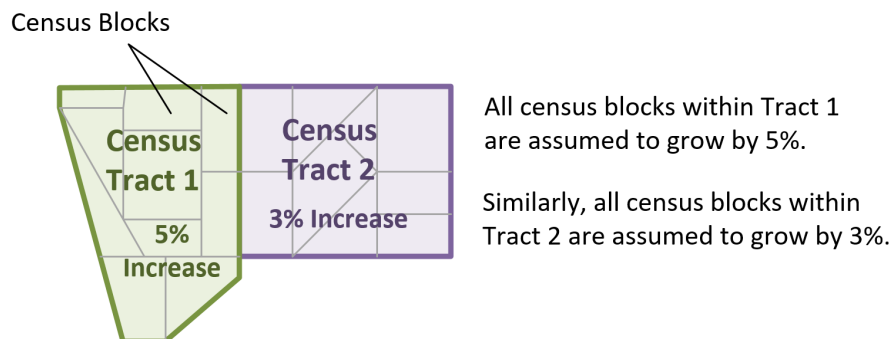


Figure 3-5. Assignment of Percentage Population Change by Census Block

Service area population was calculated for 2020 through 2045 using the methodology described above and presented in five-year increments in Table 3-1.

Table 3-1 Retail: Population - Current and Projected						
Population Served	2020	2025	2030	2035	2040	2045
	997,817	1,069,633	1,127,593	1,191,337	1,261,145	1,335,044
NOTES: Raw water customers not included in population count. These customers are two small water systems that also have their own sources of water supply and only receive supplemental raw water supplies from SJW.						

² ABAG. *Plan Bay Area 2040* (Jul 2017).

³ ABAG. *Play Bay Area Projections 2040 A Companion to Plan Bay Area 2040* (Nov 2018).

SJW’s methodology for obtaining its population estimates was approved via email by the Urban Water Use Efficiency Unit of DWR on March 9, 2021.

3.4.3 Other Social, Economic, and Demographic Factors

SJW serves a diverse population of residents. According to the American Community Survey 2015-2019 5-Year Data Profile for Santa Clara County, the population is 36.3% Asian, 31.5% White, 25.5% Hispanic or Latino, 2.3% Black or African American, 0.3% Native Hawaiian or Other Pacific Islander, 0.2% American Indian or Alaska Native, 0.3% some other race, and 3.6% two or more races. The median household income is \$124,055. The unemployment rate is 4.3%. Additionally, 53% of residents speak a language other than English at home.⁴

3.5 Service Area Land Uses

SJW contacted representatives from each of the cities within the service area as well as Santa Clara County to identify appropriate land use information. Existing land use parcel data was provided by Santa Clara County and sorted into relevant land use categories for water supply management. ABAG’s Plan Bay Area 2040 was used to address planned land use. The report provided useful projections of population growth and changing land use over the next two decades. General plans from each of the cities were also considered, but planned land use information was not detailed enough to provide insight for the purpose of studying future water supply management. Current land uses in SJW’s service area are shown in Figure 3-6. Single-family residential comprises the most common land use in the service area.

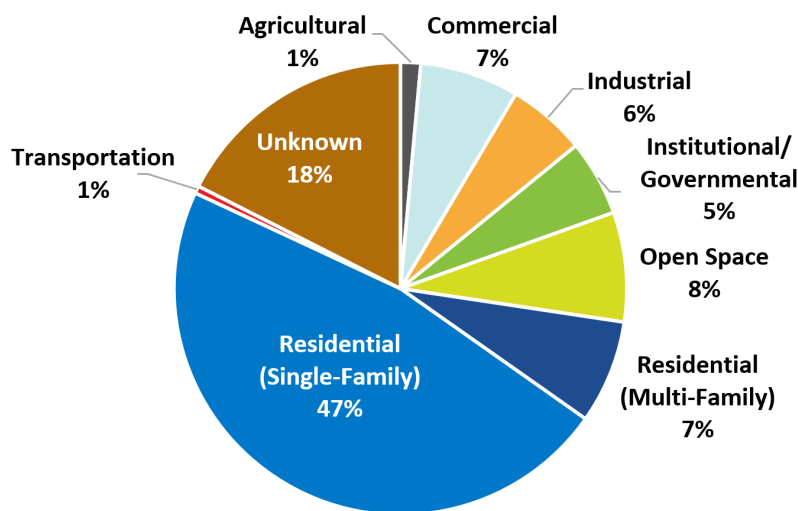


Figure 3-6. Current Land Use in SJW Service Area⁵

An analysis of the ABAG Plan Bay Area 2040 data was performed to forecast future land use trends and the subsequent impacts on water demand. This analysis is presented in Section 4.2.2.

⁴ <https://www.census.gov/acs/www/data/data-tables-and-tools/data-profiles/>

⁵ Some parcels did not have a designated land use type, based on land use parcel data from Santa Clara County

ABAG and the Metropolitan Transportation Commission are currently creating Plan Bay Area 2050, an updated guide for long-term regional planning in the San Francisco Bay Area.⁶ The expected completion date is summer 2021. One of the primary goals of the updated plan is to address the existing housing crisis in the Bay Area. To that end, the 2050 plan is expected to make more assumptions regarding adoption of policy levers and strategies to increase housing supply than previous plans. The draft plan estimates a 73% increase in the number of households and a 46% increase in the number of jobs in Santa Clara County between 2015 and 2050. These projections appear higher than those in Plan Bay Area 2040 (see Section 4.2.1). SJW will continue to monitor the progress of Plan Bay Area 2050 and determine how the altered projections will affect water supply planning.

⁶ <https://abag.ca.gov/our-work/land-use/plan-bay-area-2050>

Chapter 4

System Water Use

This chapter describes and quantifies SJW's past, current, and projected water use by type through 2045. This chapter primarily covers potable water use and other non-potable water use (such as raw water). Recycled water use and projections are covered in more detail in Chapter 6.

Most of the water use in SJW's service area is in the residential and commercial sectors. Historical water use shows that per capita consumption has decreased over the years, due to the effects of past droughts, water conservation programs, and industry improvements in the efficiency of water-using devices. A slight increase in per capita demands between 2020 and 2025 is anticipated, based on rebounds in demands that have been observed since the end of the 2012-2016 drought. However, following 2025, with the implementation of conservation mandates from the State (SB 606 and AB 1668) and continued water conservation programs, per capita demands are anticipated to decrease. Combined with future population growth, total demands are projected to increase by 13% between 2020 and 2045. A number of low-income residential units will be added within SJW's service area, which are accounted for in SJW's demand projections. Within the residential sector, higher demand increases are expected for multi-family homes than for single-family homes, as the majority of new housing developments are expected to be for multi-family homes. The distribution of demands across the other water use sectors is expected to remain relatively constant throughout future years. Water loss is a component of system water use, and SJW reports water loss numbers on an annual basis. Over recent water loss audits, SJW has averaged 7.3% of water losses as a percent of water supplied.

4.1 Water Use by Type

SJW meters all service connections, both new and existing. The majority of connections to SJW's distribution system are residential or commercial. SJW also provides water to industrial, institutional/governmental, and landscape services. Portable meters provide water for construction and other uses where normal service is not available. SJW also serves a number of small water systems, under the resale category. SJW primarily provides potable water to its customers. However, SJW also provides raw water to two of the small water systems that it serves. These small water systems also have their own sources of water supply. Water used by the small water systems are primarily for residential purposes.

For UWMP purposes and to better align with the water use sectors outlined in CWC Section 10631(d)(1), land parcel data from the Santa Clara County Assessor was used to reclassify some customers based on land use type. This was necessary, because SJW's existing billing system does not differentiate between single-family and multi-family residential accounts. Furthermore, customer type designations may be made from a billing perspective, such that multi-family residential developments may be classified as commercial if the account holder is a homeowners' association or an entity rather than an individual. Lastly, SJW's billing system currently tracks municipal customers rather than a larger institutional/governmental category. Table 4-1 lists SJW's water demands and losses for 2020.

Table 4-1 Retail: Demands for Potable and Non-Potable Water - Actual			
Use Type	2020 Actual		
	Additional Description	Level of Treatment When Delivered	Volume (MG)
Single Family		Drinking Water	19,387
Multi-Family		Drinking Water	8,063
Commercial		Drinking Water	4,645
Industrial		Drinking Water	172
Institutional/Governmental		Drinking Water	1,689
Landscape		Drinking Water	2,396
Sales/Transfers/Exchanges to other Suppliers	Resale	Drinking Water	163
Sales/Transfers/Exchanges to other Suppliers	Resale	Raw Water	7
Losses	Real and apparent losses	Drinking Water	2,958
Other Potable	Portable meter	Drinking Water	52
Other Potable	Unbilled unmetered use	Drinking Water	60
TOTAL			39,592
NOTES: Includes potable and raw water use. Recycled water use is not included in this table, but is shown in Table 6-4. Unbilled unmetered use includes use for construction activities, tank/reservoir cleaning, irrigation at SJW stations, hydrant testing, meter testing, etc. Volumes for losses and unbilled unmetered use are estimated, based on the difference between system production data and metered use, and the typical distribution between losses and unbilled unmetered use from SJW's recent water loss audits that were submitted to DWR as part of SB 555 requirements.			

4.2 Historic and Projected Water Demands

SJW has developed demand projections from 2020 to 2045 based on population growth, land use changes, trends in per capita water use, and considerations of upcoming mandates in water conservation.

4.2.1 Population and Housing Growth

Population and housing growth is one of the most significant factors affecting long-term water supply. Plan Bay Area 2040 estimates that the number of households in Santa Clara County will increase from 623,210 in 2015 to 860,810 in 2040, or by 38%. This growth rate is the fastest of all counties in the Bay Area. City of San José, the major metropolitan area in the region, is expected to see the largest proportion of that growth. Multi-family residential urban infill projects in areas like downtown San Jose/Diridon Station and the Berryessa BART station are projected to drive the housing increase. ABAG population projections were used to estimate population growth within SJW's service area, as discussed in Chapter 3. SJW's population is expected to increase from 997,817 in 2020 to 1,335,044 in 2045, or by 34%.

4.2.2 Land Use Changes

As residential and commercial, industrial, and institutional (CII) demands make up the majority of SJW's demands, land use projections from ABAG were used to examine potential differences in future demands

across these sectors. For the Plan Bay Area 2040 report, ABAG uses land use and transportation modelling to forecast future land use trends through 2040. According to the ABAG data, the proportion of residential versus commercial/industrial acreage within SJW’s service area is projected to remain constant throughout future years, as shown in Figure 4-1.

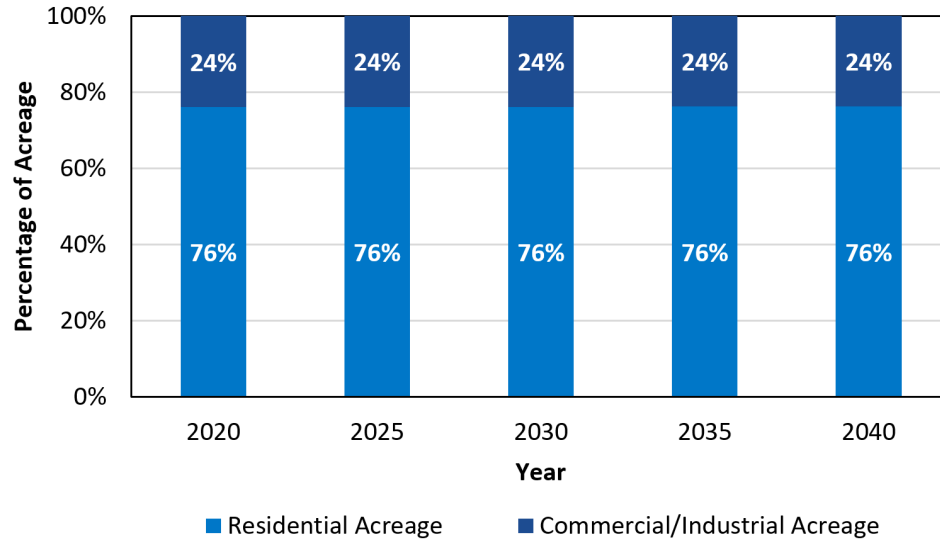


Figure 4-1. Projections for Residential and Commercial/Industrial Land Use

Projections from ABAG on the count of single-family development units versus multi-family development units within SJW’s service area was used to determine differences in projected demands within the residential sector for single-family versus multi-family homes. As shown in Figure 4-2, the ABAG projections show that multi-family development units are expected to account for a majority of the residential growth within SJW’s service area, which aligns with the trend that SJW has seen in recent years with new developments.

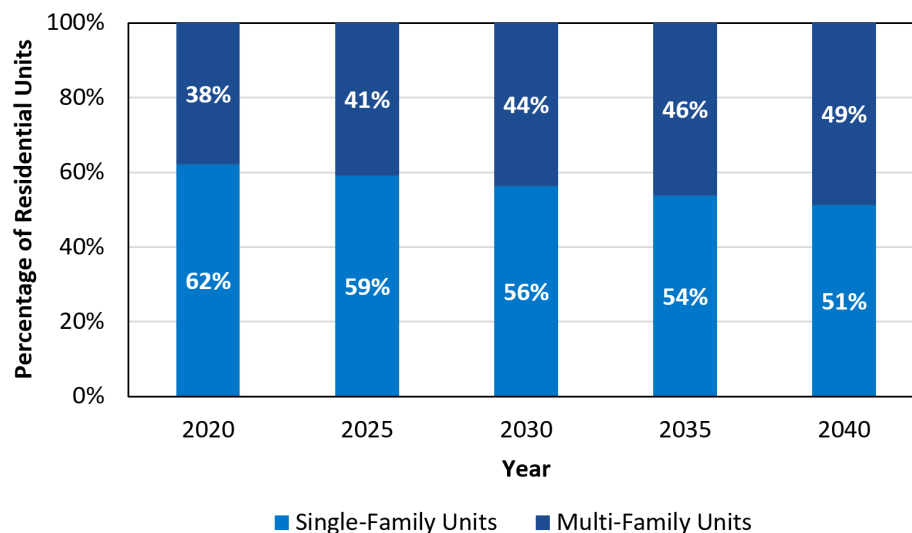


Figure 4-2. Projections for Single-Family and Multi-Family Residential Units

4.2.3 Demand Distribution across Water Use Sectors

Compared to 2019 water use data, 2020 water use data showed a slightly higher proportion of water use in the residential sector and a lower proportion of water use in the CII sector, possibly due to the effects of the COVID-19 pandemic and the associated trend of working from home (see Figure 4-3). In projecting demands, it was assumed that the distribution of demands across water sectors would return to the distribution of demands from 2019, prior to the COVID-19 pandemic.

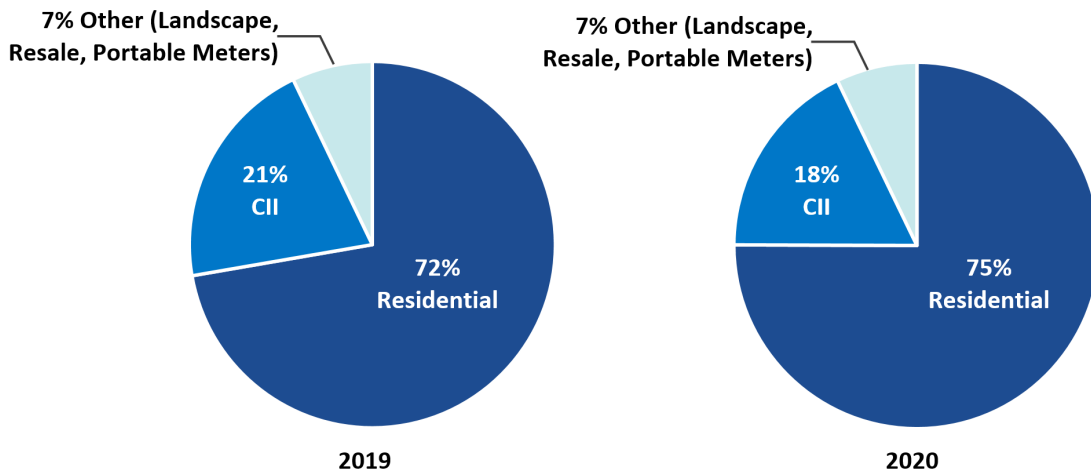


Figure 4-3. Distribution of Demands across Water Use Sectors in 2019 and 2020⁷

Within the residential sector, demand projections were allocated between single-family and multi-family residential sectors based on the distribution between new single-family and multi-family development units, as shown in Figure 4-2. Because the majority of residential growth is expected to be from new multi-family developments, demands in the multi-family residential sector are projected to increase at a higher rate than demands in the single-family residential sector. Across the other sectors, the same distribution of demands from 2019 was assumed for future years, as the proportion of residential versus CII growth within SJW's service area is expected to remain constant.

4.2.4 Water Conservation

Daily per capita water use for SJW's service area in 2020 was 108 gallons per capita per day (gpcd). For demand projections, it was assumed that all developments after 2020 would require high water efficiency fixtures. Thus, a lower daily per capita water use of 75 gpcd across all water use sectors was applied to new population growth occurring after 2020. This assumption was derived by examining the following factors:

- Multi-family residential units are expected to make up the majority of new residential developments. Typical per capita water use for SJW's existing multi-family residential customers in 2020 was calculated to be approximately 60 gpcd.⁸ As multi-family residential units are expected to make up the majority of new residential developments, this 60-gpcd number was

⁷ As a percent of total customer water use, which excludes water losses and unbilled unmetered use

⁸ Estimated by assuming 3.1 persons per household, based on Department of Finance data for typical persons per household in the cities served by SJW (<https://www.dof.ca.gov/Forecasting/Demographics/Estimates/e-5/>).

considered representative of residential use for new population growth occurring after 2020, except that newer residential developments would be more water efficient and may have slightly lower use than the 60-gpcd number. The final 75-gpcd number for daily per capita water use across all water sectors was derived, assuming that residential demands continue to make up 72% of customer demands as was the case in 2019.

- According to a recent webinar with DWR and SWRCB that was held on April 22, 2021, the draft indoor residential water use standards are proposed to be revised to 55 gpcd until 2025, 47 gpcd until 2030, and 42 gpcd thereafter (previously 55 gpcd until 2025, 52.5 gpcd until 2030, and 50 gpcd thereafter). As newer developments would be more water efficient than existing developments, the lowest 42-gpcd number was considered representative of indoor residential use for new population growth occurring after 2020. The standard applies to both multi-family and single-family residential use. As multi-family residential units are expected to make up the majority of new residential developments, and multi-family units have lower per capita water use than single-family units, new multi-family units may have slightly lower use than the 42-gpcd number. Combined indoor and outdoor residential use for new population growth occurring after 2020 was estimated by assuming a rough 70/30 split⁹ between indoor and outdoor use. The final 75-gpcd number for daily per capita water use across all water sectors was derived, assuming that residential demands continue to make up 72% of customer demands as was the case in 2019.

For the already-existing population, it was assumed that the 108 gpcd per capita water use from 2020 to 2025 would increase slightly by 1% per year, based on the rebounds in demand that have been observed following the past drought, as shown in Figure 4-4. Following the start of compliance with State conservation mandates in 2025, per capita water use is expected to decrease. Based on conservation mandates and ongoing conservation efforts, such as changes in landscape plant choice and continual efforts to reduce leakage and runoff, it was assumed that the per capita water use for the existing population would experience a decline of 0.8% per year from 2025 to 2045. Because the State water use standards have not yet been finalized, it is unclear how SJW's demands will compare to the water use objectives, and if per capita water use will decrease more rapidly in the initial years following 2025 to comply with conservation mandates, or gradually over time.

⁹ SJW does not have separate indoor and outdoor meters for residential customers. A 70/30 split assumed based on information from <https://www.epa.gov/watersense/how-we-use-water>. With Advanced Metering Infrastructure (AMI) technology, indoor and outdoor use can be estimated more accurately (see Section 9.3).

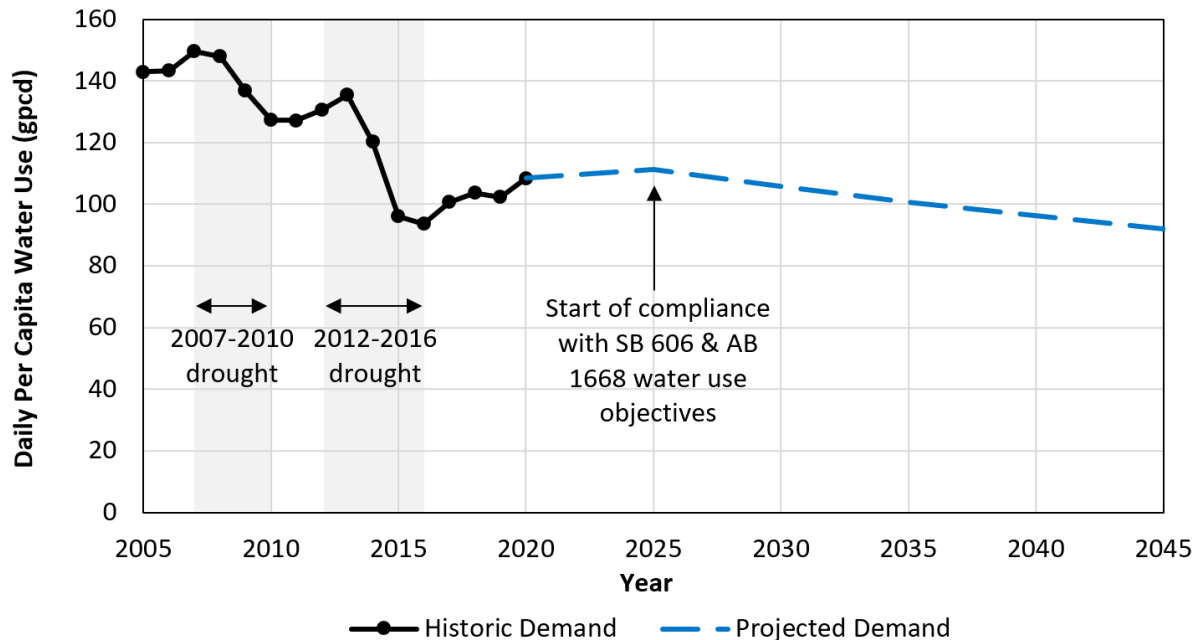


Figure 4-4 Historic and Projected Daily per Capita Water Use (excluding recycled water)

The average annual change in per capita water use between 2005 and 2020 has been -1.6%. However, it is not anticipated that per capita water use will continue to decrease at such a rapid rate. In addition to regular ongoing water conservation programs, the 2007-2010 and 2012-2016 droughts had major impacts on decreasing use. Furthermore, significant strides have already been made for water conservation, such as for indoor water use. WaterSense labeled toilets, clothes washers, showerheads, and faucet aerators dominate the retail market and offer consumers with a variety of options when purchasing new indoor water-using devices. Because of plumbing efficiency requirements, Valley Water has reprioritized the type and variety of indoor water conservation programs and services offered to maximize water savings. Similarly, SJW's program for distributing low-flow showerheads and faucet aerators to customers, which has been in place since 1992, will only continue until the existing inventory of hardware is depleted.

4.2.5 Water Loss and Unbilled Unmetered Use

Based on recent water loss audits submitted to DWR as part of SB 555 requirements, average annual water loss in SJW's distribution system has been 7.3% of water supplied (excluding raw and recycled water), and annual unbilled unmetered use has been 54 MG on average. With SJW's ongoing deployment of acoustic leak detection sensors in the distribution system and its main replacement program (discussed in Chapter 9), it was assumed that in 2025 and thereafter, water losses would decrease to 7%. Unbilled unmetered use is expected to remain constant in future years.

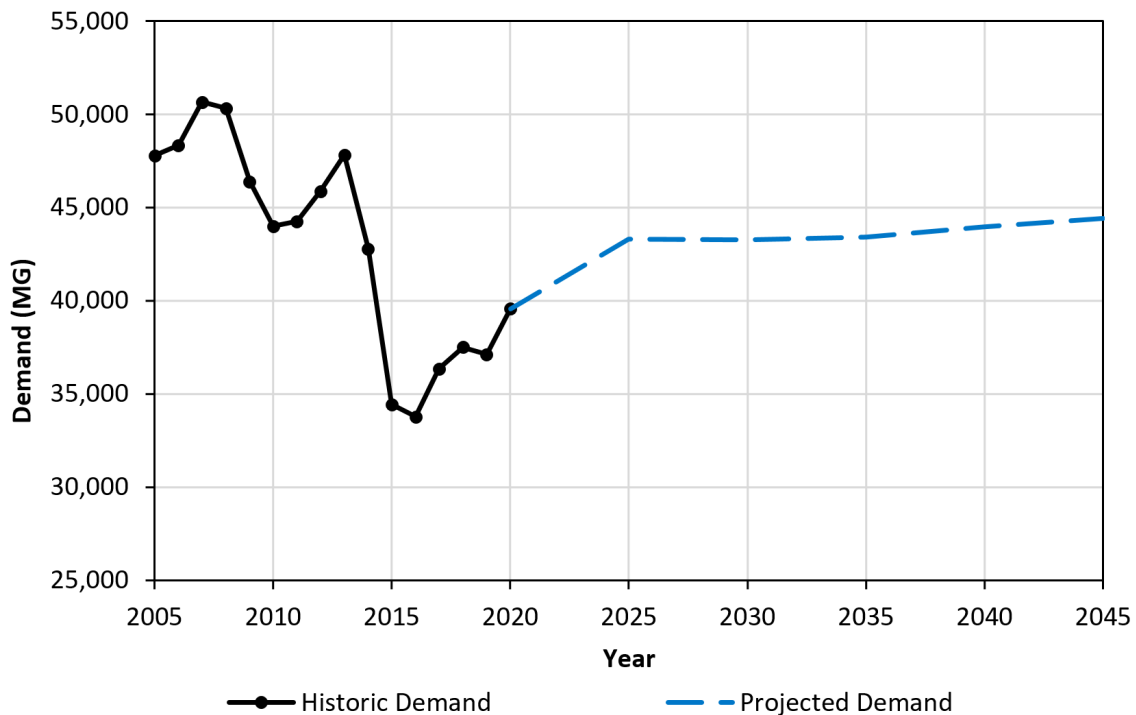
4.2.6 Summary of Historic and Projected Water Demands

SJW's projected demands for potable and raw water are summarized in Table 4-2 and Figure 4-5. Details on the calculations for Table 4-2 are in Appendix B. While some post-drought rebound in demands is expected in 2020-2025, overall water conservation efforts are anticipated to offset increase in demands from population growth, such that only a slight increase in demands past 2025 is projected to occur.

Table 4-2 Retail: Use for Potable and Non-Potable Water - Projected

Use Type	Additional Description	Projected Water Use (MG)				
		2025	2030	2035	2040	2045
Single Family		17,556	17,556	17,657	17,730	17,775
Multi-Family		11,488	11,488	11,505	11,783	12,043
Commercial		5,889	5,889	5,913	5,984	6,045
Industrial		234	234	235	238	240
Institutional/Governmental		2,153	2,153	2,162	2,188	2,211
Landscape		2,595	2,595	2,605	2,637	2,664
Sales/Transfers/Exchanges to other Suppliers	Resale	178	178	179	181	183
Sales/Transfers/Exchanges to other Suppliers	Resale (Raw)	7	7	7	8	8
Losses		3,029	3,029	3,041	3,077	3,109
Other Potable	Portable Meter	82	82	82	83	84
Other Potable	Unbilled Unmetered Use	54	54	54	54	54
TOTAL		43,311	43,265	43,440	43,963	44,416

NOTES: 2040 projections account for leap year.


Figure 4-5 Historic and Projected Demands (excluding recycled water)

Including recycled water, SJW's historic and projected water demands are summarized in Table 4-3. Historic and projected recycled water demands are presented in Figure 4-6. Recycled water demand projections were based on projections from SJW's Recycled Water Master Plan and subsequent revisions. The projected increase in recycled water demand from 2020-2025 is due to new on-site retrofits where customers convert their potable irrigation system to a recycled water service along one of SJW's existing recycled water pipeline alignments. Projected increases beyond 2025 are due to additional recycled water customer retrofits along future pipeline alignments that are planned, but not yet approved, for construction in 2025-2035. Additional discussion on historic and projected recycled water use can be found in Chapter 6.

Table 4-3 Retail: Total Water Use (Potable and Non-Potable)						
	2020	2025	2030	2035	2040	2045
Potable Water, Raw, Other Non-potable (MG)	39,592	43,311	43,265	43,440	43,963	44,416
Recycled Water Demand (MG)	798	890	1,010	1,189	1,193	1,189
TOTAL WATER USE (MG)	40,390	44,201	44,275	44,629	45,156	45,605

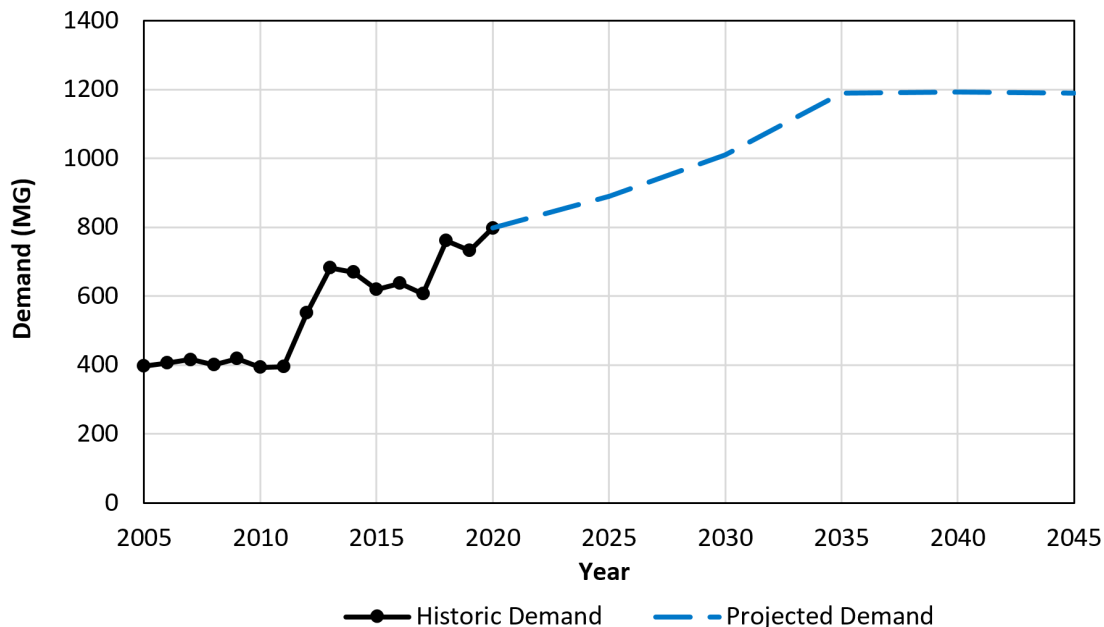


Figure 4-6 Historic and Projected Recycled Water Demands

4.3 Distribution System Water Losses

Water losses are separated into two categories: apparent losses and real losses. Apparent losses include all types of inaccuracies associated with customer metering as well as data handling errors. Real losses are physical water losses from the pressurized system and the utility's storage tanks, up to the customer meter. These can include lost water through leaks, breaks, and overflows.

In accordance with SB 555, SJW submits validated water loss audits to DWR on an annual basis, for both the SJW system and the City of Cupertino Municipal Water System. These water loss audits are prepared using American Water Works Association (AWWA) Water Loss Control Committee Water Audit Software and guidelines from the AWWA M36 manual for Water Audits and Loss Control Programs. A copy of SJW's most recent water loss audit can be found in Appendix C. Copies of other SJW water loss audits that have been submitted to DWR can be found on DWR's website.¹⁰

Water losses from the last five years of SJW's annual water loss audits are summarized in Table 4-4. Submission of validated water loss audits to DWR only began in the 07/2016 reporting period with the SB 555 requirements. Prior to the 07/2016 reporting period, SJW was only conducting water loss audits for the SJW system. Water losses for the City of Cupertino Municipal Water System for the 10/2015 reporting period were estimated for UWMP reporting. The same methodology and AWWA Water Audit Software was used for those estimates, as was used for the 07/2016 water loss audit for the City of Cupertino Municipal Water System.

Across the last four water loss audits that have been validated and submitted to DWR, SJW has averaged 7.3% of water losses as a percent of water supplied. SJW's distribution system has had consistently low water losses due to SJW's proactive approach to reducing leaks, including investments in acoustic leak detection technology and a water main replacement program that prioritizes pipelines for replacement based on their propensity to leak (further discussed in Chapter 9). According to CWC Section 10631(d)(3)(c), the 2020 UWMPs are required to provide data demonstrating whether the State water loss performance standards¹¹ have been met. The SWRCB has yet to finalize these standards, and thus, compliance with these standards cannot be demonstrated in this UWMP at this time. SJW's approach to leak management will help SJW comply with the standards that are currently being developed. In addition, SJW developed an online dashboard in 2020 to track water loss metrics on a more frequent basis than the SB 555 reporting requirements call for.

Table 4-4 Retail: Last Five Years of Water Loss Audit Reporting

Reporting Period Start Date (mm/yyyy)	Volume of Water Loss (MG)
10/2015	2,445
07/2016	2,681
07/2017	2,688
07/2018	2,627
01/2019	2,650
NOTES: Submission of validated water loss audits to DWR only began with the 07/2016 audit. Before that, SJW was not conducting water loss audits for the City of Cupertino system. Water losses for the City of Cupertino Municipal Water System for the 10/2015 audit were estimated for UWMP reporting.	

¹⁰ https://wuedata.water.ca.gov/awwa_plans

¹¹ https://www.waterboards.ca.gov/water_issues/programs/conservation_portal/water_loss_control.html

4.4 Water Use for Lower Income Households

State law recognizes the vital role local governments play in the supply and affordability of housing. Each local government in California is required to adopt a housing element as part of its General Plan that shows how the community plans to meet the existing and projected housing needs of people at all income levels.

The Regional Housing Need Allocation (RHNA) is the state-mandated process to identify the total number of housing units (by affordability level) that each jurisdiction must accommodate in its Housing Element. As part of this process, the California Department of Housing and Community Development (HCD) identifies the total housing need for the San Francisco Bay Area. ABAG then develops a methodology to distribute this need to local governments. Once a local government has received its final RHNA, it must revise its Housing Element to show how it plans to accommodate its portion of the region's housing need. ABAG has sought to engage local jurisdictions, stakeholders, and members of the public throughout the process of developing the RHNA. The HCD released the Regional Housing Needs Determination on June 9, 2020. The ABAG Executive Board approved a Draft RHNA Methodology and Final RHNA Subregional Shares on January 21, 2021. The housing unit allocations for the cities within SJW's service area are listed below:

- Campbell: 2,977
- Cupertino: 4,588
- Los Gatos: 1,993
- Monte Sereno: 193
- San Jose: 52,875
- Saratoga: 1,712

The following calculation assumes that 85% of the San Jose allocation and 100% of all other cities' allocations will fall within the SJW service area. Based on these allocations, 64,338 low-income residential units will be added within SJW's service area within RHNA's 2023-2031 time frame. Based on SJW's projected 2030 demands, this translates to approximately 18.6 MG per day in 2030 for the new low-income residential units. This estimate does not represent a net increase in demand because the locations for the future low-income residential units have existing water use that will be replaced. Table 4-5 summarizes the inclusion of low-income residential demands in SJW's demand projections.

Table 4-5 Retail Only: Inclusion in Water Use Projections	
Are Future Water Savings Included in Projections?	No
<i>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.</i>	
Are Lower Income Residential Demands Included In Projections?	Yes
NOTES: SJW's demand projections account for water conservation savings. However, demand projections do not directly account for future water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans.	

4.5 Climate Change Considerations

Climate change impacts such as warmer temperatures, shrinking snowpack, and changing precipitation patterns are already being observed in the Bay Area. Although models show a significant range of potential effects, climate change has become an important consideration for long-term water resources planning in the region.

Purchased water from Valley Water and groundwater from the Santa Clara Subbasin, managed by Valley Water, make up the majority of SJW's water supply. Recognizing the importance of managing climate change-related vulnerabilities and risks to fulfill its mission, Valley Water is developing a Climate Change Action Plan.¹² The Climate Change Action Plan will consider a variety of strategies to create a resilient water supply portfolio, including investments in recycled water and water conservation, optimized use of existing supplies and infrastructure, and the inclusion of hydrology and sea level rise projections into future planning. Valley Water is also performing an assessment of climate change impacts to its future water supply reliability within the next two years.

¹² <https://www.valleywater.org/your-water/water-supply-planning/your-water/water-supply-planning/climate-change-action-plan>

Chapter 5

Senate Bill x7-7 Baselines, Targets, and 2020 Compliance

This chapter describes the Water Conservation Act of 2009 (SB x7-7), baseline daily per capita water use, interim and final urban water use targets, and SJW’s compliance with the final 2020 urban water use target.

SB x7-7 requires urban retail water suppliers to reduce per capita water use 20% from the baseline daily per capita water use by December 31, 2020. Water suppliers are required to set a water use target for 2020 and an interim target for 2015. As part of the 2015 UWMP cycle, SJW demonstrated compliance with its interim 2015 target. This 2020 UWMP shows SJW’s compliance with the final 2020 target. Using the allowed methodologies for calculating baseline water use and targets, SJW’s 2020 target was calculated to be 127 gpcd. SJW’s actual water use in 2020 was 109 gpcd¹³, which was lower than the 2020 target of 127 gpcd, and therefore SJW has met its 2020 target.

5.1 Water Conservation Act of 2009

The Water Conservation Act of 2009, SB x7-7, requires urban retail water suppliers to reduce per capita water use 20% from the baseline daily per capita water use by December 31, 2020. Water suppliers were required to set a water use target for 2020 and an interim target for 2015. As part of the 2015 UWMP cycle, SJW demonstrated compliance with its interim 2015 target. As part of the 2020 UWMP cycle, urban retail water suppliers are required to demonstrate compliance with their 2020 target.

5.2 Water Use Baseline and Target Calculations

For consistent application of SB x7-7, DWR produced “Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use” (Methodologies) in February 2011 (last updated in February 2016).¹⁴ Per capita water use is defined by the legislation as the gross water use divided by the service area population. Gross water use is the total volume of water, whether treated or untreated, entering the distribution system of an urban retail water supplier, excluding recycled water and a few other exceptions.

Water suppliers must define a 10- or 15-year baseline period for water use ending between December 31, 2004 and December 31, 2010 that will be used to develop their water use targets. The longer baseline period applies to a water supplier that meets at least 10% of its 2008 measured retail water demand through recycled water.

Four methodologies are stipulated for calculating the water use target. Three of the methods are listed in CWC Section 10608. The fourth method was developed by DWR. The four methodologies are:

¹³ SJW’s actual water use in 2020 is 108 gpcd if leap year is assumed (366 days in the year), as referenced in Chapter 4. However, DWR’s standard calculations for SB x7-7 assume 365 days in all years, and calculates SJW’s actual water use in 2020 as 109 gpcd.

¹⁴ DWR. *Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use* (Feb 2016). <https://data.cnra.ca.gov/dataset/2015-urban-water-management-plans-uwmpps-historic-information/resource/683fee5e-fc96-484e-a07b-c592107718c9>

- Method 1 – 80% of the water supplier’s baseline per capita water use
- Method 2 – Per capita daily water use estimated using the sum of performance standards applied to indoor residential water use, landscape area water use, and CII water uses
- Method 3 – 95% of the applicable State hydrologic region target as stated in the State’s draft 2020 Water Conservation Plan
- Method 4 – This method allows flexibility in its calculation to account for the highly diverse conditions of each agency’s landscape and CII water needs and to give credit for past conservation efforts.

Water suppliers must also calculate water use for a 5-year baseline period ending between December 31, 2007 and December 31, 2010, and use that value to determine a minimum required reduction in water use by 2020, which is 95% of the 5-year baseline per capita water use. The minimum of the computed targets is taken as the final 2020 target. The interim 2015 target is halfway between the baseline water use and 2020 target.

5.3 2020 Water Use Target Compliance

In accordance with the Methodologies document, SJW calculated its baseline per capita water use, its water use target for 2020, and its interim water use target for 2015 during the 2010 UWMP cycle.

As part of the 2015 UWMP cycle, agencies were given the opportunity to update their 2020 target and change the method used to calculate the water use target. In accordance with CWC Section 10608, SJW recalculated its baseline population and water use targets for 2015 and 2020 using Method 4. As shown in the SB x7-7 Verification Forms, Appendix D, and in Table 5-1 and Figure 5-1, SJW’s calculated baseline per capita water use is 154 gpcd using a ten-year average ending between December 31, 2004 and December 31, 2010 and 147 gpcd using a five-year average ending between December 31, 2007 and December 31, 2010. Determination of annual service area population used for the baseline periods between 1995 and 2007 was based on number of service connections and a person-per-connection calculation. SJW’s 2020 target was calculated to be 127 gpcd.

As part of the 2020 UWMP cycle, agencies were required to demonstrate compliance with their 2020 target. Agencies were also required to revise the baselines and 2020 target calculated during the 2015 UWMP cycle if needed due to service area changes or other special circumstances since 2015. Service area changes were defined as service area contraction or expansion by way of mergers and annexations and not through new construction. Since 2015, SJW has not had service area contractions or mergers and annexations that resulted in the expansion of its service area. SJW also did not have any special circumstances that would require it to readjust its baselines and targets. Therefore, SJW did not recalculate its baselines and 2020 target as part of the 2020 UWMP cycle. Determination of the 2020 service area population used to calculate 2020 daily per capita water use was based on population data from the United States Census Bureau and ABAG, as described in Chapter 3. As shown in the SB x7-7 2020

Compliance Forms, Appendix E, and in Table 5-2 and Figure 5-1, SJW's actual water use in 2020 was 109 gpcd¹⁵, which was lower than the 2020 target of 127 gpcd. SJW is in compliance with the 2020 target.

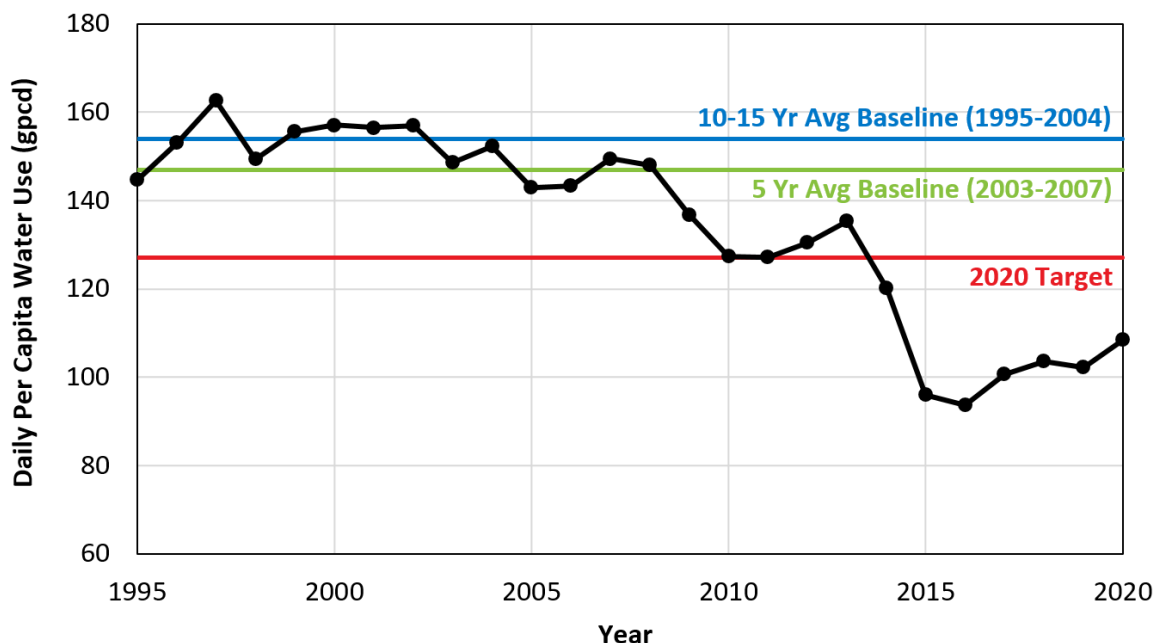


Figure 5-1. Historic Demand, SB x7-7 Baselines, and SB x7-7 2020 Target

Table 5-1 Baselines and Targets Summary From SB X7-7 Verification Form				
Baseline Period	Start Year	End Year	Average Baseline GPCD	Confirmed 2020 Target
10-15 year	1995	2004	154	127
5 Year	2003	2007	147	

Table 5-2: 2020 Compliance From SB X7-7 2020 Compliance Form				
2020 GPCD			2020 Confirmed Target GPCD	Did Supplier Achieve Targeted Reduction for 2020? Y/N
Actual 2020 GPCD	2020 TOTAL Adjustments	Adjusted 2020 GPCD		
109	0	109	127	Y

¹⁵ SJW's actual water use in 2020 is 108 gpcd if leap year is assumed (366 days in the year), as referenced in Chapter 4. However, DWR's standard calculations for SB x7-7 assume 365 days in all years, and calculates SJW's actual water use in 2020 as 109 gpcd.

Chapter 6

System Supplies

This chapter describes and quantifies the current and projected sources of water available to SJW. A description and quantification of potential recycled water uses and supply availability is also included.

SJW has three sources of potable water supply: purchased water from Valley Water, groundwater from the Santa Clara Subbasin (managed by Valley Water), and surface water from local watersheds. A fourth and growing source of non-potable supply is recycled water. SJW's basic water supply strategy is to maximize use of local surface water, use up to the maximum purchased water contract amounts, supplement remaining supply needs with groundwater, and otherwise implement WSCP actions when water supplies are limited and reductions must be made on the demand side. As a non-potable source of supply, recycled water is managed separately from SJW's potable water supplies. However, recycled water can help to offset potable demands, and thus, SJW is aiming to increase the amount of recycled water use in future years. As discussed in Chapter 4, system demands are expected to increase in the future, between 2020 and 2045. The system supplies to meet those demands are expected to come from the same sources, and the mix of system supplies to meet those demands are expected to remain relatively constant. Valley Water has indicated to SJW that they are in the process of planning, designing and constructing a number of projects and programs that will increase water supplies for their retailers, including SJW.

6.1 Purchased Water

On average, purchased water from Valley Water makes up over half of SJW's total water supply. This water originates from several sources including Valley Water's local reservoirs, the State Water Project (SWP) and the federally funded Central Valley Project (CVP) San Felipe Division.¹⁶ Water is piped into SJW's system at various turnouts after it is treated at one of three Valley Water-operated water treatment plants (Rinconada, Penitencia and Santa Teresa). In 1981, SJW entered into a 70-year master contract with Valley Water for the purchase of treated water. The contract provides for rolling three-year delivery schedules establishing fixed quantities of treated water to be delivered during each period. SJW and Valley Water currently have a three-year treated water contract for fiscal years 2020/2021 – 2022/2023, with contract supplies of 70,723 AF in 2020/2021, 70,723 AF in 2021/2022, and 71,858 AF in 2022/2023 (23,045 MG in 2020/2021, 23,045 MG in 2021/2022, and 23,415 MG in 2022/2023). The actual amount of water delivered depends on considerations including hydrologic variability, interruptions in Valley Water facility operations, and water quality.

6.2 Groundwater

SJW relies on its groundwater supplies to ensure supply resiliency against weather-related and other significant anthropogenic or natural disasters. On average, groundwater makes up between 30% and 40%

¹⁶ <https://www.valleywater.org/your-water/where-your-water-comes-from>

of SJW's total water supply. Actual groundwater volume pumped by SJW from 2016 to 2020 is shown in Table 6-1.

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	Location or Basin Name	2016	2017	2018	2019	2020
Alluvial Basin	Santa Clara Subbasin	10,637	13,749	11,755	10,696	17,360
TOTAL		10,637	13,749	11,755	10,696	17,360
NOTES: Volumes are in MG.						

6.2.1 Groundwater Basin Description

As defined by DWR, SJW draws water from the Santa Clara Subbasin (Subbasin 2-009.02) which is part of the larger Santa Clara Valley Basin (Basin 2-009).¹⁷ The Santa Clara Subbasin consists of unconsolidated alluvial sediments and covers a surface area of 297 square miles in the northern part of Santa Clara County. The subbasin is not adjudicated. Valley Water is responsible for maintaining the subbasin and ensuring the subbasin does not become overdrafted. Aquifers in the subbasin are recharged naturally by rainfall and streams and artificially mainly by recharge ponds operated by Valley Water. Due to different land use and management characteristics, Valley Water further delineates the Santa Clara Subbasin into two groundwater management areas: the Santa Clara Plain and Coyote Valley. SJW draws groundwater from the Santa Clara Plain portion, which covers a surface area of 280 square miles and has an operational storage capacity estimated to be 350,000 AF. Figure 6-1 presents a map of the Santa Clara Subbasin.

¹⁷ DWR. *California's Groundwater Update 2020 Bulletin 118 DRAFT* (Mar 2021).
<https://water.ca.gov/Programs/Groundwater-Management/Bulletin-118>

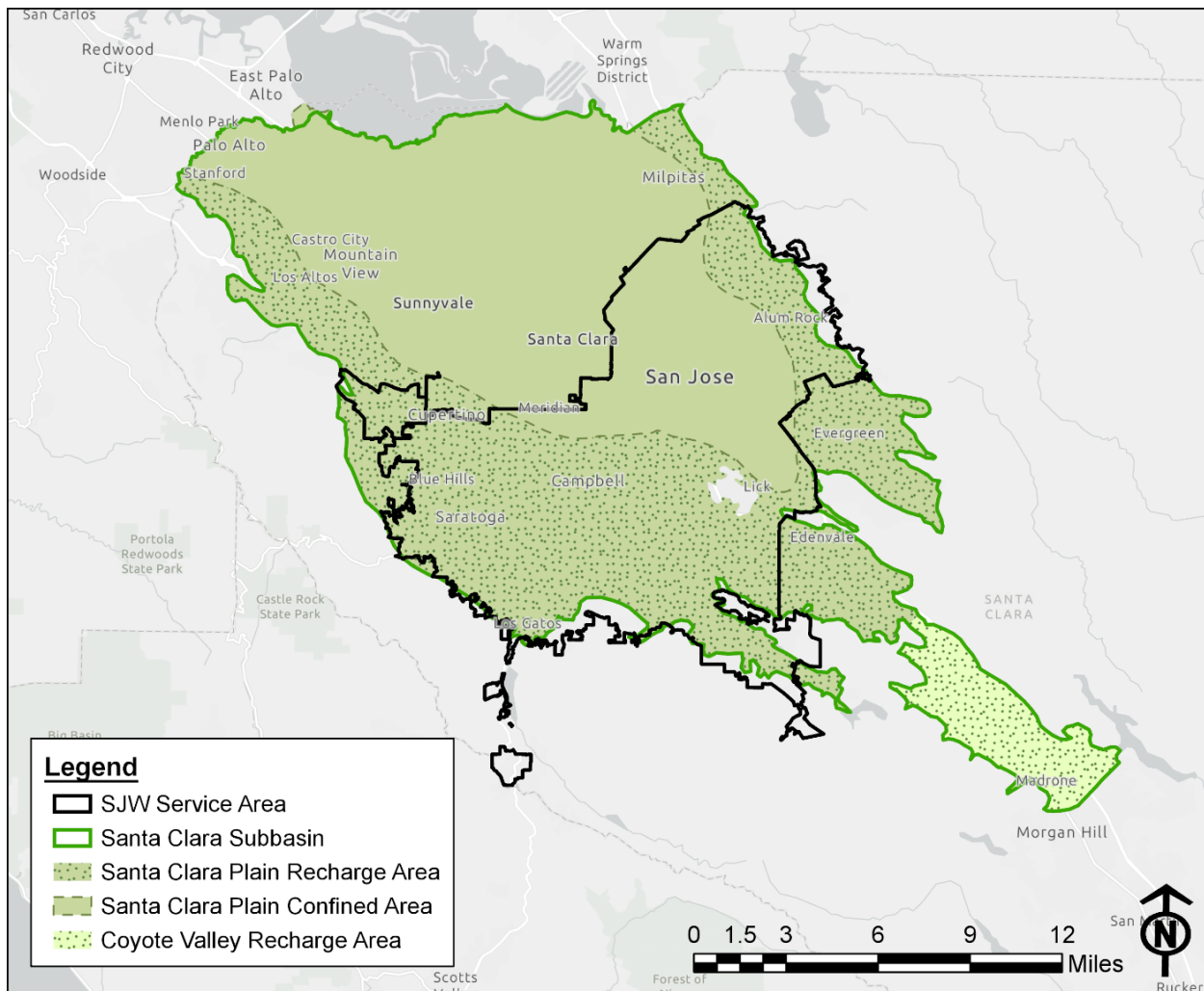


Figure 6-1. Santa Clara Subbasin

6.2.2 Groundwater Management Plan

Valley Water is the designated Groundwater Sustainability Agency for the Santa Clara Subbasin and neighboring Llagas Subbasin under SGMA. Since the 1930s, Valley Water’s water supply strategy has been to use imported and local surface water to supplement groundwater and to maintain reliability in dry years. Conjunctive use of surface water and groundwater helps protect local subbasins from overdraft, land subsidence, and saltwater intrusion and provides critical groundwater storage reserves for use during droughts or outages.

Valley Water’s 2016 Groundwater Management Plan¹⁸ describes Valley Water’s comprehensive groundwater management framework, including existing and potential actions to achieve basin sustainability goals and ensure continued sustainable groundwater management. Valley Water plans to update its Groundwater Management Plan in 2021 to meet the requirements of SGMA.

¹⁸ <https://www.valleywater.org/your-water/where-your-water-comes-from/groundwater/sustainable-groundwater-management>

The 2016 Groundwater Management Plan identifies the following two basin management objectives:

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

On July 17, 2019, DWR approved the Alternative for both the Santa Clara and Llagas Subbasins, determining it satisfies the objectives of SGMA. DWR also proposed five recommended actions for Valley Water's consideration: identify groundwater dependent ecosystems, incorporate climate change analysis in the water budget, create separate water quality outcome measures for each subbasin, clarify quantifiable outcome measures, and develop a seawater intrusion outcome measure.¹⁹

SJW works with Valley Water to implement numerous programs to protect groundwater resources, including comprehensive monitoring programs related to groundwater levels, land subsidence, overdraft, groundwater quality, recharge water quality, and surface water flow. SJW plays a major role in influencing groundwater conditions through its groundwater pumping operations, and thus, SJW and Valley Water collaborate closely on operations as well as long-term planning. As outlined in the 2016 Groundwater Management Plan, effective coordination with water retailers, which includes SJW, have helped to achieve sustainable groundwater conditions. As an example, during the recent drought, retailer efforts to use treated surface water and reduce pumping in certain areas were instrumental in groundwater level recovery and minimizing the risk of resumed land subsidence.

To coordinate with Valley Water, SJW attends quarterly SGMA meetings and numerous other stakeholder meetings, participates in Valley Water Subcommittees, participates in reviewing Valley Water's long-term planning documents and frameworks, and maintains regular communications with Valley Water. SJW will continue working closely with Valley Water to ensure sustainability of the basin and address future water supply challenges.

6.2.3 Current Groundwater Conditions

DWR has identified the Santa Clara Subbasin as a high priority subbasin based on criteria that include overlying population, projected growth, number of wells, irrigation acreage, groundwater reliance, and groundwater impacts. The subbasin has not been identified by DWR as being critically overdrafted.

Figure 6-2 shows groundwater elevation in the Santa Clara Plain since the mid 1930's using the well surface elevation as the datum. Although groundwater levels declined during the recent 2012-2016 drought, groundwater levels in the Santa Clara Subbasin quickly recovered after the drought due largely to Valley Water's proactive response and comprehensive water management activities. The state of the groundwater basins is reported monthly by Valley Water through a Groundwater Conditions Report²⁰ and Water Tracker²¹.

¹⁹ <https://www.valleywater.org/your-water/where-your-water-comes-from/groundwater/sustainable-groundwater-management>

²⁰ <https://www.valleywater.org/your-water/where-your-water-comes-from/groundwater/groundwater-monitoring>

²¹ <https://www.valleywater.org/your-water/water-supply-planning/monthly-water-tracker>

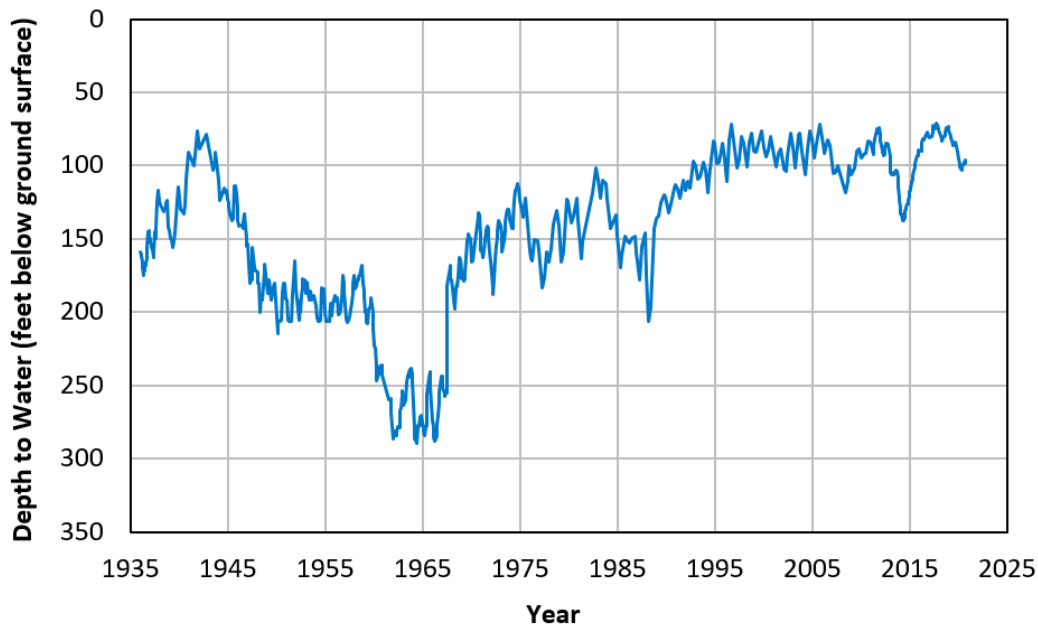


Figure 6-2 Groundwater Elevation in Santa Clara Plain (Well ID: 07S01W25L001)

Most wells in Santa Clara County, including SJW’s wells, produce high-quality water that meets drinking water standards without the need for treatment beyond disinfection. The primary exception is nitrate, which is elevated in many southern Santa Clara County wells (primarily domestic wells). Cleanup is ongoing at a number of sites with industrial contaminants in groundwater, and elevated levels of perchlorate are still observed in a few southern Santa Clara County wells. Contamination is not a widespread issue at SJW’s wells. SJW regularly tests for contaminants in the groundwater supply and responds promptly to threats of contamination with changes to operations. SJW has also conducted a thorough evaluation of the likelihood of contamination at all its wells, so that monitoring and contingency plans can be prioritized and put in place.

Though per- and polyfluoroalkyl substances (PFAS) do not currently have a Maximum Contaminant Limit (MCL) in California, these compounds are prompting interest and concern nationwide. Out of an abundance of caution, SJW has been proactively notifying customers and removing wells from service where PFAS has been detected above the State-defined Notification Levels (no PFAS concentrations were found to be above the level at which SJW is required to discontinue the use of its wells). SJW is in the process of studying its options for removing PFAS, including installing treatment at its groundwater stations. SJW will continue to follow all state and federal drinking water requirements and will work with Valley Water, the California Division of Drinking Water (DDW), other basin stakeholders, and the public to ensure that groundwater remains a safe and reliable source of supply.

6.3 Surface Water

SJW has a number of raw water reservoirs and intakes in the Saratoga Creek and Los Gatos Creek watersheds, which store or divert water to SJW’s water treatment plants and provide treated surface water to the service area. Some water is stored in the reservoirs, to maintain habitats and provide storage for releases to downstream intakes during the summer months when natural streamflow is lower. The

amount of available surface water supply is highly variable depending on hydrologic conditions, and generally contribute less than 10% of total water supply.

Prior to 1872, appropriative water rights could be acquired by simply taking and beneficially using water. In 1914, the Water Code was adopted and it grandfathered in all existing water entitlements to license holders. SJW has “pre-1914 water rights” to surface water in Saratoga Creek, Los Gatos Creek, and associated watersheds, totaling to approximately 72 MGD, based on capacity of diversion works from Initial Statements of Water Diversion and Use. SJW also filed for licenses in 1947 and was granted license number 4247 in 1956 by SWRCB to draw 1419 AF/year (462 MG/year) from Saratoga Creek, and license number 10933 in 1979 to draw 6,240 AF/year (2,033 MG/year) from Los Gatos Creek.

Similar to the general rainfall pattern in Northern California, precipitation in the watersheds generally occurs between November and April, with the remainder of the year being fairly dry. In the wet winter months, the surface water system is supplied primarily by intakes on Saratoga Creek, Los Gatos Creek, and tributaries to Los Gatos Creek, as SJW’s raw water reservoirs fill from winter runoff. As the creeks and tributaries begin to dry up in late spring and early summer, SJW begins releasing water stored in its Lake Elsmar (capacity of 2,005 MG) to Los Gatos Creek, where it is diverted by a downstream intake to SJW’s Montevina Water Treatment Plant (WTP). Similarly, flows can also be released from SJW’s Lake Ranch/McKenzie (capacity of 70 MG) to either the Saratoga Creek watershed or Los Gatos Creek watershed, to be diverted by downstream intakes to SJW’s Montevina WTP or Saratoga WTP. With its larger capacity, Lake Elsmar is SJW’s primary means for sustaining surface water flows through the summer months.

6.4 Stormwater

SJW has engineered well blowoff sumps at some of its groundwater stations that capture well blowoff water and stormwater runoff from the site, to facilitate compliance with SJW’s General National Pollutant Discharge Elimination System (NPDES) Permit. These sumps allow for passive treatment and onsite infiltration of both blowoff water and stormwater runoff. Onsite infiltration is considered beneficial reuse under the General NPDES Permit and is a preferred method for discharging potable water. Some of SJW’s other stations have biotreatment areas that provide limited infiltration and passive treatment of stormwater runoff, as part of Municipal Storm Water Permit requirements.

Because SJW does not intentionally divert stormwater for water supply purposes, stormwater is not reported as a water supply source in this UWMP. However, Valley Water has a managed recharge program that includes capturing local runoff in reservoirs and releasing it to groundwater recharge facilities or drinking water treatment plants. On average, about 50,000 AF/year of local runoff is recharged through existing recharge facilities. Through its water supply master planning, Valley Water plans to increase stormwater capture and reuse capacity.

6.5 Wastewater and Recycled Water

Recycled water provides multiple benefits to SJW customers and is a growing source of supply, as it is locally available, available during dry years, and is less susceptible to changes in hydrology. Participating customers receive recycled water at a discount and are not subject to voluntary and mandatory drought

restrictions. The overall customer base benefits since the amount of recycled water used by others reduces the demand on potable water by a 1 to 1 ratio. Therefore, more potable water is available to the overall customer base. Recycled water is important to SJW's overall water supply portfolio since both SJW and Valley Water rely on recycled water and conservation to meet future demands and growth in Santa Clara County. In 2020, recycled water made up approximately 2% of SJW's total water supply, an amount that has increased over recent years, as discussed in Section 4.2.6 and shown in Figure 4-6. SJW aims to further increase that amount, by approximately 1,200 AF or 391 MG between 2020 and 2045, through customer outreach, investment in additional recycled water delivery infrastructure, and coordination with other agencies.

6.5.1 Wastewater

SJW does not own or operate any wastewater treatment facilities. The majority of sewage generated within SJW's service area is provided to the San José/Santa Clara Regional Wastewater Facility (SJ/SC RWF)²² via the Burbank Sanitary District, City of San José, Cupertino Sanitary District, County Sanitation District 2-3, and West Valley Sanitation District collection systems. A small portion of SJW customers are on septic systems. The estimated volume of wastewater collected from SJW's service area is shown in Table 6-2. Wastewater is not treated or disposed of within SJW's service area, as indicated in Table 6-3.

²² <https://www.sanjoseca.gov/your-government/environment/water-utilities/regional-wastewater-facility>

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.					
92%	Percentage of 2020 service area covered by wastewater collection system					
99%	Percentage of 2020 service area population covered by wastewater collection system					
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 (MG)	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?
Burbank Sanitary District, City of San José, Cupertino Sanitary District, County Sanitation District 2-3, West Valley Sanitation District	Estimated	24,420	City of San José	San José/Santa Clara Regional Wastewater Facility	No	No
Total Wastewater Collected from Service Area in 2020:		24,420				
NOTES: Total volume of wastewater treated at SJ/SC RWF in 2020 provided by City of San José. Volume of wastewater collected from SJW service area in 2020 estimated based on the proportion of SJW's potable water demands in 2020 relative to potable water demands of other water retailers served by SJ/SC RWF. This methodology is consistent with the one used in SJW's 2015 UWMP, which SJW coordinated with City of San José to develop.						

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 <i>(optional)</i>	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	Instream Flow Permit Requirement
Total							0	0	0	0	0

The SJ/SC RWF is managed and operated by the City of San José. The plant produces an average of 110 million gallons per day (MGD) of tertiary-treated water, with a capacity of up to 167 MGD. The majority of treated water at SJ/SC RWF is discharged into the South San Francisco Bay. According to information provided to SJW by the City of San José, SJ/SC RWF produced 36,949 MG of treated wastewater in 2020, 30,254 MG of which was discharged to the South San Francisco Bay. Remaining flows were sent to the SBWR²³ system to produce recycled water supplies or to Valley Water’s Silicon Valley Advanced Water Purification Center (SVAWPC) to produce advanced-treated water, some of which is blended with SBWR’s recycled water to improve the quality of recycled water supplies. Figure 6-3 provides an overview of the wastewater and recycled water agencies and facilities serving the SJW service area.

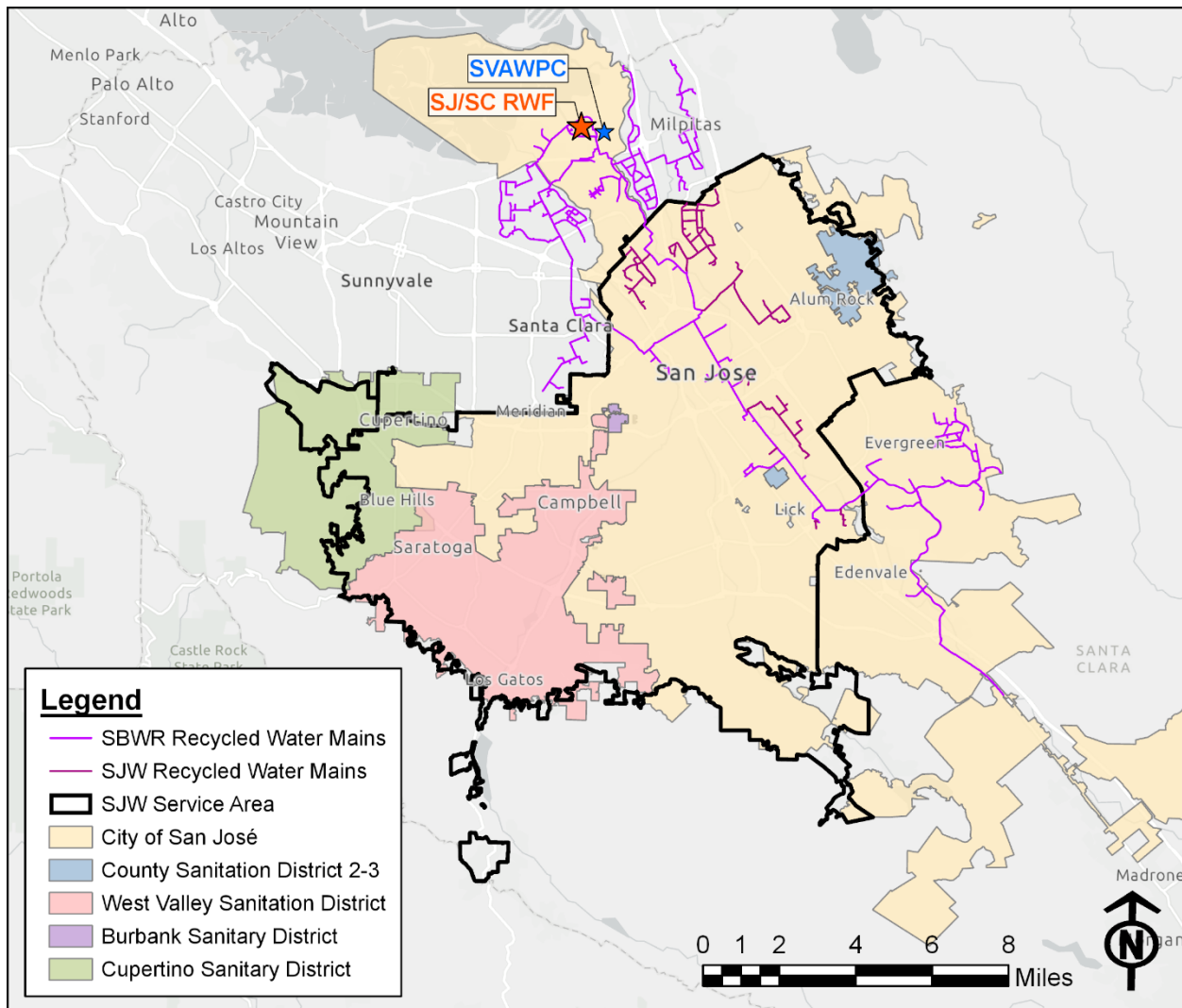


Figure 6-3. Wastewater and Recycled Water Systems within SJW Service Area

²³ <https://www.sanjoseca.gov/your-government/environment/water-utilities/recycled-water>

6.5.2 Recycled Water

SBWR, managed by the City of San José, is SJW's wholesaler for recycled water. The SBWR system consists of over 150 miles of pipe, 5 pump stations, and 10 MG of storage. SBWR blends tertiary-treated water from SJ/SC RWF with advanced-treated water from SVAWPC to improve the quality of recycled water for non-potable use and to maintain total dissolved solids below 500 parts per million. The SVAWPC receives secondary-treated wastewater from SJ/SC RWF and uses microfiltration, reverse osmosis, and ultra-violet disinfection to produce advanced-treated water. SBWR is regulated by the Regional Water Quality Control Board (RWQCB) - San Francisco Bay Region under Order No. 95-117. This order specifies the Water Reclamation Requirements promulgated by the RWQCB for recycled water produced by the SJ/SC RWF and distributed to SBWR.

In 1997, SJW entered into a Wholesaler-Retailer Agreement with the City of San José to provide recycled water to SJW's existing and new customers nearby SBWR recycled water distribution facilities; whereas, the City of San José is the wholesaler and SJW is the retailer. At the time, the involvement of SJW was largely to assist the City in meeting its wastewater regulatory obligations. In accordance with the terms of this agreement, SJW allowed SBWR to construct recycled water pipelines in its service area, SJW would only own the recycled water meters, while SBWR would own, operate, and maintain the recycled water distribution system. In 2010, this Wholesaler-Retailer Agreement was amended to allow SJW to construct recycled water infrastructure that would be owned, operated, and maintained by SJW. Then in 2012, this Wholesaler-Retailer Agreement was again amended to allow SJW to construct additional recycled water infrastructure.

Existing and projected recycled water deliveries by beneficial use type and project name are described in Table 6-4 through Table 6-6. Recycled water in the SJW service area is delivered through both SBWR and SJW recycled water mains. The majority of existing recycled water use in SJW's service area is for landscape irrigation. Recycled water is also used for golf course irrigation, commercial use (toilet/urinal flushing at dual-plumbed buildings, car wash), industrial uses (cooling towers), and agricultural irrigation.

Recycled water use projections are based on planned recycled water main alignments from SJW's Recycled Water Master Plan and updated alignment information. New projected recycled water use is anticipated to be mostly for landscape irrigation. No major golf courses or agricultural facilities were identified along the alignments of SJW's new proposed recycled water mains. There is the potential to provide additional customers with recycled water for dual-plumbed purposes. However, due to the relatively low water usage of these sites, and the high cost to retrofit sites for this type of usage, dual-plumbed use in this manner would likely only occur in new developments. There is also potential to provide additional customers with recycled water for cooling tower makeup or other industrial uses. However, the cost of retrofitting sites to receive water for these uses, the uncertainty of customer specific requirements, and concerns over the impacts of recycled water quality on equipment maintenance and manufacturing makes this a longer-term objective. Thus, it was assumed that increases in recycled water use for commercial and industrial purposes would be minimal.

SJW is not projecting any recycled water use for groundwater recharge or reservoir water augmentation, also known as indirect potable reuse (IPR). However, Valley Water's UWMP includes developing up to

24,000 AF/year of potable reuse capacity. The current plan is that water would be purified at a new or expanded purification center in northern Santa Clara County and then used to recharge the groundwater at Valley Water's Los Gatos Recharge ponds. Through agreements with the cities of Palo Alto and Mountain View, Valley Water is evaluating an expanded and expedited potable reuse program that initially would include at least 11,000 AF/year of potable reuse production capacity with the potential to increase to 14,000 AF/year by 2028, depending on wastewater availability.

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							
Name of Supplier Operating the Recycled Water Distribution System:			South Bay Water Recycling and San Jose Water Company							
Supplemental Water Added in 2020 (volume)			0							
Source of 2020 Supplemental Water			0							
Beneficial Use Type	Potential Beneficial Uses of Recycled Water	Amount of Potential Uses of Recycled Water	General Description of 2020 Uses	Level of Treatment	2020	2025	2030	2035	2040	2045
Agricultural irrigation			Community garden	Tertiary	1	1	1	1	1	1
Landscape irrigation (excl golf courses)				Tertiary	664	757	877	1,056	1,059	1,056
Golf course irrigation				Tertiary	64	64	64	64	64	64
Commercial use			Toilet/urinal flushing, car wash	Tertiary	11	11	11	11	11	11
Industrial use			Cooling towers	Tertiary	58	57	57	57	58	57
Geothermal and other energy production		0								
Seawater intrusion barrier		0								
Recreational impoundment		0								
Wetlands or wildlife habitat		0								
Groundwater recharge		0								
Reservoir water augmentation		0								
Direct potable reuse		0								
Other (Portable Meter)	Construction, dust control	30		Tertiary	0	0	0	0	0	0
Total:					798	890	1,010	1,189	1,193	1,189

NOTES: Volumes are in MG. 2040 use accounts for leap year. New projected recycled water use is anticipated to be for landscape irrigation. Assumed agricultural irrigation, commercial, and industrial use remains constant. Agricultural irrigation is for Guadalupe Community Gardens. Golf course irrigation is for San Jose Municipal Golf Course. Multiple users under commercial and industrial categories (largest use is for cooling towers at San José State University). SJW did not have any significant recycled water use from portable meters in 2020, but has had recycled water use in previous years through portable meters, primarily for construction and street sweeping dust abatement. Amounts will depend on customer demand for recycled water portable meters.

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 (MG)	2020 Actual Use (MG)
Agricultural irrigation	1	1
Landscape irrigation (excludes golf courses)	1,106	664
Golf course irrigation	128	64
Commercial use		11
Industrial use	69	58
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	23	
Total	1,327	798
NOTE: "Other" is for portable meter use, which is primarily for construction and street sweeping dust abatement. SJW did not have any significant recycled water use from portable meters in 2020. In the 2015 UWMP, industrial use was attributed to recycled water use by San José State University (SJSU). However, some of SJSU's recycled water use is for commercial uses (toilet/urinal flushing) and landscape irrigation. This distinction was made in the 2020 UWMP. Additional recycled water customers that were previously attributed to the landscape irrigation category were reclassified as commercial or industrial. Otherwise, the primary difference between the 2015 projections and the 2020 actual use is due to the delay of proposed recycled water main projects. In the 2015 UWMP, SJW planned for three new recycled water main alignments in 2015-2020, which were delayed to minimize impact to water rates and due to lower demand for recycled water than initially projected.		

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.		
Chapter 6 Section 5	Provide page location of narrative in UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use (MG)
Alignment A remainder	Sign up of remaining customers	2021	13
Alignment R remainder	Sign up of remaining customers	2021	26
Alignment C Phase 4 remainder	Sign up of remaining customers	2021	6
Alignment D Phase 1, 2 remainder	Sign up of remaining customers	2021	47
Alignment D Phase 3	New recycled water main extension	2025	40
Alignment E Phase 1	New recycled water main extension	2028	160
Alignment E Phase 2	New recycled water main extension	2031	99
Total			391
NOTES: From Recycled Water Master Plan and updated alignment information. "Remainders" are previously completed alignments where there are still customers to sign up. All of Alignment D Phase 3 demands and half of Alignment E Phase 1 demands included in recycled water projections for 2030. Remaining Alignment E Phase 1 demands and all of Alignment E Phase 2 demands included in recycled water projections for 2035.			

6.6 Desalinated Water Opportunities

SJW does not currently use desalinated water as a water supply.

Valley Water is a partner in the Bay Area Regional Desalination Project (BARDP), which is evaluating purifying brackish water from Mallard Slough using Contra Costa Water District water rights. Partners include San Francisco Public Utility Commission, Zone 7 Water Agency, and Contra Costa Water District. Partners built a pilot plant in October 2008 and completed the pilot study in April 2009, which showed the project is feasible. Since the pilot study, the 2012-2016 drought showed that the water rights that would be exercised to divert flows to the plant may not be fully available during droughts. Partners are evaluating the water rights to determine how much water can be reliably produced by a desalination facility. In addition, partners are evaluating approaches for conveying project water to each partner agency.

While each partner agency continues to evaluate its need for the project, the agencies are collectively embarking on a study to look more broadly at all available opportunities to optimize the sharing of water resources across the region, referred to as the Bay Area Regional Reliability Project (BARR Project).²⁴ BARR agencies include the BARDP partners, East Bay Municipal Utility District, and Alameda County Water District. Through BARR, the agencies will consider the use of existing supplies as well as new supplies through desalination. By taking a more holistic and regional approach to water supply planning, the

²⁴ <https://regionaldesal.squarespace.com/>

agencies hope to make the best use of scarce resources to serve the future needs of the Bay Area. Currently, Valley Water is not including desalination in its projected water supplies.

6.7 Water Exchanges and Transfers

SJW's distribution system has interties with the following retailers: California Water Service Company (Los Altos District), City of San José Municipal Water, City of Santa Clara, City of Sunnyvale, City of Milpitas, and Great Oaks Water. SJW currently has no plans to use these interties for normal system operation as they are exclusively used for potential emergencies. These emergency interties are not reported as a water supply source in this UWMP.

6.8 Future Water Supply Projects

SJW is reliant on Valley Water as the Santa Clara County wholesale water supplier to increase water supply for average, single dry, and multiple dry year conditions. Valley Water has indicated to SJW that they are in the process of planning, designing and constructing a number of projects and programs that will increase water supply as summarized in Table 6-7. Additional details are also in Valley Water's UWMP, Water Supply Master Plan 2040 (WSMP)²⁵ and latest Monitoring and Assessment Program (MAP) report²⁶ for 2020. MAP reports are annual updates to the WSMP.

Valley Water has several surface water reservoirs that are operating at restricted capacity due to seismic stability concerns. Thus, Valley Water has some dam improvement and seismic retrofit projects planned for its Almaden, Anderson, Calero, and Guadalupe reservoirs, to restore these reservoirs to their full operating capacities.

Consistent with Executive Order N-10-19, in early 2019, the State announced a new single tunnel project, which proposed a set of new diversion intakes along the Sacramento River in the north Delta for the SWP. In 2019, DWR initiated planning and environmental review for a single tunnel Delta Conveyance Project (DCP) to protect the reliability of SWP supplies from the effects of climate change and seismic events, among other risks. DWR's current schedule for the DCP environmental planning and permitting extends through the end of 2024. DCP will potentially be operational in 2040 following extensive planning, permitting and construction. Since the DCP is still in its early planning phase and costs and yields have not been determined, it is included as a potential future water supply project in Valley Water's UWMP, but was not included in Valley Water's projected water supply quantities.

Valley Water has a proposed project for the expansion of Pacheco Reservoir in southern Santa Clara County. Pacheco Reservoir would act as a surface bank for Valley Water's existing supplies and diversify its reserve storage by increasing the volume of locally banked reserves. In addition, by increasing locally available storage, Valley Water may be better positioned to respond to future water supply emergencies. The supply increase associated with this reservoir is to be determined and depends on imported water assumptions, demands, permit requirements, and operational requirements.

²⁵ <https://www.valleywater.org/your-water/water-supply-planning/your-water/water-supply-planning/water-supply-master-plan>

²⁶ https://www.valleywater.org/sites/default/files/MAP_Report_10-6-2020_withBaselineDroughtFigure.pdf

Valley Water is working with the cities of San José, Santa Clara, and Palo Alto on a location for a regional Advanced Water Purification Facility at the SVAWPC. The regional facility, to be located in either San José or Palo Alto, would produce up to 11,000 AF/year of potable reuse supply by 2028 to replenish groundwater. The amount of increase in water supply shown in Table 6-7 assumes an 11,000 AF/year production capacity with 80% efficiency.

Valley Water’s Transfer Bethany Pipeline project would optimize the use of existing supplies and increase operational flexibility by enabling Valley Water to move water from Contra Costa Water District’s intakes in the Delta to Valley Water’s system without relying on south-of-Delta CVP and SWP pumps.

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.				
Chapter 6 Section 8	Provide page location of narrative in the UWMP				
Name of Future Projects or Programs	Joint Project with other suppliers?		Planned Implementation Year	Planned for Use in Year Type	Expected Increase in Water Supply to Supplier (MG/year)
	Yes/No	If Yes, Supplier Name			
Dam Improvements / Seismic Retrofits	Yes	Valley Water	2030-2035	All Year Types	5,680
Delta Conveyance Project	Yes	Valley Water	2040	All Year Types	To be determined
Pacheco Reservoir Expansion	Yes	Valley Water	2035	All Year Types	-
Potable Reuse Program	Yes	Valley Water	2028	All Year Types	2,930
Transfer Bethany Pipeline	Yes	Valley Water	2025	All Year Types	330
NOTES: Valley Water as the wholesale water provider in Santa Clara County has identified the above water supply projects in their draft UWMP. These projects will improve water supply within SJW's service area. Note that Valley Water uses units of AF in their UWMP while SJW uses units of MG in this table and throughout this UWMP.					

6.9 Summary of Existing and Planned Sources of Water

SJW’s historic and projected volumes of water by source of supply are presented in Table 6-8, Table 6-9, and Figure 6-4. SJW’s current sources of supply (purchased water from Valley Water, groundwater from the Santa Clara Subbasin, surface water from local watersheds, and recycled water from SBWR) will continue to be important sources of supply to meet future demands. Future purchased water amounts from Valley Water will be dependent on agreed-upon delivery schedules between SJW and Valley Water.

Subsequently, groundwater supplies will depend on purchased water amounts, surface water supply availability (heavily dependent on hydrologic conditions), and the remaining amount of supply needed to meet SJW's potable demands. Available recycled water supplies to meet projected recycled water demands will be based on SJW's ability to construct new recycled water pipelines and reach an agreement with SBWR for additional recycled water supplies.

For projected demands, surface water supply volume is assumed to hold constant at the 10-year historical average as SJW's water rights and the watersheds supplying the water treatment plants are not expected to change. Remaining potable demands are made up by purchased water and groundwater, based on the 10-year historical average of distribution between these two sources of supply. Projected recycled water supplies are based on projected recycled water demands.

Table 6-8 Retail: Water Supplies — Actual				
Water Supply	Additional Detail on Water Supply	2020		
		Actual Volume (MG)	Water Quality	Total Right or Safe Yield (optional)
Purchased or Imported Water		20,949	Drinking Water	
Groundwater (not desalinated)		17,360	Drinking Water	
Surface Water (not desalinated)		1,276	Drinking Water	
Surface Water (not desalinated)		7	Other Non-Potable Water	
Recycled Water		798	Recycled Water	
Total		40,390		0

Table 6-9 Retail: Water Supplies — Projected						
Water Supply	Additional Detail on Water Supply	Projected Water Supply				
		2025	2030	2035	2040	2045
Purchased or Imported Water		25,025	24,997	25,104	25,424	25,702
Groundwater		15,844	15,826	15,894	16,097	16,272
Surface Water	Potable Water	2,435	2,435	2,435	2,435	2,435
Surface Water	Raw Water	7	7	7	7	7
Recycled Water		890	1,010	1,189	1,193	1,189
Total		44,201	44,275	44,629	45,156	45,605
NOTES: Volumes are in MG. 2040 use accounts for leap year. Projected surface water supply volume held constant at the 10-year production average (2011-2020). Remaining potable demands made up by purchased water and groundwater, based on the 10-year historical average (2011-2020) of distribution between these two sources of supply. Projected recycled water supplies are based on projected recycled water demands.						

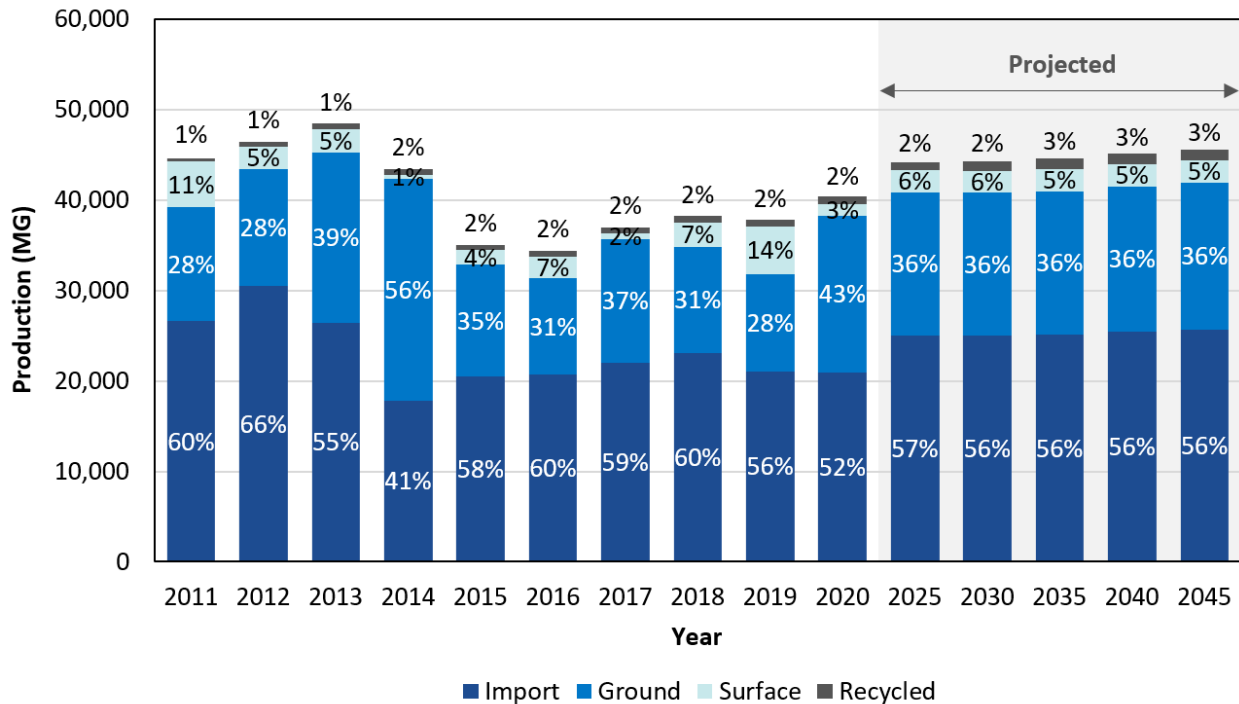


Figure 6-4. Historic and Projected Sources of Supply

6.10 Reduced Delta Reliance

Through SJW’s water wholesaler, Valley Water, SJW receives imported water supplies from the Delta through the SWP and CVP. Valley Water’s complex water supply and management system is based on the conjunctive management of groundwater and surface water (both local and imported). Therefore, it is difficult to demonstrate reduced Delta reliance at a retailer level, for the following reasons:

- Valley Water uses water from the SWP, CVP, and local watershed runoff to meet groundwater recharge and water treatment plant needs, which in turn produce water for use by retailers and other users. 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 manages most of the water conservation programs for Santa Clara County with the support of retailers. Retailers support the conservation programs through water rates and cost share agreements.
- Valley Water and local retailers have recycled water goals for the future but the projected future split between potable and non-potable is not yet determined. Potable reuse would be managed by Valley Water and either directly augment groundwater or treated surface water. In both instances, it would be blended with several other sources before being used by retailers so it would be infeasible to determine the proportion of potable recycled water going to each retailer compared to Delta supplies.

- Valley Water projects an increased use of supplies captured locally, which can contribute to reduced reliance on the Delta. However, given Valley Water’s conjunctive water management, these reductions cannot be allocated to individual retailers.

Valley Water, with the support of all retailers including SJW, has made significant investments²⁷ in demand management and local supplies to reduce Santa Clara County’s and thus SJW’s reliance on the Delta. These investments include:

- Conservation measures
- Recycled water
- Stormwater capture
- Dam improvements/seismic retrofits of local reservoirs

Additional information on Valley Water’s, and by extension, SJW’s, reduced reliance on the Delta can be found in Appendix A.

6.11 Energy Use

New to 2020 UWMPs, water suppliers must include information that could be used to calculate the energy intensity of their water service. This includes estimates for amount of energy consumed and volume of water produced in different water processes (extraction/diversion, placement in storage, conveyance, treatment, and distribution). Using the “Table O1-A” optional submittal table provided by DWR, the energy intensity for SJW’s water service is estimated to be 1,031 kilowatt hours (kWh) per MG of water entering the distribution system²⁸, for the calendar year 2020 reporting period. Details on the energy intensity calculations can be found in Appendix F. The energy intensity calculations do not include energy consumption for other upstream processes that are not managed by SJW, such as conveyance of imported water from the Delta to Valley Water’s water system. Energy consumption associated with recycled water supplies is not considered, as SJW’s recycled water infrastructure only consists of pipelines that do not have associated energy consumption.

²⁷ Details on these investments are provided in Appendix H of Valley Water’s 2020 UWMP.

²⁸ Energy intensity in DWR’s “Table O1-A” submittal table is calculated by dividing the volume of water entering the distribution system by the energy consumed for all water management processes (extraction and diversion, placement into storage, conveyance, treatment, and distribution).

Chapter 7

Water Supply Reliability and Drought Risk Assessment

This chapter identifies constraints on SJW's water sources, compares expected water supply with projected water use under average year, single dry year, and five consecutive dry year conditions, and presents a Drought Risk Assessment (DRA) and assessment of water supply reliability.

Constraints on SJW's sources of supply include climate change, reductions in imported water supplies from the Delta, threats to delivery infrastructure, groundwater basin overdraft, water quality concerns, and increased environmental regulations that may limit supply availability. As Valley Water provides or manages the majority of SJW's water supplies, SJW used information provided by Valley Water in their draft UWMP to evaluate the reliability of SJW's water supplies. According to Valley Water's draft UWMP, Valley Water will have sufficient supplies to meet SJW's and other retailers' demands through 2045 under average year, single dry year, and five consecutive dry year conditions. Valley Water's DRA for a drought that lasts five consecutive years similarly indicate that Valley Water will have sufficient supplies to meet its retailers' demands. These analyses account for identified constraints on sources of supply, upcoming projects that will increase supplies or reliability of supplies, and water conservation programs that will reduce future demands.

7.1 Constraints on Water Sources

SJW has four sources of water supply: purchased water from Valley Water, groundwater, local surface water, recycled water. These sources of supply are constrained in one or more ways, driven by hydrologic conditions, water quality, and legal or environmental restrictions. Additionally, there is potential for interruption of supply caused by catastrophic events as discussed in Chapter 8.

7.1.1 Purchased Water Supply Reliability

SJW relies on Valley Water for purchased water supplies, which make up over half of SJW's total water supplies. Constraints to purchased water supplies from Valley Water include climate change impacts, reductions in imported water supplies, and threats to infrastructure, as detailed below.

- **Climate Change** – Climate change is anticipated to result in warming temperatures, shrinking snowpack, increasing weather extremes, and prolonged droughts. Valley Water's water supply vulnerabilities to climate change include decreases in the quantity of Delta-conveyed imported water supplies, decreases in the ability to capture and use local surface water supplies due to shifts in the timing and intensity of rainfall and runoff, increases in irrigation and cooling water demands, decreases in water quality, and increases in the severity and duration of droughts. Potential effects of climate change on Delta-conveyed imported water supply availability have been incorporated into Valley Water's UWMP water supply projections. Valley Water is still evaluating impacts of climate change to local supplies and those analyses are not included in their UWMP. Valley Water's demand model includes temperature and precipitation as forecasting variables and can simulate various climate change scenarios. Valley Water will continue to

monitor the science of climate change and revise its planning assumptions as more climate studies and information become available.

- **Reductions in Imported Water Supplies** – Valley Water’s SWP and CVP water supplies are also subject to a number of additional constraints including regulatory requirements to protect fisheries and water quality in the Delta, and conveyance limitations. Valley Water is anticipating additional future regulations that will result in greater reductions in imported water allocations than currently provided by DWR in their Delivery Capability Report 2019 (discussed in Section 7.2.1). Delta-conveyed supplies are also at risk from Delta levee failures due to seismic threats and flooding, sea level rise and climate change, declining populations of protected fish species, and water quality variations (including algal blooms). Many water quality variations are addressed, by blending sources and/or switching sources to Valley Water’s three water treatment plants. Algae and disinfection byproduct precursors have been especially challenging during recent drought conditions. To address at least some of these constraints, Valley Water continues to evaluate the costs and benefits of participating in the DCP relative to other water supply options such as developing additional local supplies, optimizing Valley Water’s existing water system, securing additional out-of-area water supplies, and expanding water conservation programs.
- **Threats to Infrastructure** – Valley Water’s imported supply infrastructure must travel large distances to reach turnouts. As California is a seismically active state, infrastructure could be damaged and the result would be a disruption to water supply availability. California’s water supply infrastructure is also potentially a target for acts of terrorism.

7.1.2 Groundwater Supply Reliability

Groundwater supplies are often a reliable supply during normal and short-term drought conditions because supplies are local and large aquifer storage capacity means that groundwater supplies will still be available when surface flows become limited. However, groundwater supply availability can become threatened when overdraft occurs and when recharge and inflow decrease. Water quality is another potential constraint of this source of supply. Threats to groundwater supplies are detailed below.

- **Overdraft** – Under extended supply pressures, groundwater basins can enter overdraft conditions, which can have a series of consequences including land subsidence. Threat of overdraft conditions were witnessed in the recent 2012-2016 drought when groundwater levels declined. However, groundwater levels in the Santa Clara Subbasin quickly recovered after the drought due to Valley Water’s proactive response and comprehensive water management activities. Valley Water monitors groundwater levels at wells throughout Santa Clara County, has groundwater recharge programs to maintain aquifer storage, and manages the aquifers to avoid overdraft conditions.
- **Climate Change** – Climate change could increase the potential for overdraft by increasing demand, reducing other sources of supply, and reducing natural recharge and inflows from surface water and precipitation.
- **Regional Growth** – Population growth could increase demands on groundwater supplies, potentially creating risk of overdraft. Regional growth could also increase the amount of

contaminants entering groundwater basins as a result of increased urban runoff or industrial or other activities. Growth can also impact recharge areas by expanding impervious surfaces into areas that would otherwise represent entry points for surface water recharging local aquifers.

- **Aging Infrastructure and High Land Costs** – In 2020, SJW prepared a Groundwater Well Asset Management Plan (GWAMP). Objectives of the GWAMP included evaluating risks associated with existing wells, prioritizing wells for renewal, developing a sustainable rate of replacement for wells, presenting mitigation strategies for water quality issues, developing a 10-year Capital Improvement Plan, and conducting a well siting survey for new well locations. Findings from the GWAMP showed that SJW’s groundwater well system is vulnerable due to the age of the well infrastructure. Two-thirds of the wells are 50 years or older and were installed with low carbon steel casing using a cable tool drilling method. A low carbon steel casing is susceptible to corrosion and damage in the event of an earthquake. Furthermore, many of SJW’s older cable tool wells were installed without sanitary seals as newer wells are, and as such, are more vulnerable to acting as conduits for downward migration of surface contaminants into the aquifer. Space for replacement wells at SJW’s existing groundwater stations is limited, and thus, the majority of future wells will need to be located on new properties. However, favorable sites are limited, as they must meet certain production yield and water quality requirements. Furthermore, land prices in the Bay Area are high and present another challenge for SJW to address its aging well infrastructure.
- **Water Quality** – The presence of PFAS in groundwater supplies is prompting interest and concern nationwide. Out of an abundance of caution, SJW has been proactively notifying customers and removing wells from service where PFAS has been detected above the State-defined Notification Levels. SJW is in the process of studying its options for removing PFAS. In addition, because SJW depends on multiple sources of supply that use different disinfectants, maintaining a stable disinfectant residual is problematic when system operations require the blending of chlorinated water with chloraminated water to meet demands. Blending sources, depending on each source’s volume and residual concentration, can result in the loss or significant decrease in disinfectant residual levels. To ensure that disinfectant residuals are maintained and that groundwater can continue to be used in the distribution system, SJW is planning to install chloramination systems at its groundwater stations over the next 10 years.

7.1.3 Surface Water Supply Reliability

Local surface supplies are highly variable depending on hydrologic conditions. In years of limited local surface water supplies, SJW relies more heavily on groundwater. Threats to local surface water supplies are detailed below.

- **Climate Change** – SJW’s local surface water supplies are subject to the same climate change impacts as Delta-conveyed supplies and Valley Water’s local surface water supplies, which can result in decrease surface water supplies. During heavy rain events, the quantity of surface water that can be conveyed and treated may be limited by the raw water system hydraulics, high turbidity levels, and WTP capacity. Increased weather extremes and changing precipitation patterns as a result of climate change may prevent surface water supplies from being fully utilized

during heavy rain events, and may result in lower surface water supplies during other times of the year. Fluctuations in the availability of surface supplies and possible impacts of climate change have already been observed in SJW's historical surface water production, as shown in Figure 7-1. Greater variability in the availability of surface water supplies from climate change are likely to occur in the future. To allow surface water to be used during as much of the year as possible, SJW stores water in its Lake Elsmar and Lake Ranch/McKenzie in the wetter months and releases flow downstream to be diverted to the WTPs in the drier months. However, storage and releases from these reservoirs are limited by hydrologic conditions and environmental regulations.

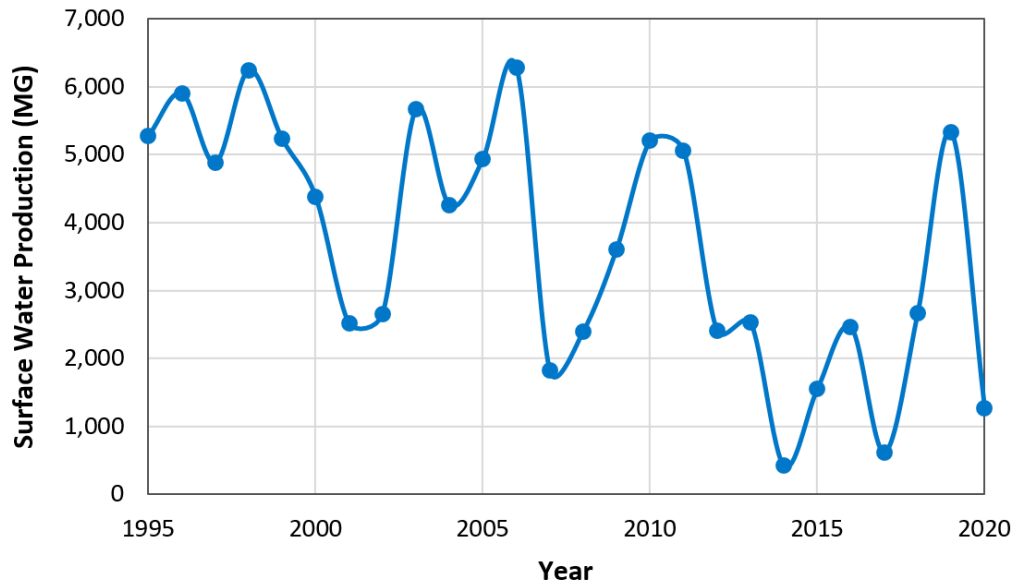


Figure 7-1. Historical Surface Water Production²⁹

- **Environmental Regulations** – SJW has bypass flow requirements at its surface water reservoirs and intakes. These requirements establish flow rates that must be released past diversion points to preserve downstream habitat. SJW also maintains minimum levels in reservoirs for habitat preservation. These environmental regulations limit the amount of surface water that SJW is able to divert for water supply. SJW is currently coordinating with the California Department of Fish and Wildlife to finalize interim bypass flow requirements currently in place at SJW's intakes. The final set of bypass flow requirements will not be established until mid-2022 and may have some impact on future available surface water supplies.
- **Water Quality** – SJW owns approximately 6,000 acres of land in the watersheds and manages these watershed lands to protect water supplies. Contamination of surface water supplies from upstream activities (animal grazing, residential septic systems, stormwater runoff) is a potential threat, although a low one as there is limited development in the watershed. To mitigate these threats, SJW conducts a Watershed Sanitary Survey every five years that examines potential sources of contaminants in the watersheds draining into reservoirs and includes

²⁹ Montevina WTP was offline for upgrades for parts of 2015-2017, which also contributed to lower surface water production in those years.

recommendations for managing these impacts. SJW also regularly collects water quality data on the Los Gatos and Saratoga creeks and monitors Title 22 constituents and additional constituents.

- **Aging Infrastructure** – Some of SJW’s raw water infrastructure was constructed in the late 1800s or early 1900s and is in need of renewal to ensure reliability of surface water supplies. To address this aging infrastructure, following final determination of SJW’s bypass flow requirements, SJW is planning to conduct a Raw Water Master Plan that will provide a long-term asset management plan for its raw water infrastructure.

7.1.4 Recycled Water Supply Reliability

Constraints on recycled water supplies are infrastructure-related, as wastewater supplies to produce recycled water supplies are otherwise sufficient to meet projected non-potable demands in Santa Clara County based on Valley Water’s draft UWMP. SBWR has a Strategic Master Plan³⁰ last updated in 2014 that was prepared in collaboration with Valley Water and other recycled water retailers, including SJW. The Strategic Master Plan contains an assessment on the feasibility of recycled water as a reliable, sustainable water supply for northern Santa Clara County over a 20-year planning horizon. Continued coordination between SBWR, Valley Water, and recycled water retailers in the area would be needed to ensure that recycled water infrastructure is adequate to meet future recycled water demands. As multiple agencies benefit from the SBWR system, expansion of this recycled water infrastructure would be dependent on agreed-upon water supply goals, projects, capital investments, and cost-sharing structures. SJW would need a new contract amendment with SBWR to secure supply allocations for SJW’s new recycled water main alignments.

7.2 Reliability by Type of Water Year

As Valley Water provides or manages the majority of SJW’s water supplies, SJW used information provided by Valley Water in their draft UWMP for this Water Supply Reliability analysis. According to Valley Water’s draft UWMP, Valley Water will have sufficient supplies to meet SJW’s and other retailers’ demands through 2045 under average year, single dry year, and five consecutive dry year conditions. Valley Water’s DRA for a drought that lasts five consecutive years similarly indicate that Valley Water will have sufficient supplies to meet its retailers’ demands. Valley Water’s Water Supply Reliability analysis is conducted for aggregated countywide demands across all retailers and total available supplies. Available supplies are not separated out for each retailer. Caveats to the Water Supply Reliability analyses should be noted, as detailed in Section 7.2.1.

Water supplies presented in Table 7-1 are based on Valley Water’s Water Evaluation And Planning (WEAP) model, which operates on a monthly time-step that simulates the water supply and demand over 94 years, using the historic hydrologic sequence of 1922-2015. According to Valley Water, this model simulates their water supply system comprised of facilities to recharge the county’s groundwater basins, local water 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

³⁰ <https://www.sanjoseca.gov/your-government/environment/water-utilities/recycled-water>

water in Santa Clara County such as imported water from San Francisco Public Utilities Commission, recycled water, and local water developed by other agencies.

Valley Water has identified average, single dry, and multiple dry year periods for water supply reliability planning. According to Valley Water, the basis for these water years is as follows:

- Average Year (1922-2015): Average supply over the 94 years of 1922-2015.
- Single Dry Year (1977): Within the historic hydrological record, this was the single driest year.
- Multiple Dry Years (1988-1992): The 2012-2016 drought was the most recent multiple dry year period that put severe strain on Valley Water's supplies. However, because imported water allocations are not currently available for the 2012-2016 drought from DWR's modeling (discussed in Section 7.2.1), Valley Water used the 1988-1992 drought, another severe multiple year drought in the historic hydrological record.

Valley Water used their modeled demand projections for retailers. Valley Water currently saves approximately 75,000 AF from a 1992 baseline. Valley Water's demand projections include 99,000 AF of water savings by 2030 and an additional 10,000 AF of water conservation between 2030 and 2040 for a total 109,000 AF by 2040. Retailer-provided demand projections and Valley Water's demand projections for retailers were based on different methodologies but were generally in alignment. The two sets of demand projections were within 5% of each other, except for 2045, where the difference was 10%.

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

Year Type	Base Year	Available Supplies if Year Type Repeats	
		☐	Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____
		☐	Quantification of available supplies is provided in this table as either volume only, percent only, or both.
		Volume Available	% of Average Supply
Average Year	1922-2015		100%
Single Dry Year	1977		80%
Consecutive Dry Years 1st Year	1988		78%
Consecutive Dry Years 2nd Year	1989		83%
Consecutive Dry Years 3rd Year	1990		77%
Consecutive Dry Years 4th Year	1991		78%
Consecutive Dry Years 5th Year	1992		77%
NOTES: Base years and available supplies are based on information that SJW received from Valley Water in their draft UWMP.			

7.2.1 Caveats to Water Supply Reliability Analyses

Key assumptions or notes that Valley Water made in their UWMP Water Supply Reliability analysis are as follows:

- Actual availability of each supply during any given year depends on hydrology, groundwater recharge operations and conditions, and other factors.
- The analysis assumes that recommended projects from Valley Water's WSMP³¹ are implemented. These 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).
- Groundwater storage shown assumes groundwater can be drawn down to the severe stage of Valley Water's WSCP. This does not represent a sustainable long-term groundwater condition, but these supplies represent water that may be needed to get through a prolonged drought.
- Imported water allocations to Valley Water from the Bay Area Delta through SWP and CVP were provided by DWR in their Delivery Capability Report 2019 for contractors to use in their UWMPs. However, the Delivery Capability Report 2019 dataset does not include any projected changes to future environmental regulations nor the hydrologic sequence for the most recent and more severe 2012-2016 drought.
- There is uncertainty associated with projected project benefits – some WSMP projects and/or their yields may not be realized as currently expected; Valley Water is still evaluating impacts of climate change to local supplies and those analyses are not included in their UWMP.

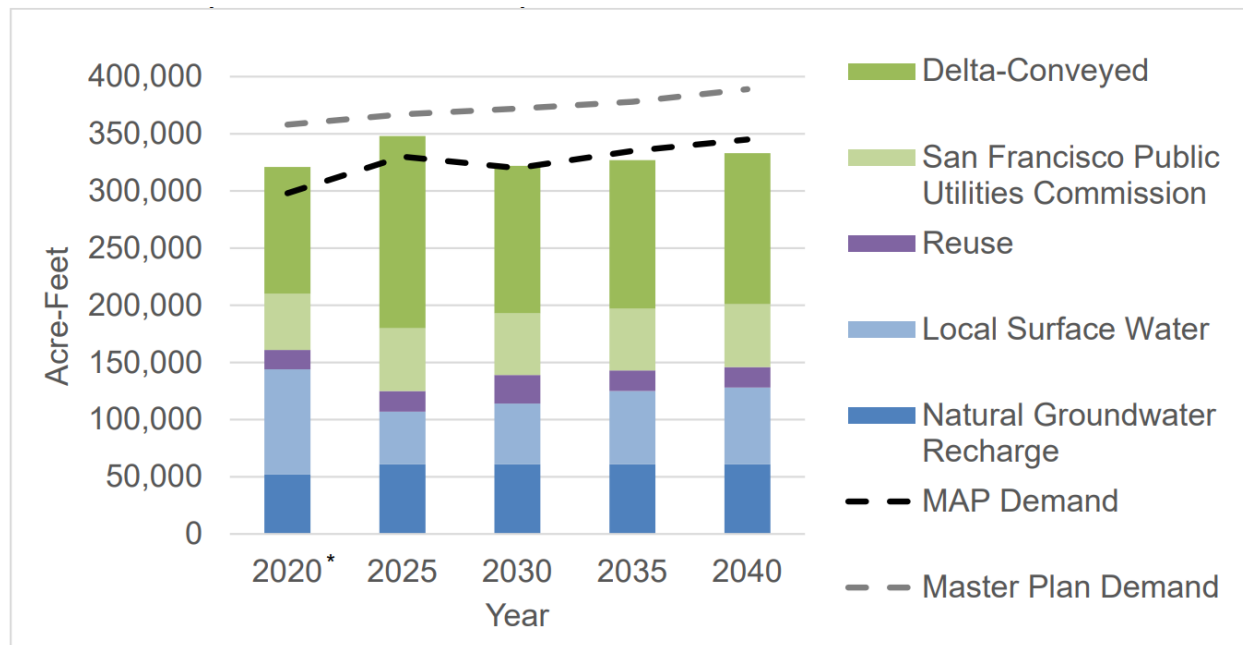
Valley Water has indicated to SJW and other retailers that given these uncertainties and assumptions, the water supply analysis in their draft UWMP should be interpreted as providing a more optimistic picture than what the future may look like in reality. However, Valley Water has assured retailers that they will continue to use their annual MAP process³² to track projects, demands, and imported water projections, and to adjust capital investment strategies as needed. As an example, in their WSMP and latest MAP report, Valley Water uses a dataset with significantly reduced imported supplies from the Delta (20% less imported water than historic average deliveries) and plans to continue using a dataset with similar reductions in imported water deliveries in their next MAP report. To address the expected reduction in imported supplies that was not included in their 2020 UWMP, Valley Water is proposing to invest in their WSMP projects. If some WSMP projects are not implemented or provide less benefits than currently expected and imported supplies are reduced by 25%, then Valley Water expects to have drought shortages of up to 20% in the future. Valley Water is also conservatively planning for investments by considering severe droughts, such as the 2012-2016 drought, will occur in the future. Valley Water is also currently developing a Climate Change Action Plan and a climate study to quantify the impacts of climate change on future water supply reliability.

³¹ <https://www.valleywater.org/your-water/water-supply-planning/water-supply-master-plan>

³² https://www.valleywater.org/sites/default/files/MAP_Report_10-6-2020_withBaselineDroughtFigure.pdf

Valley Water’s 2020 UWMP currently shows supply surpluses in all the supply reliability scenarios, even the multiple dry year and DRA scenarios. However, for perspective, since the 2012-2016 drought, Valley Water has continued a call for voluntary reduction in water use by 20% compared to a 2013 baseline. As of April 27, 2021, Valley Water has increased the voluntary call for conservation from 20% to 25%. Furthermore, for comparison, Valley Water’s 2020 MAP report, which is an update to Valley Water’s WSMP report, shows projected supplies matching projected demands, based on minimum proposed projects and programs necessary to meet Valley Water’s level of service goal. Valley Water’s Board of Directors updated its long-term water supply reliability level of service goal in January 2019, which 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. Future projects and programs in the WSMP and MAP updates were developed in accordance with this policy to minimize the need to call for water use reductions greater than 20%, and to avoid overinvestment in water supply projects and programs.

Supply reliability analyses from Valley Water’s 2020 MAP report are shown in Figure 7-2 through Figure 7-5.³³ Figure 7-2 and Figure 7-3 represent baseline conditions, which assume baseline projects³⁴ are completed. Figure 7-2 shows average supplies used to meet non-drought year demands. Figure 7-3 shows water supplies to meet 2040 demands in an extended drought. According to the report, assuming baseline projects, new investments as outlined in the WSMP will be needed to meet the level of service goal between 2035 and 2040.



*Data for 2020 are actual numbers for 2019 that are published in the Protection and Augmentation of Water Supplies 2020 Report. Years 2025-2040 are modeled values.

Figure 7-2. Average Supplies Used to Meet MAP Demands Assuming Baseline Conditions

³³ All graphs and information are taken from Valley Water’s 2020 MAP report.

³⁴ Valley Water’s baseline projects include dam seismic retrofits, the Rinconada WTP Project, the Vasona Pump Plant Upgrade, and 99,000 AF of water conservation by 2030, relative to a 1992 baseline.

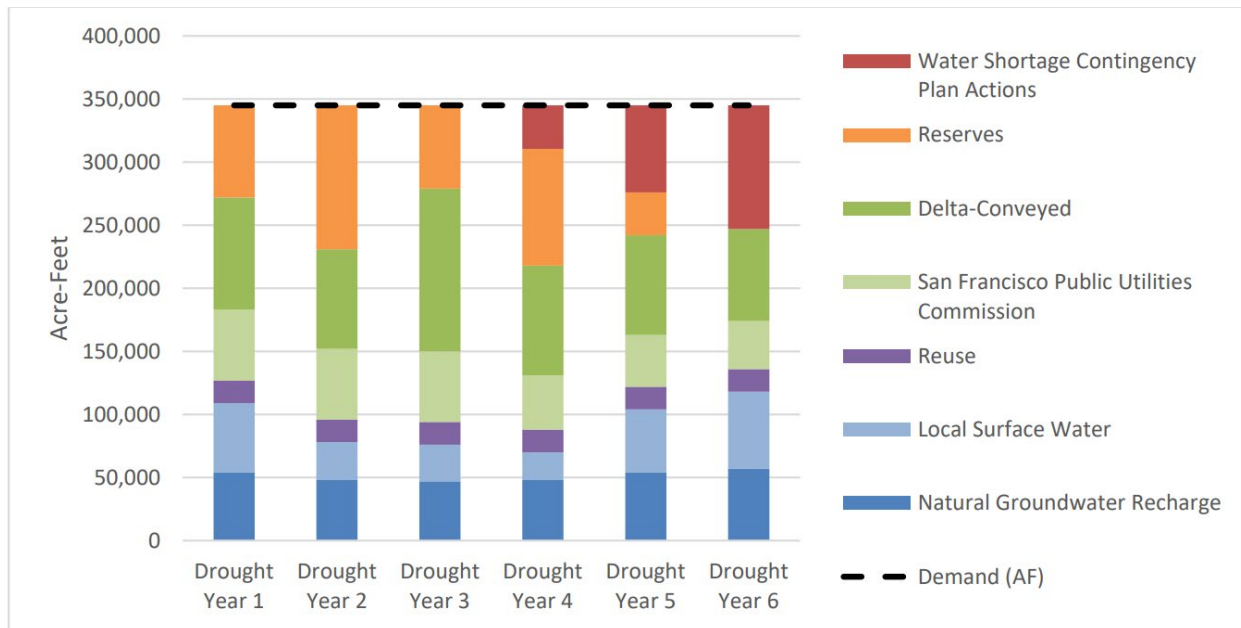
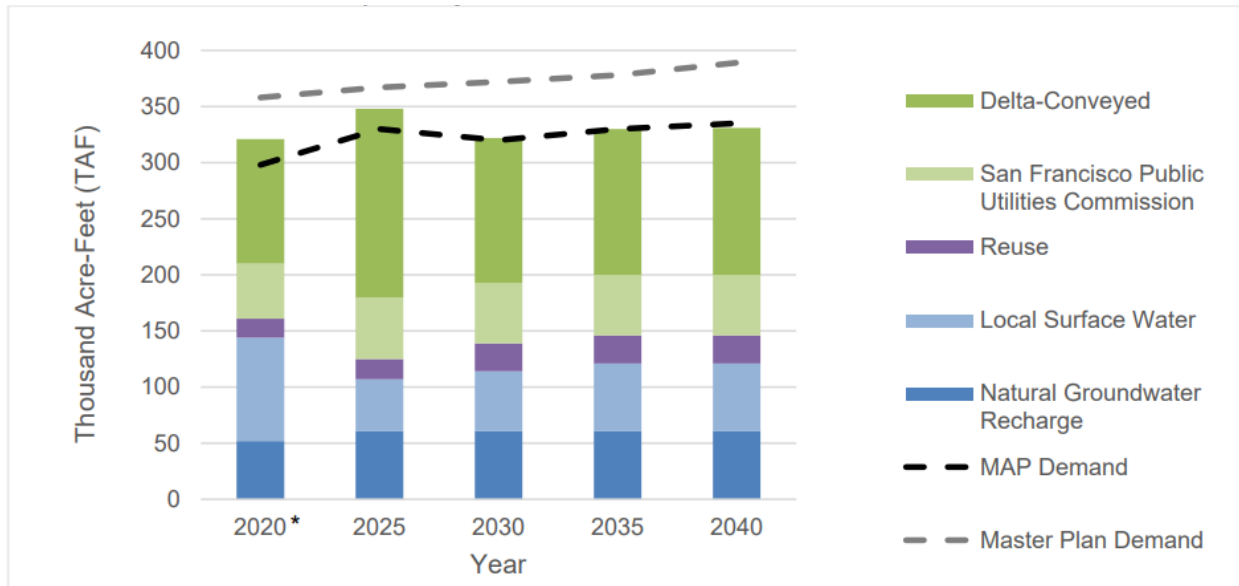


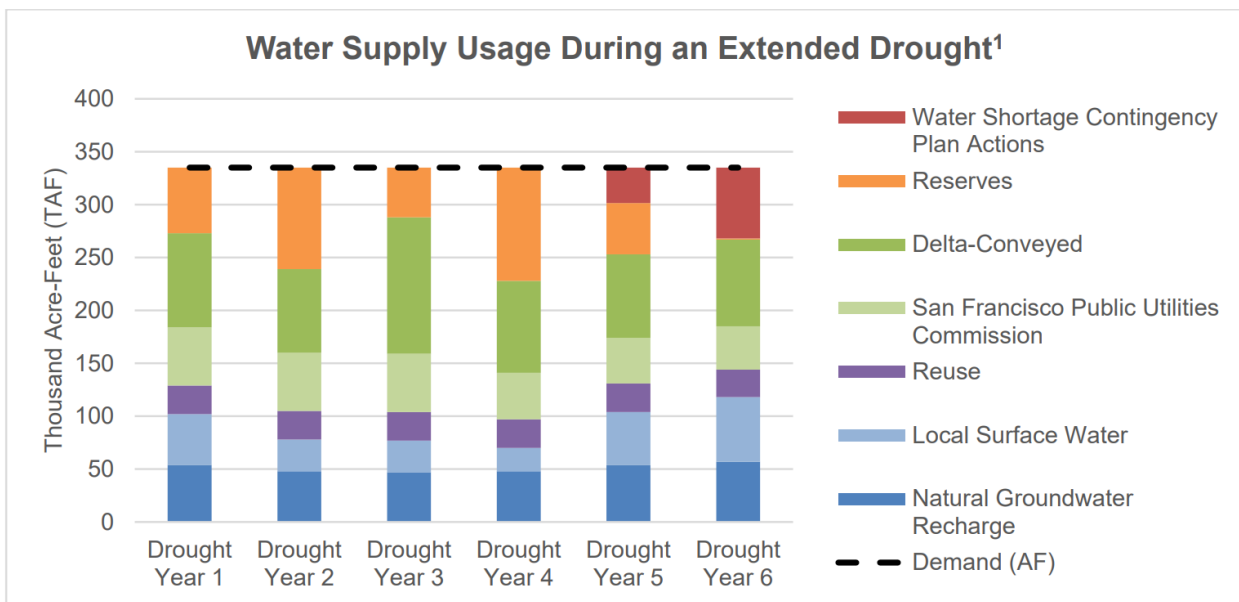
Figure 7-3. 2040 Water Supplies Used During an Extended Drought Assuming Baseline Conditions

Thus, Valley Water evaluated WSMP projects to meet the level of service goal between 2035 and 2040. According to the 2020 MAP report, with the baseline projects, 35,000 AF of additional water conservation, and a 10 MGD potable reuse plant, average supplies will be sufficient to meet non-drought year demands (Figure 7-4). Valley Water’s modeling indicates that Valley Water would only need to call for water use reductions approximately 5% of the time and only during extreme drought conditions. Even in an extended drought, such as the one that occurred from 1987-1992, investing in the baseline projects, 35,000 AF of additional water conservation, and a 10 MGD potable reuse plant would allow Valley Water to meet 100% of demand during most years (Figure 7-5). Valley Water would only need to call for water use reductions under their water shortage contingency plan for year five and six of the extended drought. Valley Water’s modeling showed a call for 10% water use reduction in year five and 20% in year six.



*Data for 2020 are actual numbers for 2019 that are published in the *Protection and Augmentation of Water Supplies 2020 Report*. Years 2025-2040 are modeled values.

Figure 7-4. Average Water Supply Used with the MAP Recommended Projects (water conservation and reuse) Compared to MAP and WSMP Demands



¹The extended drought is based on the historical 1987-1992 drought.

Figure 7-5. Water Supply Used During an Extended Drought Based on 2040 Demands with 35,000 AF of Additional Water Conservation and a 10 MGD Reuse Plant

The latest 2020 MAP analysis is still using the 1987-1992 drought sequence, which was not as severe as the 2012-2016 drought, and does not include climate change impacts. With the 2012-2016 hydrologic sequence and climate change impacts incorporated into future MAP updates, modeling results could potentially show more supply shortfalls, more calls for conservation, or more required investments in

water supply projects. Investment strategies may also need to be adjusted for changes in the timing, feasibility, or anticipated benefits of projects. Given these uncertainties in water supply planning, SJW will continue to participate in discussions with Valley Water and other retailers on proposed water supply projects/programs and water conservation strategies, to ensure reliability of water supplies in the future.

7.2.2 Average Water Year

According to Valley Water, the average water year represents average supply over the hydrologic sequence of 1992-2015. Table 7-2 shows that based on information from Valley Water, SJW anticipates adequate supplies to meet system demand under average year conditions for years 2025 to 2045. Projections are based on supplies and demands described in Chapter 6.

Table 7-2 Retail: Normal Year Supply and Demand Comparison					
	2025	2030	2035	2040	2045
Supply totals	44,201	44,275	44,629	45,156	45,605
Demand totals	44,201	44,275	44,629	45,156	45,605
Difference	0	0	0	0	0
NOTES: Volumes are in MG.					

7.2.3 Single Dry Year

The single driest year in the 94 model years occurred in 1977, based on local hydrology within the 1922-2015 hydrologic sequence. Table 7-3 shows that based on information from Valley Water, SJW anticipates adequate supplies to meet system demand under single dry year conditions for years 2025 to 2045.

Table 7-3 Retail: Single Dry Year Supply and Demand Comparison					
	2025	2030	2035	2040	2045
Supply totals	44,201	44,275	44,629	45,156	45,605
Demand totals	44,201	44,275	44,629	45,156	45,605
Difference	0	0	0	0	0
NOTES: Volumes are in MG.					

7.2.4 Multiple Dry Years

The multiple dry year period used in this analysis assumes a repetition of the hydrology that occurred in 1988 through 1992. Table 7-4 shows that based on information from Valley Water, SJW anticipates adequate supplies to meet system demand under multiple dry year conditions for years 2025 to 2045.

Multi-year droughts present the greatest challenge to Valley Water's water supply reliability. Valley Water's basic water supply strategy to compensate for supply variability is to store excess wet year supplies in the groundwater basin, local reservoirs, San Luis Reservoir, and/or Semitropic Groundwater

Bank, and draw on these reserve supplies during dry years to help meet demands. These reserves, along with existing and planned future projects in the WSMP, help Valley Water meet demands during a prolonged drought. Valley Water’s Board of Directors updated its long-term water supply reliability level of service goal in January 2019. The goal 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. Future projects and programs in the WSMP were developed in accordance with this policy to minimize the need to call for water use reductions greater than 20%. Table 7-4 includes all water supplies currently planned by Valley Water. However, as stated in their 2020 UWMP, there may be a call for up to mandatory 20% conservation during multi-year droughts. Caveats to the Water Supply Reliability analyses should be noted, as detailed in Section 7.2.1.

Table 7-4 Retail: Multiple Dry Years Supply and Demand Comparison						
		2025	2030	2035	2040	2045
First year	Supply totals	44,201	44,275	44,629	45,156	45,605
	Demand totals	44,201	44,275	44,629	45,156	45,605
	Difference	0	0	0	0	0
Second year	Supply totals	44,201	44,275	44,629	45,156	45,605
	Demand totals	44,201	44,275	44,629	45,156	45,605
	Difference	0	0	0	0	0
Third year	Supply totals	44,201	44,275	44,629	45,156	45,605
	Demand totals	44,201	44,275	44,629	45,156	45,605
	Difference	0	0	0	0	0
Fourth year	Supply totals	44,201	44,275	44,629	45,156	45,605
	Demand totals	44,201	44,275	44,629	45,156	45,605
	Difference	0	0	0	0	0
Fifth year	Supply totals	44,201	44,275	44,629	45,156	45,605
	Demand totals	44,201	44,275	44,629	45,156	45,605
	Difference	0	0	0	0	0
NOTES: Volumes are in MG.						

7.3 Drought Risk Assessment

The DRA is conducted to evaluate SJW’s near-term water supply reliability by comparing projected water supplies and demands for a drought period starting in 2021 that lasts five consecutive years. The DRA is intended to guide Demand Management Measures, water supply projects and programs to be included

in the UWMP, and water shortage actions to be included in the WSCP. As Valley Water provides or manages the majority of SJW's water supplies, SJW used information provided by Valley Water in their draft UWMP for this DRA.

According to Valley Water, the DRA considers all of Valley Water's water supply sources, including imported water (SWP and CVP contract water deliveries, banked supplies in Semitropic, sales, transfers, and carryover in San Luis Reservoir, and SFPUC deliveries), local surface water storage, recycled water, and local groundwater. Countywide demands for the next five years is based on the interpolation between estimated 2021 water use and projected 2025 water use. Supply data for 2021 is from Valley Water's annual water supply and demand assessment, which plans water supply operations for the upcoming year and considers a dry water year scenario. The annual water supply and demand assessment procedure is a water balance approach to estimate supply available based on the previous year end-of-year groundwater storage, carryover supplies stored in San Luis reservoir, storage in local reservoir, non-potable recycled water production, and expected SWP and CVP contract allocations. For 2021, estimated supplies were developed using a combination of Valley Water's annual operations model and groundwater model. Estimated supplies were developed assuming critically dry local conditions (90% exceedance) and CVP and SWP allocation estimates. For 2022-2025, estimated supplies under the 1989-1992 hydrologic conditions from Valley Water's WEAP model were used (same model as used for the other supply reliability analyses in Section 7.2).

One differing assumption between the DRA and the other supply reliability analyses in Section 7.2 is that the DRA considers water exchanges and transfers as a source of supply. Valley Water conducts short-term water transfers and exchanges as a part of its routine imported water operations. 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, in their UWMP, Valley Water is not including water transfers and exchanges in the projected water supplies, except in the DRA.

According to the DRA in Valley Water's draft UWMP, Valley Water has sufficient supplies to meet retailer demands for a drought that lasts five consecutive years. Thus, SJW's DRA also shows that sufficient supplies will be available to meet SJW's demands, as shown in Table 7-5. Demands for 2021-2024 are based on linear interpolation between 2020 water use and projected 2025 demands. Caveats to the Water Supply Reliability analyses should be noted, as detailed in Section 7.2.1.

Table 7-5: Five-Year Drought Risk Assessment Tables to Address Water Code Section 10635(b)	
2021	Total
Total Water Use	41,152
Total Supplies	41,152
Surplus/Shortfall w/o WSCP Action	0

Table 7-5: Five-Year Drought Risk Assessment Tables to Address Water Code Section 10635(b)	
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
Total Water Use	41,914
Total Supplies	41,914
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
Total Water Use	42,677
Total Supplies	42,677
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%
2024	Total
Total Water Use	43,439
Total Supplies	43,439
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%
2025	Total
Total Water Use	44,201
Total Supplies	44,201
Surplus/Shortfall w/o WSCP Action	0

Table 7-5: Five-Year Drought Risk Assessment Tables to Address Water Code Section 10635(b)	
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%
NOTES: Volumes are in MG.	

Chapter 8

Water Shortage Contingency Planning

This chapter describes the development, actions, and implementation of San Jose Water's (SJW) Water Shortage Contingency Plan (WSCP).

Section 10632(a) of the California Water Code (CWC) outlines the requirements for the WSCP. The WSCP is required to be submitted to the California Department of Resources (DWR) as part of SJW's 2020 Urban Water Management Plan (UWMP). However, the WSCP is also intended to be a standalone plan that can be amended on a different cycle than the UWMP's five-year update cycle. Thus, this WSCP is written such that it can be understood separately from the UWMP. The WSCP is a detailed proposal for how a water supplier intends to act in the case of an actual water shortage condition. This plan is part of good drought policy even if a supplier's water supply appears to have a low probability of shortage conditions, as it improves preparedness for droughts and other impacts on water supplies.

This WSCP defines five water shortage stages (Normal, Alert, Severe, Critical, and Emergency) to address shortage conditions ranging from 10% to greater than 50% of supply reduction. This WSCP outlines shortage response actions, communication protocols, and compliance and enforcement measures that are enacted at each water shortage stage. The first two shortage stages are voluntary conservation stages, while the remaining stages are mandatory conservation stations. This WSCP also describes the authorities governing implementation of the WSCP, financial consequences and mitigation measures for WSCP activation, monitoring and reporting of WSCP implementation, and procedures for plan refinement, adoption, submittal, and availability.

8.1 Water Supply Reliability Analysis

As SJW's wholesale water supplier, Valley Water provides or manages the majority of SJW's water supplies. Thus, SJW used information received from Valley Water to inform SJW's Water Supply Reliability Analysis. Based on information provided by Valley Water from their draft 2020 UWMP, Valley Water will have sufficient supplies to meet SJW's and other retailers' demands through 2045 under average year, single dry year, and five consecutive dry year conditions, and under a Drought Risk Assessment (DRA) condition for a drought that lasts five consecutive years.

SJW's sources of potable water supply include purchased water from Valley Water, groundwater from the Santa Clara Subbasin (managed by Valley Water), and surface water from local watersheds. SJW's basic water supply strategy is to maximize use of local surface water, use up to the maximum purchased water contract amounts, supplement remaining supply needs with groundwater, and otherwise implement WSCP actions when water supplies are limited and reductions must be made on the demand side. Although SJW's water supply portfolio also includes a small portion of recycled water, this WSCP focuses primarily on potable water supplies. As recycled water is available year-round and is produced from ample wastewater supplies, it is not subject to voluntary and mandatory drought restrictions like potable water supplies.

Various threats to SJW's sources of potable water supply may require SJW to activate its WSCP. Although SJW has contracts with Valley Water on the quantities of purchased water to be delivered, actual water deliveries may vary based on hydrologic variability, interruptions in Valley Water facility operations, and Valley Water's allocations of Delta-conveyed imported water through the Central Valley Project (CVP) and State Water Project (SWP). Groundwater can be a reliable supply because supplies are local and available even when surface flows become limited. However, during drought conditions, groundwater supplies can become threatened by overdraft, and SJW may need to limit groundwater pumping based on guidance from Valley Water on sustainable basin management. Potential threats of contamination in the groundwater basin may also limit SJW's ability to pump groundwater. Lastly, while surface water is locally available and less dependent on actions from other agencies, surface water supplies are highly variable depending on hydrologic conditions and only contribute to a small portion of SJW's water supply portfolio.

8.2 Annual Water Supply and Demand Assessment Procedures

Beginning by July 1, 2022, water suppliers are required to prepare their annual water supply and demand assessment and submit an Annual Water Shortage Assessment Report to DWR. The Annual Water Shortage Assessment Report will be due by July 1 of every year. The Annual Assessment will evaluate the availability of SJW's sources of supply for the current year and one subsequent dry year. DWR is currently developing a guidance document that will recommend practical procedures and analytical methods that may be used, at the supplier's discretion, to comply with the Annual Assessment requirement effectively and efficiently. SJW will follow the DWR guidance as closely as possible.

8.2.1 Sources of Supply

A summary of available sources of supply and their quantities is listed below:

- **Purchased Water** – SJW and Valley Water currently have a three-year treated water contract for fiscal years 2020/2021 – 2022/2023, with contract supplies of 70,723 acre-feet (AF) in 2020/2021, 70,723 AF in 2021/2022, and 71,858 AF in 2022/2023 (23,045 million gallons [MG] in 2020/2021, 23,045 MG in 2021/2022, and 23,415 MG in 2022/2023). Actual amount of water delivered depends on considerations including hydrologic variability, interruptions in Valley Water facility operations, and water quality.
- **Groundwater** – SJW produces approximately 14,500 MG/year of treated groundwater, based on a 10-year average (2011-2020). SJW draws water from the Santa Clara Subbasin, which has an operational storage capacity of 350,000 AF as estimated by Valley Water. Valley Water does not currently have direct control over the amount of groundwater that SJW can extract from the basin. However, Valley Water influences the groundwater amounts pumped by SJW and other water retailers in Santa Clara County, as part of basin management efforts.
- **Surface Water** – SJW produces approximately 2,400 MG/year of treated surface water from local watersheds, based on a 10-year average (2011-2020). Actual surface water supplies are highly variable depending on hydrologic conditions.
- **Recycled Water** – Recycled water allocations are rooted in the original Wholesaler-Retailer agreement and the subsequent first and second contract amendments between South Bay Water Recycling (SBWR) and SJW. These allocations are in turn tied to SJW's Recycled Water Master

Plan, which outlines the capacity associated with each of SJW's recycled water pipeline alignments. Based on the existing alignments and agreements with SBWR, SJW's recycled water allocations are 4,219 AF/year (1,375 MG/year).

8.2.2 Methodology and Data

In its existing practices, SJW regularly coordinates with Valley Water on purchased water allocations and groundwater basin conditions, monitors water production totals and system demands, and evaluates hydrologic conditions and available surface water supplies. Monthly executive water supply reports are prepared, which show monthly and year-to-date water production totals, monthly trends and comparison to historical averages, current Valley Water and SJW surface water reservoir levels, and Santa Clara Subbasin groundwater levels. Such findings inform decision-making processes on whether upcoming supply shortages are determined to be present and if associated shortage response actions will be needed.

In addition, Valley Water projects available water supplies on an annual basis, and such findings inform the availability of purchased water and groundwater supplies to SJW. Valley Water's annual water supply operations planning begins each September for the upcoming year and considers water year scenarios that span from wet to very dry. The projection of water supplies through the end of the year is based on assumed dry conditions (90 percent exceedance), median conditions (50 percent exceedance), and in some cases, critically dry conditions (99 percent exceedance). The planning process considers all of Valley Water's water supply system and sources, current groundwater storage, treated water contracts, local water rights and storage, environmental restrictions, source water quality, planned facility maintenance, imported water carryover, imported water contract terms, stored water in carryover and the Semitropic Bank, and potential water transfers. The planning process is dynamic and Valley Water updates rainfall data, imported water allocations, water supply projections, availability of supplemental supplies, and facility capacities at least monthly to reflect current conditions. As assumptions and projections are updated through the year, Valley Water continues to update its end-of-year groundwater storage projections, which Valley Water uses as an indicator of a potential water supply shortage.

Many of the same considerations and sources of information from SJW's ongoing water supply planning practices and coordination with Valley Water will be used for the Annual Assessment:

- **Purchased Water** – Anticipated purchased water supplies are generally set by the three-year treated water contracts that SJW has with Valley Water. SJW provides Valley Water with a monthly delivery schedule based on the annual contract total, average monthly demands, and average supply availability from other sources. SJW will make changes to anticipated purchased water amounts based on direction received from Valley Water.
- **Groundwater** – As the designated groundwater sustainability agency for the Santa Clara Subbasin, Valley Water may provide guidance on groundwater pumping amounts to retailers, which SJW will take into account. The state of the groundwater basins is reported monthly by Valley Water through a Groundwater Conditions Report and Water Tracker. The Groundwater Conditions Report and Water Tracker contain a description and quantification of available water supplies including local reservoirs, imported water, treated water, recycled water, conserved water, and

groundwater data, such as recent managed recharge, pumping, and storage trends. During abnormally dry years, SJW collaborates with Valley Water's Groundwater Management Unit to provide expanded groundwater level data and monthly pumping projections from each SJW groundwater facility. This information helps inform Valley Water on strategic recharge operations and targeted pumping reductions if subsidence becomes a concern, and in turn, informs guidance on groundwater pumping amounts to SJW.

- **Surface Water** – SJW monitors rainfall, surface water reservoir levels, and streamflow on an ongoing basis. In the spring, SJW's Operations department will complete analysis to determine available surface water supplies for the remainder of year by creating a Release Plan for its Lake Elsman. Beginning in late spring and early summer, creeks supplying SJW's raw water intakes begin to dry up, with the exception of Los Gatos Creek, which can be supplied with releases from Lake Elsman in the upper watershed. The Release Plan evaluates existing levels in Lake Elsman, amount of flow to release to meet environmental compliance requirements, and available flow to be sent to SJW's Montevina Water Treatment Plant over the remainder of the year.
- **Recycled Water** – As recycled water is available year-round and is produced from ample wastewater supplies, it is not subject to voluntary and mandatory drought restrictions as other potable water supplies are, does not have the same supply constraints, and is mostly for non-essential irrigation use. However, all of SJW's recycled water customers are metered and SJW will coordinate with SBWR to examine recycled water supplies and demands as needed for this Annual Assessment.
- **System Demands** – Monthly water production data from the Operations department will be analyzed for trends and comparison to historical averages to determine system demand projections for the current year and one subsequent dry year. Anticipated water demands will also be adjusted based on considerations such as upcoming conservation measures (SB 606 and AB 1668), weather, economic factors, or land use changes.
- **Infrastructure Considerations** – SJW will evaluate the capacity of available infrastructure for producing and delivering supplies, considering infrastructure that may be out-of-service or scheduled for maintenance/upgrades, as well as infrastructure that may be coming online. SJW tracks on an ongoing basis which groundwater wells are on standby and will evaluate that groundwater well infrastructure is available to provide adequate supplies. Similarly, SJW will also evaluate that surface water infrastructure (intakes, reservoirs, water treatment plants) are available for producing and delivering supplies. In coordination with Valley Water, SJW will adjust its supply portfolio based on planned maintenance activities at Valley Water's water treatment plants that may temporarily limit purchased water supplies.

8.2.3 Decision-Making Process

SJW's Annual Water Shortage Assessment (Annual Assessment) will be led by the Capital Planning and Asset Management group, with support from the Operations and Field Service departments. Results from the assessment will be presented to SJW's Senior Leadership Team, and escalated to SJW's Executive Leadership Team if potential upcoming supply shortages are determined to be present and if activation of any WSCP shortage stages will be needed. Final sign-off on the Annual Assessment will be provided by SJW's President or other Vice President-level staff.

The anticipated timeline for SJW's Annual Assessment process is summarized below:

- March: SJW completes analysis to determine available surface water supplies for the remainder of the year.
- April: SJW conducts Annual Assessment.
- May: Annual Assessment is routed internally for review and final approval.
- July 1st: Annual Assessment is submitted to DWR.

8.3 Six Standard Water Shortage Stages

SJW uses five water shortage stages in its WSCP to categorize water supply shortage. SJW follows voluntary or mandatory conservation targets set by Valley Water or other authorized government entities. SJW's water shortage stages were set based on SJW's experience with calls to conservation during the drought of 2012-2016. The drought saw increasing urgency to reduce water consumption in Santa Clara County. Some of the history is as follows:

- February 2014 – Valley Water's Board of Directors approved a resolution setting a countywide water use reduction target equal to 20% of 2013 use through December 31, 2014, and recommended that retail water agencies, local municipalities and the County of Santa Clara implement mandatory measures as needed to achieve the 20% water use reduction target.
- March 2015 – As drought conditions worsened, Valley Water called for 30% water use reductions, and recommended that retail water agencies, municipalities, and the County implement mandatory measures as needed to accomplish that target, including a two day per week outdoor irrigation schedule. Both City of San José and SJW echoed the call for a 30% reduction in use and promoted the two day per week irrigation schedule along with special drought rates.
- April 1, 2015 – the Governor directed the State Water Resources Control Board to implement mandatory water reductions in urban areas to reduce potable urban water use by 25% statewide. Then, as required by the California Public Utilities Commission (CPUC), SJW filed its revised Water Shortage Contingency Plan on May 11, 2015. Customers were publicly noticed about the filing and the public meeting that occurred on May 28, 2015. The CPUC approved SJW's plan effective June 15, 2015. Due to favorable historical gallons per capita per day (gpcd) use, SJW was given a mandatory reduction level of 20%.

A crosswalk showing the relationship between SJW's five water shortage stages and DWR's six standard water shortage stages is provided in Figure 8-1. Table 8-1 provides a summary of the shortage response actions for each water shortage stage.

SJW WSCP Water Shortage Levels			DWR Standard Water Shortage Levels	
Stage	Percent Supply Reduction	Water Supply Condition	Stage	DWR Six Standard Water Shortage Levels
1	Up to 10%	Normal	1	Up to 10%
2	Up to 20%	Alert	2	10 to 20%
3	Up to 30%	Severe	3	20 to 30%
4	Up to 40%	Critical	4	30 to 40%
5	Greater than 40%	Emergency	5	40 to 50%
			6	Greater than 50%

Figure 8-1 Crosswalk between SJW's Water Shortage Stages and DWR's Standard Stages

Table 8-1 Water Shortage Contingency Plan Levels		
Shortage Level	Percent Shortage Range	Shortage Response Actions
1	Up to 10%	This voluntary conservation stage will be called by SJW when customers are asked to meet conservation targets. Outdoor irrigation limits may be declared specifying the number of days per week irrigation will be allowed. Certain non-essential or unauthorized uses of water will be declared wasteful uses of water.
2	Up to 20%	This voluntary conservation stage will be called if SJW determines that further measures are needed to reduce water consumption. Water reduction needed. In addition to the non-essential or unauthorized uses of water listed in Stage 1, further restrictions may be imposed, including limiting watering days to 3 days per week.
3	Up to 30%	This mandatory conservation stage will be called by SJW when severe water reductions are needed. In addition to the non-essential or unauthorized uses of water listed in previous stages, more restrictions will be enacted, including limiting watering days to 2 days per week. Drought rate structures and surcharges may go into effect if required and authorized by the CPUC.
4	Up to 40%	This mandatory conservation stage will be called by SJW when critical water reductions are needed. In addition to the non-essential or unauthorized uses of water listed in previous stages, more restrictions will be enacted, including limiting watering days to 1 day per week.
5	Up to 50%	This mandatory conservation stage will be called by SJW when emergency water reductions are needed. In addition to the non-essential or unauthorized uses of water listed in previous stages, more restrictions will be enacted, including prohibiting all watering days. Flow restrictor devices may be installed to ensure compliance.

Table 8-1 Water Shortage Contingency Plan Levels

6	>50%	DWR's Stage 6 is the same as SJW's Stage 5. This mandatory conservation stage will be called by SJW when emergency water reductions are needed. In addition to the non-essential or unauthorized uses of water listed in previous stages, more restrictions will be enacted, including prohibiting all watering days. Flow restrictor devices may be installed to ensure compliance.
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SJW previously used four water shortage stages in its 2015 WSCP, which was filed with the CPUC in the form of two documents called *Schedule 14.1 Water Shortage Contingency Plan with Staged Mandatory Reductions and Drought Surcharges* and *Rule 14.1 Water Shortage Contingency Plan*. SJW's Schedule 14.1 and Rule 14.1 documents, which shows the four stages that were authorized by the CPUC, can be found in Appendix G and Appendix H. SJW anticipates working with the CPUC to modify its Rule 14.1 to align with the revised five stages. SJW's Schedule 14.1 is currently dormant until triggered by specific conditions, such as declaration of a water shortage emergency by a water wholesaler, government agency, or the governing body of a distributor of a public water supply. Schedule 14.1 cannot be activated until SJW receives authorization to do so from the CPUC (see Section 8.7.1).

8.4 Shortage Response Actions

SJW's WSCP includes two key categories of actions meant to reduce water use:

- Staged implementation of water restrictions and prohibitions on non-essential water uses
- Implementation of an allocation and drought surcharge program for both residential customers and for dedicated irrigation accounts

8.4.1 Demand Reduction

During a drought, SJW works with Valley Water and other retail agencies in the County to collaborate on additional public outreach strategies and water conservation measures. For example, in 2015 during the drought, SJW and the other retailers in Santa Clara County worked with Valley Water on a two day per week outdoor irrigation limitation. Additionally, several consumption reduction methods used by SJW are described in Table 8-2.

Table 8-2: Demand Reduction Actions

Shortage Level	Demand Reduction Actions	How Much Is This Going to Reduce the Shortage Gap?	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
1	Landscape - Other landscape restriction or prohibition	2%	No irrigation during and up to 48 hours after measurable rainfall	No
1	Landscape - Limit landscape irrigation to specific times	2%	No irrigation between 10:00 a.m. and 8:00 p.m.	No

Table 8-2: Demand Reduction Actions

Shortage Level	Demand Reduction Actions	How Much Is This Going to Reduce the Shortage Gap?	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
1	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	2%	Must fix leaks within 5 days of notice	No
1	Other - Require automatic shut of hoses	0.50%	No washing vehicles without a shut off device	No
1	CII - Other CII restriction or prohibition	1%	Commercial car washes must recycle their wash water	No
1	CII - Restaurants may only serve water upon request	0.25%		No
1	CII - Lodging establishment must offer opt out of linen service	0.25%		No
1	Water Features - Restrict water use for decorative water features, such as fountains	1%	No use of potable water in a water feature that does not recirculate the water	No
1	Other	1%	Other restrictions as prescribed by the CPUC or SJW	No
2	Landscape - Limit landscape irrigation to specific days	4%	Limit irrigation to 3 days per week	Yes
2	Other - Prohibit use of potable water for washing hard surfaces	2%	No runoff allowed from the washing of hardscape, buildings, structures, etc.	Yes
2	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	2%	Must fix leaks within 72 hours of notice	Yes
2	Other	2%	Other restrictions as prescribed by the CPUC or SJW	Yes
3	Landscape - Limit landscape irrigation to specific days	5%	Limit irrigation to 2 days per week	Yes
3	Other water feature or swimming pool restriction	2%	No use of potable water for filling of residential pools/spas more than one foot or initial filling (except	Yes

Table 8-2: Demand Reduction Actions

Shortage Level	Demand Reduction Actions	How Much Is This Going to Reduce the Shortage Gap?	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
			when pools are drained for repairs)	
3	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	1%		Yes
3	Other - Prohibit use of potable water for construction and dust control	1%		Yes
3	Other	1%	Other restrictions as prescribed by the CPUC or SJW	Yes
4	Landscape - Limit landscape irrigation to specific days	6%	Limit irrigation to 1 day per week	Yes
4	Other water feature or swimming pool restriction	1%	No use of potable water for filling of ponds/lakes more than one foot (except when ponds/lakes are drained for repairs)	Yes
4	Other - Prohibit use of potable water for washing hard surfaces	1%	No use of potable water for washing hard surfaces	Yes
4	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	1%	Must fix leaks within 48 hours of notice	Yes
4	Other	1%	Other restrictions as prescribed by the CPUC or SJW	Yes
5	Landscape - Prohibit all landscape irrigation	6%	Prohibit irrigation with a few key exceptions	Yes
5	Other water feature or swimming pool restriction	2%	No use of potable water for filling of swimming pools/spas, decorative fountains	Yes
5	Other	2%	Other restrictions as prescribed by the CPUC or SJW	Yes

NOTES: SJW's water shortage Stage 5 aligns with DWR's water shortage stages 5 and 6.

8.4.2 Operational Changes

In its normal operations, SJW is diligent in minimizing water losses and water waste in its practices and distribution system. SJW also has a regular water conservation and customer outreach program in place. During water shortage conditions, operational changes would include tracking the highest water users (top 300 residential customers and top 150 commercial customers) and reach out to offer conservation services to these customers. SJW did similar outreach in the past 2012-2016 drought.

8.4.3 Supply Augmentation

SJW does not have any supply augmentation responses that would be triggered by a WSCP shortage stage, as indicated by Table 8-3. All of SJW's sources of supply have been integrated into normal water management planning for shortage conditions and the water supply reliability analyses in SJW's WSCP and 2020 UWMP. Although SJW has emergency intertie connections with neighboring utilities, water transfers through those interties would not be considered a supply augmentation method, as no contracts are in place specifying quantities of water that can be obtained.

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

8.4.4 Additional Mandatory Restrictions

SJW's WSCP stages 3, 4, and 5 call for mandatory restrictions. SJW is not planning to implement additional mandatory restrictions, beyond the ones identified in Table 8-2 and SJW's current Schedule 14.1 and Rule 14.1.

8.4.5 Emergency Response Plan

Following a catastrophic supply interruption of water supplies resulting from a regional power outage, an earthquake, or other disaster, SJW would implement its Emergency Response Plan (ERP). The ERP is based on the Standardized Emergency Management System, National Incident Management System, guidance from the United States Environmental Protection Agency (USEPA), and direction from the California Division of Drinking Water (DDW).

SJW's plan is an "All Hazards" Plan that can be distributed to outside agencies so they will understand SJW's actions and be able to coordinate an appropriate response that is consistent with SJW's Incident Command System functions. SJW's ERP also includes a number of appendices, which are used by staff during planning, training, exercising, and responding to various events.

There are several associated plans and key documents called out in the ERP, which are used for specific disaster scenarios and listed as follows:

- SJW Information System Recovery Plan
- Safety Data Sheets Catalog

- Bacteriological Sample Siting Plan
- Title 22, California Code of Regulations
- SJW Water Quality Monitoring Plan
- SJW Guidelines for Assuring Water Quality During Emergency Repair of Depressurized Water Mains
- SJW Plan for Public Notification of Water Quality
- SJW Standards and Specifications Manual
- Multi-Agency Response Guidance For Emergency Drinking Water Procurement & Distribution
- Regional Emergency Operations Center Water Sector Unit Leader – Standard Operating Procedures
- Operations Area Water Sector Unit Leader - Standard Operating Procedures
- SJW Recovery Plan
- SJW Dam Emergency Response Plan
- SJW Fire Response Plan
- SJW Pandemic Response Plan
- SJW Emergency Fuel Plan

During an emergency scenario where a large portion of the production and/or distribution system is compromised and customers require alternate sources of potable water, the key guidance document used by SJW is the *Multi-Agency Response Guidance for Emergency Drinking Water Procurement & Distribution* report. This report can be obtained from the California Office of Emergency Services.

SJW built an Emergency Operation Center (EOC) in 2005 and regularly uses it for table top exercises, functional exercises, full-scale exercises, and regular staff meetings to ensure employees are familiar with the equipment should a real event occur. As part of the emergency response framework SJW has adopted, the company established key Standardized Emergency Management System/National Incident Management System positions, as well as several others specific to SJW and its mission to adequately respond to water related emergencies.

SJW has developed Strategic Partnerships, with a variety of local, state and federal agencies and associations to better plan for, and respond to emergencies. A listing and description are as follows:

- DDW is a division of the California State Water Resources Control Board (SWRCB) and is responsible for potable water utility regulation. SJW regularly trains and exercises with this state agency.
- SJW is a part of the Santa Clara County Emergency Managers Association, and coordinates planning, training and exercises with all the cities it serves. SJW also has a seat at the County Office of Emergency Services EOC, and regularly trains and exercises with this agency. SJW is also a participant as a private water utility representative at the State Mutual Aide Regional Advisory Committee to coordinate state efforts with the local water community.
- At a federal level, SJW participates with USEPA in training and exercise, being an active advisor on behalf of local water agencies. SJW works with the Department of Homeland Security as a

representative on the Water Sector Coordination Council, as a part of its membership with the National Association of Water Companies and has a seat on its Environmental, Safety and Security Committee.

- SJW also plays an active role with many of the community based organizations in the area, specifically the Collaborating Agency Disaster Relief Effort and the Emergency Volunteer Center; both key partners in SJW's 2015 Full Scale Emergency Water Distribution Exercise.
- To coordinate efforts in the water community, SJW sits as the State President for the California Water/Waste Water Agency Response Network and is currently chair of the Bay Area Emergency & Security Information Collaborative, as well as, Chair of Valley Water's Emergency Management Subcommittee.

8.4.6 Seismic Risk Assessment and Mitigation Plan

SJW's ERP is an "All Hazards" Plan that covers seismic risks and actions during and after a seismic event. Specific Action Plans have been developed to address each of the high-risk threat scenarios identified in SJW's Risk and Resiliency Assessment. SJW has a specific Action Plan for earthquakes and other disaster scenarios that may occur with a seismic event (power outage, water supply interruption, Valley Water outage, etc.). SJW's ERP references other documents that would be used during a seismic event.

In addition, SJW has an Enterprise Asset Management Plan (EAMP) in place that outlines the strategy, short-term plan, and long-term plan for managing water system infrastructure. The EAMP includes analysis on facilities that may be more vulnerable to seismic activity and the consequence of an asset failure, due to seismic events or other disaster scenarios. Within the EAMP, SJW also has a Groundwater Well Asset Management Plan (GWAMP), which focuses on SJW's groundwater well infrastructure that SJW may be more reliant on during a seismic event or other disaster scenario that results in water supply interruptions from Valley Water. The GWAMP includes a Well Supply Capacity Evaluation that evaluates the ability of SJW's groundwater well infrastructure to deliver sufficient water to meet future demands out to 2040. One of the analyzed scenarios was an emergency scenario, which assumes that both local surface water and purchased water supplies are unavailable for 30 days following a 7.9 magnitude earthquake on the San Andreas Fault due to infrastructure damage. The assumption for purchased water supply interruptions is based on a worst-case outage scenario that Valley Water uses in its infrastructure reliability planning efforts, as mentioned in Valley Water's 2020 UWMP. The Well Supply Capacity Evaluation also assumed a 20% reduction in demands due to emergency water conservation efforts and limits on groundwater well operating run times to prevent wearing out pumping equipment and causing long-term damage to the aquifer. The results of the evaluation showed that the current pumping capacities of SJW's groundwater wells are sufficient and should be maintained to meet future water demands within SJW's service area in an emergency scenario, where groundwater accounts for 100% of the total potable water supplied into the distribution system.

SJW also references local hazard mitigation and multihazard mitigation plans applicable to its service area for assessing seismic risk. These include a local hazard mitigation plan for Santa Clara County³⁵ published

³⁵ County of Santa Clara & Santa Clara County Fire. *Santa Clara County Operational Area Hazard Mitigation Plan* (Oct 2017). <https://emergencymanagement.sccgov.org/partners>

by the County of Santa Clara, and a multihazard mitigation plan for the San Francisco Bay Area³⁶ published by the Association of Bay Area Governments (ABAG).

8.4.7 Shortage Response Action Effectiveness

Estimates of the anticipated effectiveness of WSCP shortage response actions can be found in Table 8-2.

8.5 Communication Protocols

Public information campaigns for water conservation are done on an ongoing basis under all water supply conditions. Under WSCP stages, communications would be scaled up according to the water shortage situation. Communication campaigns would include information on the current WSCP stage, current and predicted supply shortage conditions, voluntary or mandatory water use restrictions that are in effect, and information on SJW's water conservation programs.

For stages 1 and 2, most communication would be done through SJW's website or social media posts. Beginning in Stage 3 with the implementation of mandatory restrictions, more robust communication campaigns would be implemented, through outreach methods including: additional info on SJW's website and social media platforms, bill inserts, emails, postcards, letters, and staff attendance at public events such as homeowner association meetings and neighborhood events.

As appropriate, communication protocols from SJW's ERP would be followed. SJW has established emergency planning partnerships with other parties, including neighboring water utilities and law enforcement agencies. SJW's ERP contains a comprehensive contact list³⁷ for these parties and many other local and national agencies that SJW may need to rely on or notify as part of its WSCP actions.

8.6 Compliance and Enforcement

SJW is a retail water utility but is not a municipality or code enforcement agency. SJW makes every effort to work with its customers to educate them about the efficient use of water and to observe water use restrictions during times of drought. However, if violations of drought restrictions do occur, SJW has a process in place to correct the issue with the customer. In general, Customer Service Field Service Inspectors and Conservation Department Inspectors will respond to water-waste violations seven days per week. The process for responding to a water-waste violation is described below. Additional information is available in Schedule 14.1 in the section entitled "Enforcement of Staged Mandatory Water Reductions".

The four step water-waste inquiry process is as follows when responding to an initial complaint:

1. A door hanger is left at the customer's property that contains specifics of the violation
2. If the issue continues, a second door hanger is left at the residence and a letter is sent to the customer with a request to correct the problem

³⁶ ABAG. *Taming Natural Disasters Multi-Jurisdictional Local Hazard Mitigation Plan for the San Francisco Bay Area* (2010). <https://abag.ca.gov/our-work/resilience/planning/hazard-mitigation-adaptation-plans>

³⁷ Located in Appendix I of SJW's ERP

3. If the issue continues, the customer will receive a certified letter and SJW will attempt to meet in person with the customer to attempt to resolve the issue
4. If the issue still continues, SJW will attempt to photograph the violation and then contact the customer by phone to attempt to resolve the issue

If the violation is still not corrected, as described in Schedule 14.1, SJW has the right to install a flow restrictor on the customer's service and/or report the customer to the necessary enforcement agency (municipal code enforcement for that particular jurisdiction). Additional description of the flow restriction process is described in Schedule 14.1. As described in Schedule 14.1, SJW can ultimately shut off water service to a customer if a water-waste violation is not corrected. However, these measures are only considered as a last resort if repeated attempts to work with the customer to correct the problem are not successful.

SJW's Schedule 14.1 is currently dormant, and activation of any water shortage stages and associated provisions would need to be approved by the CPUC (see Section 8.7.1). As of April 27, 2021, Valley Water's latest call to conservation is a voluntary 25% reduction in water use as compared to the baseline year of 2013, in light of worsening drought conditions. If a declaration of a water shortage emergency and associated mandatory water use restrictions were to be made in the near future, SJW would seek authorization from the CPUC to enact Schedule 14.1. SJW will also continue to comply with Executive Order N-42-20, which placed a moratorium on the shut-off of water service to customers due to non-payment during the COVID-19 pandemic. Currently, no customers are shut off because of their inability to pay.

8.7 Legal Authorities

This section describes legal authorities that empower SJW to implement and enforce its shortage response actions, as required by CWC Section 10632(a)(7).

Under CWC Section 350, SJW shall declare a water shortage emergency condition to prevail within its service area, whenever SJW finds and determines that the ordinary demands and requirements of water consumers cannot be satisfied without depleting water supplies to the extent that there would be insufficient water for human consumption, sanitation, and fire protection.

SJW shall coordinate with any city or the County to which it provides water supply services for the possible proclamation of a local emergency under California Government Code, California Emergency Services Act (Article 2, Section 8558).

8.7.1 Statutory Authorities

As a public water system that is regulated by the CPUC, SJW must comply with water shortage-related emergency declarations, orders, and resolutions of various local and state government organizations. SJW's ability to activate its WSCP and associated shortage response actions is subject to authorization from the CPUC. Updates to SJW's WSCP as provided in Schedule 14.1 and Rule 14.1 require CPUC approval via a Tier 2 advice letter. Rule 14.1 serves as SJW's WSCP. Schedule 14.1 is an extension of the WSCP included in Rule 14.1, with staged mandatory reductions and drought surcharges. Any implementation of the WSCP in response to water shortages requires CPUC approval via a Tier 2 advice letter.

8.8 Financial Consequences of WSCP Activation

In line with CPUC ratemaking practices, SJW's forecasted revenue requirement, which is used to set rates for customers, is based on a rate design that collects approximately 60% of revenue through the quantity charge (i.e. cost per unit of use) and 40% through the fixed meter charge (i.e. cost per meter based on size). Therefore, with implementation of the WSCP, SJW would experience revenue reductions commensurate with reductions in customer water use. Further, SJW may incur additional costs related to implementing the WSCP. Such costs could be related to increased outreach to customers about water conservation, purchases of higher-cost water supplies, and developing and/or implementing a drought rate structure.

Financial consequences of WSCP activation can be mitigated by provisions in Schedule 14.1 and Rule 14.1, which allow expenses incurred by SJW to implement Schedule 14.1 and Rule 14.1 to be recoverable if determined to be reasonable by the CPUC. Such expenses would be tracked in a memorandum account to be approved for recovery by the CPUC.

Drought surcharges can also a mitigation for financial consequences of WSCP activation, in addition to being a tool for enforcing water use reductions. Drought surcharges are approved by the CPUC under Schedule 14.1. Surcharges would be tracked in a memorandum account authorized by the CPUC to offset lost revenues. Drought surcharges are based on excess use over monthly drought allocations. In the current Schedule 14.1, the drought allocation program for residential customers is based on average residential customer use in base year 2013 for each month, less the percentage of conservation being required. The allocation program was also applied to dedicated landscape irrigation services. However, for landscape services, the allocation program was applied slightly differently. The drought allocation for each landscape service is based upon the individual landscape customer's monthly use during the base year 2013 minus the required percentage reduction.

8.9 Monitoring and Reporting

WSCPs for urban retail water suppliers should include monitoring and reporting requirements and procedures that ensure appropriate data is collected, tracked, and analyzed for monitoring customer compliance and meeting state reporting requirements. SJW will monitor and report on implementation of its WSCP to ensure that shortage response actions are achieving their intended effectiveness, or determine if improvements and new actions need to be considered. SJW activates a Drought Committee consisting of staff members from the Field Service, Customer Service, Regulatory Affairs, Communications, and Billing departments when it is determined that interdepartmental communication pertaining to a drought or water shortage is necessary. SJW regularly tracks its potable water production, customer water use, and conservation activities, and currently reports this information on a monthly basis to the SWRCB as part of the Monthly Urban Water Conservation Reporting regulation that was adopted by the SWRCB in 2020. SJW also keeps records of water-waste complaints, outreach materials and activities, metrics on outreach material distributed or participation in outreach events, and interactions between field staff and customers.

SWRCB is currently preparing regulations for monthly reporting of water production and other uses, along with associated enforcement metrics. SJW will tailor its WSCP monitoring and reporting procedures to align with those regulations once finalized.

8.10 WSCP Refinement Procedures

WSCPs should include reevaluation and improvement procedures for systematically monitoring and evaluating the functionality of the WSCP in order to ensure shortage risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented as needed. Refinements to the WSCP would be led by SJW's Manager of Field Service and Water Conservation, with support from SJW's Drought Committee. The Drought Committee would meet regularly during a supply shortage condition and would ensure that the WSCP is implemented as an adaptive management plan and used as a dynamic tool. Input from other SJW staff, customers, Valley Water, and other stakeholders would be considered in the WSCP refinement process as appropriate.

8.11 Special Water Features Distinction

Water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, should be analyzed and defined separately from swimming pools and spas when developing the WSCP. SJW's demand reduction measures listed in Table 8-2 distinguish between swimming pools and spas, and water features that are not swimming pools or spas.

8.12 Plan Adoption, Submittal, and Availability

SJW's WSCP follows the same process of plan adoption, submittal, and availability as the UWMP. A public hearing would be held for the updated WSCP, with notice to the public and the draft plan made available for public inspection starting two weeks in advance of the public hearing. Following the public hearing, the updated WSCP would be formally approved by SJW's Board of Directors, with a written adoption resolution. SJW would file its WSCP with DWR no later than 30 days after adoption of the WSCP, and would make its WSCP available on its website to customers and any city or county within which SJW provides water supplies no later than 30 days after adoption of the WSCP. As an investor-owned utility regulated by the CPUC, SJW would also submit its updated WSCP to the CPUC as part of its general rate case filings. Following approval from the Board of Directors, the WSCP would be submitted to the CPUC in the form of Rule 14.1 and Schedule 14.1 documents via a Tier 2 advice letter. SJW would provide customer notice of the Tier 2 advice letter and associated public hearing, if determined to be necessary by the CPUC. Notice would be provided to customers through bill inserts or direct mailing, and through a posting in the local newspaper.

A public hearing was held on June 11, 2021 for SJW's 2020 UWMP and this WSCP. This WSCP was approved by SJW's Board of Directors on June X, 2021, and the resolution documenting its adoption is included in Appendix K. Within 30 days after filing the 2020 UWMP to DWR, SJW will make the final combined 2020 UWMP and WSCP document available for public review on SJW's website.

Chapter 9

Demand Management Measures

The purpose of this chapter is to provide a comprehensive description of the water conservation and water loss management programs that SJW has implemented and plans to implement in order to meet state and regional water conservation goals.

SJW has maintained a long tradition of promoting water conservation. SJW educates customers on water conservation through a variety of ways, including bill inserts, water conservation literature, website content, public outreach events, school education kits, demonstration gardens, and water checkup appointments for customers' homes and businesses. Some of these programs and additional ones are implemented in collaboration with SJW's wholesaler, Valley Water. SJW also practices conservation in its own operations through leak detection programs that help minimize water loss from pipelines, replacement of pipelines that have a high risk of failing or leaking, and regular water loss tracking and reporting. In addition, SJW is proposing to implement Advanced Metering Infrastructure (AMI) throughout its service area. These AMI meters, or "smart water meters", provide near real-time water use data and proactive leak notifications, to help SJW and its customers conserve water and reduce water waste.

9.1 California Water Efficiency Partnership

SJW became a signatory to the California Urban Water Conservation Council (CUWCC), now called the California Water Efficiency Partnership (CalWEP), in 2006 and has been an active member since that time. CalWEP's mission is to maximize urban water efficiency and conservation throughout California by supporting and integrating innovative technologies and practices; encouraging effective public policies; advancing research, training, and public education; and building collaborative approaches and partnerships. SJW's conservation program is closely linked to the Best Management Practices (BMPs) that were originally established by the CUWCC in their 2009 Memorandum of Understanding (MOU). The following table shows the BMPs that are currently being implemented by SJW, and which are run by SJW directly, operated in conjunction with the Valley Water, or as a combination of the two.

Best Management Practices (based on CUWCC 2009 MOU)			SJW Implemented	Executed By
Category	BMP	BMP Name		
Operations Practices	1.1.1	Conservation Coordinator	Yes	SJW
	1.1.2	Water Waste Prevention	Yes	SJW
	1.1.3	Wholesale Agency Assistance Programs	Yes	Valley Water
	1.2	Water Loss Control	Yes	SJW
	1.3	Metering w/Commodity Rates for All New Connections and Retrofit of Existing Connections	Yes	SJW
	1.4	Retail Conservation Pricing	Yes	SJW
Education Programs	2.1	Public Information Programs	Yes	SJW/Valley Water
	2.2	School Education Programs	Yes	SJW/Valley Water
Residential	3.1	Residential Assistance Program	Yes	SJW
	3.2	Landscape Water Survey	Yes	SJW
CII	4	CII	Yes	SJW
Landscape	5	Landscape	Yes	SJW/Valley Water

9.2 Specific Demand Management Measures

The following subsections describe SJW's various demand management measures.

9.2.1 Water-Waste Prevention Ordinances

SJW is not a local government with the power to enforce ordinances. Rather, SJW operates in the jurisdiction of a number of cities, each of which has their own local water-waste provisions and ordinances.

Additionally, SJW has its own water-waste provisions that come into effect when there is a water shortage. The CPUC has set forth the rules regarding water waste and water shortages governing investor owned utilities such as SJW. The CPUC rule relating to this is Rule 14.1 included as Appendix H. This rule states that when there is a low-level water shortage that prompts a call for voluntary conservation by customers, a list of water-waste provisions goes into effect. Rule 14.1 also has provisions for high-level water shortages when mandatory conservation measures are deemed necessary. More description of water shortage levels and associated actions can be found in Chapter 8.

9.2.2 Metering

In accordance with sections 526 and 527 of the CWC, all of SJW's customer services are metered. SJW has regular testing and replacement programs for its water meters, driven by CPUC General Order 103-A requirements, which establish maximum periods of time that meters are allowed to remain in service without retesting. To ensure accuracy of meters, SJW replaces ¾-inch meters on a 20-year cycle and 1-inch meters on a 15-year cycle. Meters larger than 1-inch are tested after meeting certain time or consumption-based thresholds. The majority of SJW's meters are manually read, though some commercial accounts have automated meter reading (AMR).

In December 2019, SJW filed an application with the CPUC to obtain approval for a system-wide deployment of advanced metering infrastructure (AMI) and is currently continuing to work through the regulatory process with the CPUC. By collecting near real-time water consumption data, AMI would provide multiple benefits related to water conservation, including improved abilities to manage water consumption and detect water leaks, better capabilities to troubleshoot and investigate high use bills, and the ability to comply with conservation mandates.

9.2.3 Conservation Pricing

SJW's water rates and pricing structures are set by the CPUC. SJW has several water rate schedules, depending on the type of service. For a general metered service, which applies to most customers, SJW has a tiered rate structure in place, where the price per unit of water delivered depends on the amount used, with a higher price charged for larger quantities. This tiered rate structure is always in effect to encourage conservation and is different from drought rate structures and surcharges, which only go into effect during water shortages, as described in Chapter 8).

9.2.4 Public Education and Outreach

SJW uses a variety of public education and outreach tools to promote water efficiency, including conservation brochures, bill inserts, advertising, public speaking engagements, and content on SJW's website. The goal of SJW's water conservation program is to increase customer awareness of habits or procedures that waste water, as well as awareness of water capacity, available sources, system capacity, and treatment and distribution issues. Public information campaigns are designed to promote understanding and dialogue in the community on water conservation topics as well as to motivate customers to conserve. Public information is provided directly by SJW and in conjunction with Valley Water.

Public information and education programs generally have positive social impacts on the community due to increased public awareness of and cooperation with water use issues. The major impact for customers who use water efficiently is a lower water bill. Environmental impacts include reduced demand on future water supplies and lower flows to the sewage treatment plant.

Bill Inserts

SJW distributes three to four conservation bill inserts annually. An example of a bill insert includes the one sent by SJW each spring that promotes SJW's water checkup program for customers and the annual Water Awareness Night event that SJW sponsors. In the fall, SJW promotes Water Appreciation Day with

a bill insert that focuses on reducing outdoor water use. This insert reminds customers to turn off their irrigation systems in the wet winter months.

Water Conservation Literature

SJW has developed a variety of water conservation literature. The literature is available free of charge both in person and downloadable from SJW's website. SJW has developed a booklet called "Guide to Using Water Wisely". This booklet describes the various conservation programs and rebates that are available to customers. It also describes how to read one's water meter, how to fix basic leaking toilet issues, and has a section on water wise landscaping. SJW also distributes a flyer provided by Valley Water that describes their rebate programs that are available to all SJW customers.

Website Content

A variety of public information related to conservation is available on SJW's website, including conservation tips, blog posts on water conservation, and details on SJW's efforts in reducing water loss and promoting conservation. Customers can also download literature and request a water checkup appointment via e-mail. SJW's website also has information about water-wise landscaping, including links to a dedicated "Water Wise Gardening" website, which has a plant database and a virtual tour of SJW's public water-smart demonstration gardens.

Public Events

SJW also offers several public information events and services, some of which include:

- Water Awareness Night – SJW began sponsoring this annual event in 2002. Through a bill insert and a message on the bill, customers are invited to attend the event, which is part of a San Jose Giants (minor league) baseball game at San Jose Municipal Stadium. SJW personnel set up various displays at the entrance to the stadium, including games for the children and conservation information for the adults.
- Water Appreciation Day – SJW began sponsoring this annual event in 2013. Through a bill insert, a message on the bill, social media reminders and a front-page banner on the SJW website, customers are invited to attend the event, which is part of a San Jose State University football game at Spartan Stadium. SJW personnel set up various displays at the entrance to the stadium, including games for the children and conservation information for the adults.
- Speaker's Bureau – SJW receives requests to speak to local service and civic groups, homeowners associations and similar organizations. Requests are filled whenever possible.

Due to the COVID-19 pandemic, these public events have been put on hold.

School Education Kits

This program, implemented in 2015, provides a turn-key set of classroom activities and hands-on home projects for fifth grade students to increase their water conservation awareness. The program addresses the priorities of obtaining measurable water and energy savings results and cost effectiveness through a proven program format. Participating classroom teachers receive guides that lead them through the curriculum while students receive a Student Workbook for in-class instruction and a "WaterWise Kit" for the take-home portion of the program. The Teacher Guide and Student Workbook include information

specific to the local community and include SJW-specific information such as water sources, drought history and storage facilities.

Demonstration Gardens

Over the last several years, SJW has increased the outreach and educational programs on outdoor water use. SJW continues to maintain Water Smart Demonstration Gardens at four different locations, one of which is complete with signage describing the plant types. Customers can visit these gardens in person or take a virtual tour on SJW's website. SJW has developed a dedicated "Water Wise Gardening" website³⁸ where customers can access a plant information database that includes hundreds of low water use plants, a photographic database of water wise gardens in the San Jose-Santa Clara County area, fact sheets with topics such as Solving Runoff Problems and The Magic of Mulch, and numerous other garden resources.

CATCH Program

SJW has had a consumer water checkup program (also called "CATCH" program) in place since 1991. CATCH checkups are performed free of charge to all customers. The purpose of the checkup is to educate customers about the efficient use of water in order to make their homes and businesses as water efficient as possible. Checkups usually start with a SJW inspector demonstrating to the customer how to read the water meter for current use and for signs of leaks. This can help customers become better aware of their own use and to be proactive when a leak is detected.

An examination is then performed throughout the home or building to identify any water leaks and to check the efficiency of plumbing fixtures. In addition to the indoor component of the checkup, SJW has developed the landscape component of the checkup program to provide an extensive evaluation of the resident's landscape irrigation system. During this component of the checkup, customers are given recommendations for an irrigation schedule based on the plant materials and the irrigation system hardware. The inspector will check the irrigation system for leaks and efficiency, and offer to program the customer's irrigation controller with the recommended schedule.

The following is a summary of the items performed during a typical checkup appointment:

Indoors:

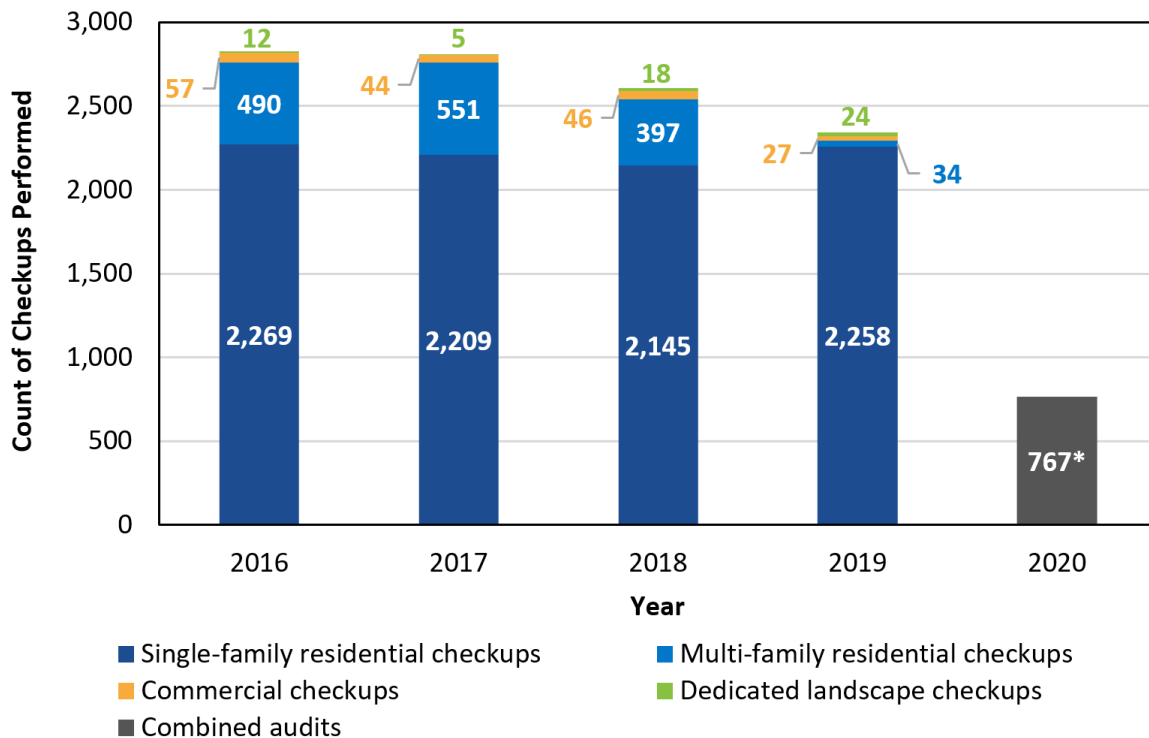
- Check for inefficient plumbing fixtures and appliances and make recommendations for fixture replacement where appropriate; make recommendations to rebate programs, if available.
- Check for water-using fixtures and inform customers of any leaks found as well as advice on leak repair.

³⁸ <http://www.sanjose.watersavingplants.com/>

Outdoors:

- Thoroughly check the irrigation system including inspecting sprinkler heads for proper functioning. Note and describe any excessive runoff, broken sprinkler heads, or any other leaks in the irrigation system.
- Review the irrigation schedule with the customer and make recommendations for improving the schedule. If requested, the inspector will implement the new schedule by changing the customer's irrigation controller.
- Check all outdoor hose bibs, pool pumps, and water softeners for leaks.

Figure 9-1 shows the number of CATCH checkups performed in recent years listed by customer class. Due to the COVID-19 pandemic, the CATCH program was temporarily put on hold, and a lower number of checkups were performed in 2020. Following an extensive safety review, a new contactless, outdoor-only CATCH program is now available to customers.



*Lower count of checkups performed in 2020 due to COVID-19 pandemic. Count for 2020 not broken out by customer class.

Figure 9-1. Count of CATCH Checkups Performed by Customer Type

CII Water Audits

In addition to the CATCH program, SJW implemented a comprehensive CII audit program in 2016 for large and complex CII customers. Maddaus Water Management, a consulting firm that specializes in conducting commercial water audits, oversees the new program. Maddaus Water Management conducts specialized CII audits where additional expertise is required, as SJW staff may be unable to provide adequate conservation services to customers with commercial kitchen appliances, cooling towers, medical

equipment, and other specialized water-using devices. Following the on-site audit, customers receive a tailored report that documents all water-using devices, quantity of water used by each device, and recommendations on efficiency upgrades based on total water savings potential and payback period.

Large Landscape Surveys

Starting in 2017, Valley Water launched a new program for large landscape irrigation sites at commercial and multi-family residential properties on SJW's behalf. The program is a water budget and water survey program from the vendor Waterfluence. The program offers dedicated landscape and recycled water customers a customized water budget based on aerial imagery and site verification of the amount and type of irrigated area. Customers receive a monthly water budget report that shows actual water use compared to calculated water budget. The report is provided to inform customers of their water use and encourage conservation. For sites with special needs or deficiencies, a site irrigation survey is offered to the customers. Since the start of the program, over 60 large landscape surveys and 30,200 large landscape water budgets have been provided to SJW customers.

Valley Water Rebate Programs

Valley Water also offers many water conservation rebates on SJW's behalf. These include rebates for installation of qualifying submeters and water meters, CII water conservation projects, turf grass removal, high-efficiency irrigation equipment upgrades, rain barrel or cistern installations, and graywater laundry-to-landscape systems. Additional details can be found on SJW's website or Valley Water's website and UWMP. Valley Water reports participation of SJW customers in Valley Water's conservation programs annually on a fiscal year basis. The table below summarizes program implementation over the previous five years on a calendar year basis.

SJW Customer Participation in Valley Water Conservation Programs					
Rebate/Program	2016	2017	2018	2019	2020*
Square feet of turf grass removed / replaced with low water-using plants	1,859,688	666,998	258,697	162,759	62,597
Efficient irrigation hardware installed	15,455	19,582	2,014	1,705	2,504
Weather Based Irrigation Controllers installed	386	393	401	430	128
Square feet of shrub areas (non-turf) converted from spray sprinklers to in-line drip irrigation	333	20,411	50,945	20,784	2,504
Square feet of roof space diverted to a rain garden	0	0	0	4,354	3,870
Rain barrels installed	0	0	0	31	19
Gallons of cistern space installed	0	0	0	19,825	550
Graywater laundry-to-landscape systems installed	4	4	3	5	5
Low-flow showerheads distributed	929	24	799	928	306

SJW Customer Participation in Valley Water Conservation Programs					
Rebate/Program	2016	2017	2018	2019	2020*
Low-flow faucet aerators distributed	4,215	32	100	330	13
Large landscape (Waterfluence) surveys completed	0	13	20	24	3
Large landscape (Waterfluence) water budgets provided	0	22	11,513	12,480	6,204
Pre-Rinse Sprayers (CII)	101	0	3	2	0
Commercial Rebates (CII)	0	1	400	58	0
Direct Install Toilets (CII)	406	353	1,294	459	0

*Counts for 2020 represent the count through June 2020. Valley Water reports those metrics on a fiscal year basis. Metrics for fiscal year 2021 are not available yet.

9.2.5 Water Conservation Program Coordination and Staffing Support

Water conservation programs at SJW are executed by a group of approximately ten staff members in the Field Service department. In addition, SJW staff from the Regulatory Affairs and Communications department assist with public outreach events, managing website content, and distributing other educational material.

9.2.6 Programs to Assess and Manage Distribution System Real Loss

In addition to having customer-facing water conservation programs, SJW also engages in other activities that contribute to the overall goal of reducing water waste. SJW uses a combination of advanced water loss detection technology, proactive water loss prevention planning, and prompt response to suspected or reported leaks, to minimize water losses from water mains in the distribution system. Per the USEPA, national studies indicate that, on average, 14% of water treated by water systems is lost to leaks, with some water systems reporting water losses exceeding 60%.³⁹ In comparison, SJW's average annual water loss rate is approximately 7%.

Acoustic Leak Detection Sensors

Beginning in 2017, SJW has deployed acoustic leak detection sensors throughout the service area. At night, these sensors listen for acoustic anomalies, which are indicative of a potential leak. When anomalies are identified, an automated procedure correlates and maps the location of each suspected leak. Field staff then use this information to investigate and make repairs. Acoustic leak detection sensors are particularly useful for pinpointing non-surfacing leaks that would otherwise be hidden. For example, from September 1st to October 1st 2020 alone, SJW found 21 non-surfacing leaks and estimated that by proactively finding these leaks it saved over 40 MG of water. Currently, SJW has over 8,000 sensors deployed and is planning to deploy additional sensors over the next few years.

Main Replacement Program

Since 2008, SJW annually replaces approximately 1% of its water mains, or 24 miles of pipe. SJW has a robust Pipeline Asset Management Plan that guides the prioritization of water mains for replacement or

³⁹ <https://www.epa.gov/sustainable-water-infrastructure/water-efficiency-water-suppliers>

rehabilitation. A machine-learning model is used to predict the probability of failure or leaks occurring on each section of water main. The consequence of failure is also evaluated for each section of main so that critical mains are prioritized. SJW has determined that a 1% replacement rate would, in the long term, stabilize and keep the number of leaks to a manageable level, and is essential to maintain a reliable pipeline network with minimal disruptions from leaks.

Advanced Metering Infrastructure

SJW's proposed AMI program (pending CPUC approval) would enable SJW to detect and improve system-side water loss through the creation of district metered areas (DMAs). DMAs involve comparison of production to metered consumption data when use is low (e.g., in the middle of the night). This analysis would inform SJW's decision-making process in determining where to send crews and leak detection sensors. Leak detection is further enabled via ongoing monitoring of existing distribution system pressure monitors to determine the location and scale of leakage in DMAs.

Prior to submitting an application for AMI to the CPUC, SJW previously launched an AMI pilot project for residential customers in 2016-2018. This pilot consisted of testing two different types of AMI systems, one cellular and one fixed-network, for two groups of residential customers of approximately 400 each, in the Willow Glen area of San Jose. The project successfully provided near real-time information of water use to customers and demonstrated the capabilities of AMI as a water conservation and leak detection tool.

9.3 Water Use Objectives

California passed two water conservation bills in 2018 that will ultimately restrict water use: SB 606 and AB 1668. Starting in 2023, urban water suppliers will be required to develop new water use objectives that are based on specific water use efficiency standards from DWR (still in development) for certain water use sectors (residential indoor use, residential outdoor use, CII outdoor use, etc.), with enforcement of the conservation mandates beginning in 2025. Once the water use standards are finalized by DWR, SJW will evaluate its water conservation and water loss management programs to identify additional actions that are needed for compliance with the conservation mandates.

Based on the legislation, a new program that SJW is proposing to implement is a system-wide deployment of AMI (pending CPUC approval). The near real-time data and proactive leak notifications that AMI provides will be critical for SJW and its customers to be able to comply with the upcoming state conservation mandates. Furthermore, the legislation require that water suppliers distinguish between indoor and outdoor water use, which cannot be reliably estimated without AMI data. With AMI, outdoor irrigation can be inferred using hourly interval data and algorithms. Without AMI, utilities typically estimate an indoor/outdoor water split. This estimate is generically applied across the population, as most utilities do not have detailed information on which customers irrigate versus those who may have artificial grass or gravel. AMI would enable SJW to distinguish between indoor and outdoor water use, helping both customers and the utility to comply with upcoming legislation.

Chapter 10

Plan Adoption, Submittal and Implementation

This chapter describes the notification that was made to jurisdictions on SJW’s UWMP preparation, the public hearing that was held for the UWMP and WSCP, and steps taken by SJW to adopt, submit, make publically available, and amend the UWMP and WSCP.

SJW invited Valley Water and local jurisdictions to participate in the development of the UWMP and provided over 60 days of notice prior to the public hearing. A public hearing was hosted on June 11, 2021 at 12:00 p.m. to present the plans and collect public input. The draft plans were made available for public review on SJW’s website two weeks prior to the public hearing, and notice of the public hearing was posted in the San Jose Mercury News on May 28, 2021 and June 4, 2021. The plans were adopted by SJW’s Board of Directors on June 8, 2021, and submitted to DWR within 30 days of adoption and by the July 1, 2021 deadline. The final UWMP and WSCP will be made publically available on SJW’s website within 30 days of adoption.

10.1 Inclusion of all 2020 Data

Data provided in this UWMP is provided on a calendar year basis through December 31, 2020.

10.2 Notice of Public Hearing

10.2.1 Notice to Cities and Counties

SJW invited Valley Water and local city and county jurisdictions to participate in the development of the UWMP and provided over 60 days of notice prior to the public hearing. Copies of the notification letters are provided in Appendix I. A list of the notified entities is provided in Table 10-1. The same entities were notified of the public hearing at least two weeks in advance.

Table 10-1 Retail: Notification to Cities and Counties		
City Name	60 Day Notice	Notice of Public Hearing
City of Campbell	☑	☑
City of Cupertino	☑	☑
City of Milpitas	☑	☑
City of Monte Sereno	☑	☑
City of San José	☑	☑
City of Santa Clara	☑	☑
City of Saratoga	☑	☑
City of Sunnyvale	☑	☑
Town of Los Gatos	☑	☑

Table 10-1 Retail: Notification to Cities and Counties		
County Name	60 Day Notice	Notice of Public Hearing
Santa Clara County	☒	☒

10.2.2 Notice to the Public

Notice to the public of the time and location of the hearing was published in the San Jose Mercury News on May 28, 2021 and June 4, 2021, and a copy of this notice is attached in Appendix J.

10.3 Public Hearing and Adoption

The California Urban Water Management Planning Act requires each water agency to encourage the active involvement of the public in the development of the UWMP. SJW sought public participation by allowing any interested member of the general community in the service area to have access to the Draft 2020 UWMP starting May 27, 2021. The draft 2020 UWMP was made available for public inspection online on the company website www.sjwater.com for public inspection two weeks in advance of the public hearing. Members of the public were able to submit written questions or comments through email. The public hearing was held on June 11, 2021 at 12:00 p.m. virtually through webinar (COVID-19 restrictions prevented the public hearing from being held in-person). Questions and comments were also collected at the public hearing.

Following the public hearing and incorporation of public feedback, the final UWMP and WSCP were approved by SJW's Board of Directors on June X, 2021. The resolution documenting adoption is included in Appendix K.

10.4 Plan Submittal

This 2020 UWMP and WSCP, along with the required data tables, was electronically submitted to DWR in accordance with its requirements before the July 1 deadline and no later than 30 days after adoption. The DWR checklist arranged by subject is included as Appendix L, demonstrating that SJW has met the requirements of the CWC. No later than 30 days after adoption, a CD or hardcopy of the adopted UWMP and WSCP will be sent to the California State Library and electronic copies will be sent to all jurisdictions identified in Table 10-1.

10.5 Public Availability

Within 30 days after filing the 2020 UWMP to DWR, SJW will make the final UWMP and WSCP available for public review on SJW's website.

10.6 Notification to Public Utilities Commission

As an investor-owned utility regulated by the CPUC, SJW will submit its 2020 UWMP and WSCP to the CPUC as part of its general rate case filings.

10.7 Amending an Adopted UWMP or WSCP

Should SJW amend this 2020 UWMP or WSCP, the required notification, public hearing, adoption, and submittal processes as defined by DWR will be followed.

Appendix A

Reduced Delta Reliance Calculations

Reduced Reliance Calculation - Data Template

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	320,000	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	373,000	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	25,000	28,000
Stormwater Capture and Use							1,000	1,000
Advanced Water Technologies	-	-	-	-	7,000	7,000	7,000	7,000
Conjunctive Use Projects	58,000	55,000	59,000	36,000	37,000	40,000	41,000	41,000
Local and Regional Water Supply and Storage Projects	11,000	9,000	7,000	11,000	11,000	11,000	11,000	11,000
Other Programs and Projects the Contribute to Regional Self-Reliance	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	209,000	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	373,000	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	209,000	212,000
Change in Water Supplies Contributing to Regional Self-Reliance		9,000	25,000	17,000	41,000	53,000	62,000	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%	50.4%	51.5%	52.6%	52.1%
Change in Percent of Water Supplies Contributing to Regional Self-Reliance		6.2%	10.1%	2.9%	9.0%	10.1%	11.2%	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	173,000	146,000	139,000	130,000	134,000	136,000	139,000	142,000
Delta/Delta Tributary Diversions	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	373,000	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%	50.9%	50.3%	50.4%	50.4%
Change in Percent of Water Supplies from the Delta Watershed		-5.1%	-8.8%	-14.2%	-13.3%	-14.0%	-13.8%	-13.9%

Appendix B

Demand Projection Calculations

Calculations for projected water demands in Table 4-2 for 2025 are shown below:

$$Demand_{2025} = \left((gpcd_{Ex\ Pop,2025} \times Pop_{Ex}) + (gpcd_{New\ Pop} \times Pop_{New,2025}) \right) \times (1 + (L_{Fut} - L_{Ex})) \\ \times \frac{MG}{1,000,000\ gallons} \times \frac{365\ days}{year}$$

$$gpcd_{Ex\ Pop,2025} = gpcd_{Ex\ Pop,2020} \times (1 + r)^{(2025-2020)}$$

Variable	Definition	Value
Demand ₂₀₂₅	Projected total water demand in 2025 in million gallons	Calculated
gpcd _{Ex Pop,2020}	Gallons per capita per day water use in 2020 for existing population, accounting for 366 days in 2020	108.4 gpcd
gpcd _{Ex Pop,2025}	Gallons per capita per day water use in 2025 for existing population	Calculated
gpcd _{New Pop}	Gallons per capita per day water use for new population	75 gpcd
L _{Ex}	Current water loss as a percent of water supplied	7.33%
L _{Fut}	Future target water loss as a percent of water supplied	7%
Pop _{Ex}	Existing population in 2020	997,817 people
Pop _{New,2025}	New population added in 2025 after 2020	71,816 people
r ₂₀₂₀₋₂₀₂₅	Annual percent change in per capita water use for existing population between 2020-2025	1%

Calculations for projected water demands in Table 4-2 for a future year after 2025 are shown below:

$$Demand_{Fut} = \left((gpcd_{Ex\ Pop,Fut} \times Pop_{Ex}) + (gpcd_{New\ Pop} \times Pop_{New}) \right) \times (1 + (L_{Fut} - L_{Ex})) \\ \times \frac{MG}{1,000,000\ gallons} \times \frac{365\ days^*}{year}$$

$$gpcd_{Ex\ Pop,Fut} = gpcd_{Ex\ Pop,2020} \times (1 + r_{2020-2025})^{(2025-2020)} \times (1 + r_{after\ 2020})^{(Future\ Yr-2025)}$$

Variable	Definition	Value
Demand _{Fut}	Projected total water demand in future year in million gallons	Calculated
Future Yr	Selected future year after 2025	To be defined
gpcd _{Ex Pop,2020}	Gallons per capita per day water use in 2020 for existing population, accounting for 366 days in 2020	108.4 gpcd
gpcd _{Ex Pop,Fut}	Gallons per capita per day water use in future year after 2025 for existing population	Calculated
gpcd _{New Pop}	Gallons per capita per day water use for new population	75 gpcd
L _{Ex}	Current water loss as a percent of water supplied	7.33%
L _{Fut}	Future target water loss as a percent of water supplied	7%
Pop _{Ex}	Existing population in 2020	997,817 people
Pop _{New}	New population added in future year after 2020	To be defined
r ₂₀₂₀₋₂₀₂₅	Annual percent change in per capita water use for existing population between 2020-2025	1%
r _{after 2020}	Annual percent change in per capita water use for existing population after 2025	-0.8%

*366 days per year if leap year

Appendix C

Water Loss Audit Worksheets



AWWA Free Water Audit Software: Reporting Worksheet

WAS v5.0
American Water Works Association
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Click to access definition
 Click to add a comment

Water Audit Report for: **San Jose Water Company (CA 4310011)**
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.

WATER SUPPLIED

Volume from own sources: 15,992.791 MG/Yr
Water imported: 20,341.195 MG/Yr
Water exported: 0.000 MG/Yr

Master Meter and Supply Error Adjustments

Pcnt: Value: 21.431 MG/Yr
 0.00% MG/Yr
 MG/Yr

Enter negative % or value for under-registration
Enter positive % or value for over-registration

WATER SUPPLIED: **36,312.555** MG/Yr

AUTHORIZED CONSUMPTION

Billed metered: 33,574.205 MG/Yr
Billed unmetered: 0.000 MG/Yr
Unbilled metered: 80.933 MG/Yr
Unbilled unmetered: 58.268 MG/Yr

AUTHORIZED CONSUMPTION: **33,713.405** MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption)

Apparent Losses

Unauthorized consumption: 90.781 MG/Yr

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies: 453.456 MG/Yr
Systematic data handling errors: 83.936 MG/Yr

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

Apparent Losses: **628.173** MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 1,970.977 MG/Yr

WATER LOSSES: **2,599.150** MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: **2,738.350** MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains: 2,478.5 miles
Number of active AND inactive service connections: 234,832
Service connection density: 95 conn./mile main

Are customer meters typically located at the curbstop or property line?

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: 77.7 psi

COST DATA

Total annual cost of operating water system: \$290,975,323 \$/Year
Customer retail unit cost (applied to Apparent Losses): \$4.66 \$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses): \$3,890.06 \$/Million gallons ☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 73 out of 100 *****

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

- 1: Volume from own sources
- 2: Water imported
- 3: Customer metering inaccuracies



AWWA Free Water Audit Software: System Attributes and Performance Indicators

WAS v5.0

American Water Works Association.
Copyright © 2014, All Rights Reserved.

Water Audit Report for: **San Jose Water Company (CA 4310011)**

Reporting Year: **2019** **1/2019 - 12/2019**

*** YOUR WATER AUDIT DATA VALIDITY SCORE IS: 73 out of 100 ***

System Attributes:

Apparent Losses:	628.173	MG/Yr
+ Real Losses:	1,970.977	MG/Yr
= Water Losses:	2,599.150	MG/Yr

? Inavoidable Annual Real Losses (UARL): **1,379.27** MG/Yr

Annual cost of Apparent Losses: **\$3,913,211**

Annual cost of Real Losses: **\$7,667,218** Valued at Variable Production Cost
Return to Reporting Worksheet to change this assumption

Performance Indicators:

Financial: { Non-revenue water as percent by volume of Water Supplied: **7.5%**
Non-revenue water as percent by cost of operating system: **4.2%** Real Losses valued at Variable Production Cost

Operational Efficiency: { Apparent Losses per service connection per day: **7.33** gallons/connection/day
Real Losses per service connection per day: **22.99** gallons/connection/day
Real Losses per length of main per day*: **N/A**
Real Losses per service connection per day per psi pressure: **0.30** gallons/connection/day/psi

From Above, Real Losses = Current Annual Real Losses (CARL): **1,970.98** million gallons/year

? Infrastructure Leakage Index (ILI) [CARL/UARL]: **1.43**

* This performance indicator applies for systems with a low service connection density of less than 32 service connections/mile of pipeline



AWWA Free Water Audit Software: Reporting Worksheet

WAS v5.0
American Water Works Association
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Click to access definition
 Click to add a comment

Water Audit Report for: **City of Cupertino (CA4310018)**
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.

WATER SUPPLIED

Volume from own sources: 44.784 MG/Yr
Water imported: 752.656 MG/Yr
Water exported: 0.000 MG/Yr

Master Meter and Supply Error Adjustments

Pcnt: Value: MG/Yr
 MG/Yr
 MG/Yr

Enter negative % or value for under-registration
Enter positive % or value for over-registration

WATER SUPPLIED: **812.484** MG/Yr

AUTHORIZED CONSUMPTION

Billed metered: 758.966 MG/Yr
Billed unmetered: 0.000 MG/Yr
Unbilled metered: 2.144 MG/Yr
Unbilled unmetered: **0.454** MG/Yr

AUTHORIZED CONSUMPTION: **761.565** MG/Yr

Click here: for help using option buttons below

Pcnt: Value: MG/Yr

Use buttons to select percentage of water supplied **OR** value

Pcnt: Value: MG/Yr

MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption)

Apparent Losses

Unauthorized consumption: **2.031** MG/Yr

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies: **10.259** MG/Yr
Systematic data handling errors: **1.897** MG/Yr

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

Apparent Losses: **14.188** MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: **36.731** MG/Yr

WATER LOSSES: **50.919** MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: **53.518** MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains: 59.8 miles
Number of active AND inactive service connections: 4,303
Service connection density: 72 conn./mile main

Are customer meters typically located at the curbside or property line?

Average length of customer service line:

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure: 100.0 psi

(length of service line, beyond the property boundary, that is the responsibility of the utility)

COST DATA

Total annual cost of operating water system: \$5,077,478 \$/Year
Customer retail unit cost (applied to Apparent Losses): \$5.08 \$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses): \$4,567.47 \$/Million gallons ☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 75 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: Unauthorized consumption



AWWA Free Water Audit Software: System Attributes and Performance Indicators

WAS v5.0

American Water Works Association.
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Water Audit Report for: **City of Cupertino (CA4310018)**

Reporting Year: **2019** **1/2019 - 12/2019**

*** YOUR WATER AUDIT DATA VALIDITY SCORE IS: 75 out of 100 ***

System Attributes:

Apparent Losses:	14.188	MG/Yr
+ Real Losses:	36.731	MG/Yr
= Water Losses:	50.919	MG/Yr

? Inavoidable Annual Real Losses (UARL): **35.36** MG/Yr

Annual cost of Apparent Losses: **\$96,348**

Annual cost of Real Losses: **\$167,770**

Valued at Variable Production Cost
Return to Reporting Worksheet to change this assumption

Performance Indicators:

Financial:

Non-revenue water as percent by volume of Water Supplied:	6.6%	
Non-revenue water as percent by cost of operating system:	5.4%	Real Losses valued at Variable Production Cost

Operational Efficiency:

Apparent Losses per service connection per day:	9.03	gallons/connection/day
Real Losses per service connection per day:	23.39	gallons/connection/day
Real Losses per length of main per day*:	N/A	
Real Losses per service connection per day per psi pressure:	0.23	gallons/connection/day/psi

From Above, Real Losses = Current Annual Real Losses (CARL): **36.73** million gallons/year

? Infrastructure Leakage Index (ILI) [CARL/UARL]: **1.04**

* This performance indicator applies for systems with a low service connection density of less than 32 service connections/mile of pipeline

Appendix D

Senate Bill x7-7 Verification Forms

SB X7-7 Table 0: Units of Measure Used in UWMP*

(select one from the drop down list)

Million Gallons

**The unit of measure must be consistent with Table 2-3*

NOTES:

SB X7-7 Table-1: Baseline Period Ranges

Baseline	Parameter	Value	Units
10- to 15-year baseline period	2008 total water deliveries	50,323	Million Gallons
	2008 total volume of delivered recycled water	398	Million Gallons
	2008 recycled water as a percent of total deliveries	0.79%	Percent
	Number of years in baseline period ¹	10	Years
	Year beginning baseline period range	1995	
	Year ending baseline period range ²	2004	
5-year baseline period	Number of years in baseline period	5	Years
	Year beginning baseline period range	2003	
	Year ending baseline period range ³	2007	
¹ If the 2008 recycled water percent is less than 10 percent, then the first baseline period is a continuous 10-year period. If the amount of recycled water delivered in 2008 is 10 percent or greater, the first baseline period is a continuous 10- to 15-year period.			
² The ending year must be between December 31, 2004 and December 31, 2010.			
³ The ending year must be between December 31, 2007 and December 31, 2010.			
NOTES:			

SB X7-7 Table 2: Method for Population Estimates

Method Used to Determine Population
(may check more than one)

☐

1. Department of Finance (DOF)
DOF Table E-8 (1990 - 2000) and (2000-2010) and
DOF Table E-5 (2011 - 2015) when available

☒

2. Persons-per-Connection Method

☐

3. DWR Population Tool

☐

4. Other
DWR recommends pre-review

NOTES:

SB X7-7 Table 3: Service Area Population

Year		Population
10 to 15 Year Baseline Population		
Year 1	1995	871,012
Year 2	1996	868,588
Year 3	1997	869,926
Year 4	1998	886,121
Year 5	1999	897,433
Year 6	2000	901,982
Year 7	2001	903,898
Year 8	2002	905,058
Year 9	2003	907,683
Year 10	2004	910,243
Year 11		
Year 12		
Year 13		
Year 14		
Year 15		
5 Year Baseline Population		
Year 1	2003	907,683
Year 2	2004	910,243
Year 3	2005	916,473
Year 4	2006	924,214
Year 5	2007	928,575
2015 Compliance Year Population		
2015		982,750
NOTES:		

SB X7-7 Table 4: Annual Gross Water Use *

	Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Into Distribution System <i>Fm SB X7-7 Table(s) 4-A</i>	Deductions					Annual Gross Water Use
			Exported Water	Change in Dist. System Storage (+/-)	Indirect Recycled Water <i>Fm SB X7-7 Table 4-B</i>	Water Delivered for Agricultural Use	Process Water <i>Fm SB X7-7 Table(s) 4-D</i>	
10 to 15 Year Baseline - Gross Water Use								
Year 1	1995	46021.159	0	0	0	0	0	46,021
Year 2	1996	48506.076	0	0	0	0	0	48,506
Year 3	1997	51665.237	0	0	0	0	0	51,665
Year 4	1998	48325.2358	0	0	0	0	0	48,325
Year 5	1999	50968.8562	0	0	0	0	0	50,969
Year 6	2000	51701.031	0	0	0	0	0	51,701
Year 7	2001	51625.7344	0	0	0	0	0	51,626
Year 8	2002	51868.5694	0	0	0	0	0	51,869
Year 9	2003	49224.9255	0	0	0	0	0	49,225
Year 10	2004	50589.845	0	0	0	0	0	50,590
<i>Year 11</i>	0	0			0		0	0
<i>Year 12</i>	0	0			0		0	0
<i>Year 13</i>	0	0			0		0	0
<i>Year 14</i>	0	0			0		0	0
<i>Year 15</i>	0	0			0		0	0
10 - 15 year baseline average gross water use								33,366
5 Year Baseline - Gross Water Use								
Year 1	2003	49,225	0	0	0	0	0	49,225
Year 2	2004	50,590	0	0	0	0	0	50,590
Year 3	2005	47,801	0	0	0	0	0	47,801
Year 4	2006	48,335	0	0	0	0	0	48,335
Year 5	2007	50,662	0	0	0	0	0	50,662
5 year baseline average gross water use								49,323
2015 Compliance Year - Gross Water Use								
2015		34,445	0	0	0	0	0	34,445

* NOTE that the units of measure must remain consistent throughout the UWMP, as reported in Table 2-3

NOTES:

SB X7-7 Table 4-A: Volume Entering the Distribution System(s)

Complete one table for each source.

Name of Source Import Water

This water source is:

☐

The supplier's own water source

☒

A purchased or imported source

Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Entering Distribution System	Meter Error Adjustment* <i>Optional</i> (+/-)	Corrected Volume Entering Distribution System
--	--	--	---

10 to 15 Year Baseline - Water into Distribution System

Year 1	1995	20380.043	0	20,380
Year 2	1996	23456.261	0	23,456
Year 3	1997	25940.557	0	25,941
Year 4	1998	25532.2188	0	25,532
Year 5	1999	27303.6832	0	27,304
Year 6	2000	27538.64	0	27,539
Year 7	2001	27753.0574	0	27,753
Year 8	2002	30804.8504	0	30,805
Year 9	2003	27394.4715	0	27,394
Year 10	2004	28241.058	0	28,241
Year 11	0			0
Year 12	0			0
Year 13	0			0
Year 14	0			0
Year 15	0			0

5 Year Baseline - Water into Distribution System

Year 1	2003	27394.4715	0	27,394
Year 2	2004	28241.058	0	28,241
Year 3	2005	29229.776	0	29,230
Year 4	2006	27816.004	0	27,816
Year 5	2007	27412.17	0	27,412

2015 Compliance Year - Water into Distribution System

2015	20545.262	0	20,545
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** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*

NOTES: Assumed Cupertino Lease is 100% Import

SB X7-7 Table 4-A: Volume Entering the Distribution

Name of Source	Local Surface Water
-----------------------	---------------------

This water source is:



The supplier's own water source



A purchased or imported source

Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Entering Distribution System	Meter Error Adjustment* <i>Optional</i> (+/-)	Corrected Volume Entering Distribution System
---	--	--	---

10 to 15 Year Baseline - Water into Distribution System

Year 1	1995	5275.475	0	5,275
Year 2	1996	5907.29	0	5,907
Year 3	1997	4880.61	0	4,881
Year 4	1998	6246.451	0	6,246
Year 5	1999	5232.406	0	5,232
Year 6	2000	4380.92	0	4,381
Year 7	2001	2514.68	0	2,515
Year 8	2002	2661.3	0	2,661
Year 9	2003	5670.266	0	5,670
Year 10	2004	4258	0	4,258
Year 11	0			0
Year 12	0			0
Year 13	0			0
Year 14	0			0
Year 15	0			0

5 Year Baseline - Water into Distribution System

Year 1	2003	5670.266	0	5,670
Year 2	2004	4258	0	4,258
Year 3	2005	4938.262	0	4,938
Year 4	2006	6285.2	0	6,285
Year 5	2007	1821.373	0	1,821

2015 Compliance Year - Water into Distribution System

2015	1,553	0	1,553
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** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*

NOTES:

SB X7-7 Table 4-A: Volume Entering the Distribution

Name of Source	Groundwater
-----------------------	-------------

This water source is:



The supplier's own water source



A purchased or imported source

Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Entering Distribution System	Meter Error Adjustment* <i>Optional</i> (+/-)	Corrected Volume Entering Distribution System
---	--	--	---

10 to 15 Year Baseline - Water into Distribution System

Year 1	1995	20365.641	0	20,366
Year 2	1996	19142.525	0	19,143
Year 3	1997	20844.07	0	20,844
Year 4	1998	16546.566	0	16,547
Year 5	1999	18432.767	0	18,433
Year 6	2000	19781.471	0	19,781
Year 7	2001	21357.997	0	21,358
Year 8	2002	18402.419	0	18,402
Year 9	2003	16160.188	0	16,160
Year 10	2004	18090.787	0	18,091
Year 11	0			0
Year 12	0			0
Year 13	0			0
Year 14	0			0
Year 15	0			0

5 Year Baseline - Water into Distribution System

Year 1	2003	16160.188	0	16,160
Year 2	2004	18090.787	0	18,091
Year 3	2005	13633.412	0	13,633
Year 4	2006	14233.748	0	14,234
Year 5	2007	21428.118	0	21,428

2015 Compliance Year - Water into Distribution System

2015	12,346	0	12,346
-------------	--------	---	--------

** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*

NOTES:

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

Baseline Year <i>Fm SB X7-7 Table 3</i>		Service Area Population <i>Fm SB X7-7 Table 3</i>	Annual Gross Water Use <i>Fm SB X7-7 Table 4</i>	Daily Per Capita Water Use (GPCD)
10 to 15 Year Baseline GPCD				
Year 1	1995	871,012	46,021	145
Year 2	1996	868,588	48,506	153
Year 3	1997	869,926	51,665	163
Year 4	1998	886,121	48,325	149
Year 5	1999	897,433	50,969	156
Year 6	2000	901,982	51,701	157
Year 7	2001	903,898	51,626	156
Year 8	2002	905,058	51,869	157
Year 9	2003	907,683	49,225	149
Year 10	2004	910,243	50,590	152
<i>Year 11</i>	0	0	0	
<i>Year 12</i>	0	0	0	
<i>Year 13</i>	0	0	0	
<i>Year 14</i>	0	0	0	
<i>Year 15</i>	0	0	0	
10-15 Year Average Baseline GPCD				154
5 Year Baseline GPCD				
Baseline Year <i>Fm SB X7-7 Table 3</i>		Service Area Population <i>Fm SB X7-7 Table 3</i>	Gross Water Use <i>Fm SB X7-7 Table 4</i>	Daily Per Capita Water Use
Year 1	2003	907,683	49,225	149
Year 2	2004	910,243	50,590	152
Year 3	2005	916,473	47,801	143
Year 4	2006	924,214	48,335	143
Year 5	2007	928,575	50,662	149
5 Year Average Baseline GPCD				147
2015 Compliance Year GPCD				
2015		982,750	34,445	96
NOTES:				

SB X7-7 Table 6: Gallons per Capita per Day*Summary From Table SB X7-7 Table 5*

10-15 Year Baseline GPCD	154
5 Year Baseline GPCD	147
2015 Compliance Year GPCD	96

NOTES:

SB X7-7 Table 7: 2020 Target Method*Select Only One*

Target Method		Supporting Documentation
☐	Method 1	SB X7-7 Table 7A
☐	Method 2	SB X7-7 Tables 7B, 7C, and 7D <i>Contact DWR for these tables</i>
☐	Method 3	SB X7-7 Table 7-E
☒	Method 4	Method 4 Calculator

NOTES:

SB X7-7 Table 7-A: Target Method 1	
20% Reduction	
10-15 Year Baseline	2020 Target
GPCD	GPCD
154	123
NOTES:	

SB X7-7 Table 7-E: Target Method 3

Agency May Select More Than One as Applicable	Percentage of Service Area in This Hydrological Region	Hydrologic Region	"2020 Plan" Regional Targets	Method 3 Regional Targets (95%)
☐		North Coast	137	130
☐		North Lahontan	173	164
☐		Sacramento River	176	167
☒		San Francisco Bay	131	124
☐		San Joaquin River	174	165
☐		Central Coast	123	117
☐		Tulare Lake	188	179
☐		South Lahontan	170	162
☐		South Coast	149	142
☐		Colorado River	211	200
Target <i>(If more than one region is selected, this value is calculated.)</i>				0
NOTES:				

SB X7-7 Table 7-F: Confirm Minimum Reduction for 2020 Target

5 Year Baseline GPCD <i>From SB X7-7 Table 5</i>	Maximum 2020 Target*	Calculated 2020 Target <i>Fm Appropriate Target Table</i>	Confirmed 2020 Target
147	140	127.3	127

* Maximum 2020 Target is 95% of the 5 Year Baseline GPCD

NOTES:

SB X7-7 Table 8: 2015 Interim Target GPCD

Confirmed 2020 Target <i>Fm SB X7-7 Table 7-F</i>	10-15 year Baseline GPCD <i>Fm SB X7-7 Table 5</i>	2015 Interim Target GPCD
127	154	140

NOTES:

SB X7-7 Table 9: 2015 Compliance

Actual 2015 GPCD	2015 Interim Target GPCD	Optional Adjustments <i>(in GPCD)</i>					2015 GPCD <i>(Adjusted if applicable)</i>	Did Supplier Achieve Targeted Reduction for 2015?
		Extraordinary Events	Weather Normalization	Economic Adjustment	TOTAL Adjustments	Adjusted 2015 GPCD		
96	140	<i>From Methodology 8 (Optional)</i>	<i>From Methodology 8 (Optional)</i>	<i>From Methodology 8 (Optional)</i>	0	96.02507919	96.02507919	YES

NOTES:

Appendix E

Senate Bill x7-7 2020 Compliance Forms

SB X7-7 Table 0: Units of Measure Used in 2020 UWMP*

(select one from the drop down list)

Million Gallons

**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: 2010 Census data used as the foundational building block for estimates, supplemented with population projection data from Association of Bay Area Governments (ABAG). Method reviewed and accepted by DWR on March 9, 2021 via email.

SB X7-7 Table 3: 2020 Service Area Population	
2020 Compliance Year Population	
2020	997,817
NOTES:	

SB X7-7 Table 4: 2020 Gross Water Use

Compliance Year 2020	2020 Volume Into Distribution System <i>This column will remain blank until SB X7-7 Table 4-A is completed.</i>	2020 Deductions					2020 Gross Water Use
		Exported Water *	Change in Dist. System Storage* (+/-)	Indirect Recycled Water <i>This column will remain blank until SB X7-7 Table 4-B is completed.</i>	Water Delivered for Agricultural Use*	Process Water <i>This column will remain blank until SB X7-7 Table 4-D is completed.</i>	
	39,592			-		-	39,592

* **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	Import 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 <i>Optional</i> (+/-)	Corrected Volume Entering Distribution System
	20,949	-	20,949
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	Local Surface 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 <i>Optional</i> (+/-)	Corrected Volume Entering Distribution System
	1,276		1,276
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 <i>Optional</i> (+/-)	Corrected Volume Entering Distribution System
	17,360		17,360
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	Raw 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 <i>Optional</i> (+/-)	Corrected Volume Entering Distribution System
	7		7
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 <i>Fm SB X7-7 Table 4</i>	2020 Population <i>Fm SB X7-7 Table 3</i>	2020 GPCD
39,592	997,817	109
NOTES:		

SB X7-7 Table 9: 2020 Compliance

Actual 2020 GPCD ¹	Optional Adjustments to 2020 GPCD					2020 Confirmed Target GPCD ^{1, 2}	Did Supplier Achieve Targeted Reduction for 2020?
	Enter "0" if Adjustment Not Used			TOTAL Adjustments ¹	Adjusted 2020 GPCD ¹ <i>(Adjusted if applicable)</i>		
	Extraordinary Events ¹	Weather Normalization ¹	Economic Adjustment ¹				
109	-	-	-	-	109	127	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 F

Energy Intensity Calculations

Urban Water Supplier:

San Jose Water Company

Water Delivery Product (If delivering more than one type of product use Table O-1C)

Retail Potable Deliveries

Table O-1A: Recommended Energy Reporting - Water Supply Process Approach

Enter Start Date for Reporting Period	1/1/2020		Urban Water Supplier Operational Control							
End Date	12/30/2020		Water Management Process						Non-Consequential Hydropower (if applicable)	
☐ Is upstream embedded in the values reported?										
Water Volume Units Used			Extract and Divert	Place into Storage	Conveyance	Treatment	Distribution	Total Utility	Hydropower	Net Utility
Volume of Water Entering Process		MG	18331	0	0	1275	39592	39592	0	39592
Energy Consumed (kWh)		N/A	28709227	0	0	1350312	10739766	40799305	0	40799305
Energy Intensity (kWh/vol. converted to MG)		N/A	1566.2	#DIV/0!	#DIV/0!	1059.1	271.3	1030.5	#DIV/0!	1030.5

Quantity of Self-Generated Renewable Energy
3882 kWh

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

Data Quality Narrative:
San Jose Water Company creates an annual energy cost report to determine the various costs to produce water from all water sources. Water volumes, energy consumption, and costs are metered and recorded for all sources of energy consumption, including groundwater stations, intakes, pressure systems, filter plants, boosters, and any additional sources. The quantity of self-generated renewable energy (solar) was calculated from Pacific Gas and Electric (PG&E) energy statements from 2020.

Narrative:
San Jose Water Company has three potable water sources: groundwater produced at well fields, local surface water derived from creeks and treated at water treatment plants, and treated purchased water from Valley Water. The energy cost report aggregates information pertaining to these sources into the following categories: groundwater production, boosters, filter plants, pressure systems, intakes, and miscellaneous (energy use for office buildings, regulator stations, tank/reservoir sites, and other locations). Much of the purchased water from Valley Water is piped into SJW's distribution system at various turnout locations without pumping or major associated energy use on SJW's end. For the purposes of this table, the following categorizations were made: groundwater production and intakes were considered "extract and divert"; filter plants were considered "treatment"; and boosters, pressure systems, and miscellaneous uses (excluding office building) were considered "distribution". Energy use associated with office buildings totaled 561,061 kWh and was excluded from this calculation. There are exceptions to these broad categorizations. For example, some of the reported groundwater production energy consumption is used to treat groundwater, and some of the reported intake energy consumption is used for conveyance. The total volume of water entering the distribution system matches the amount in Table 4-1 of SJW's 2020 UWMP.

Appendix G

SJW's Schedule 14.1

SUPPLEMENT **SCHEDULE No. 14.1** (N)
WATER SHORTAGE CONTINGENCY PLAN
WITH STAGED MANDATORY REDUCTIONS AND DROUGHT SURCHARGES

APPLICABILITY

This schedule is applicable to water customers served under all potable tariff rate schedules authorized by the Commission for the utility. It is effective in times of mandatory water conservation after Commission approval and only for the period noted in the Special Condition Section below:

TERRITORY

Portions of Cupertino, San Jose, and Santa Clara, and in Campbell, Los Gatos, Monte Sereno, and Saratoga and in contiguous territory in the County of Santa Clara.

STAGED REDUCTION OF WATER USAGE AND MANDATORY RESTRICTIONS**STAGE 1 - CONSERVATION – NON-ESSENTIAL OR UNAUTHORIZED USES**

Stage 1 is a call for voluntary conservation. This stage will be called by SJWC when customers are asked to meet conservation targets. Outdoor irrigation limits may be declared specifying the number of days per week irrigation will be allowed.

The following non-essential or unauthorized uses of water are declared to be a wasteful uses of water and are subject to the terms and conditions of Rule No. 11:

1. Limits on Watering: Watering or irrigating of outside plants, lawn, landscape, and turf areas with potable water using a landscape irrigation system or a watering device that is not continuously attended is limited to no more than 15 minutes of watering per day per station, with no watering between 10:00 a.m. and 8:00 p.m. This provision does not apply to landscape irrigation zones that exclusively use drip-type irrigation systems. This provision also does not apply to low precipitation sprinkler systems that apply water at or less than 1.0 inch per hour. This provision also does not apply to watering or irrigating by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive action shut-off nozzle or device that causes it to cease dispensing water immediately when not in use, or for the express purpose of adjusting or repairing an irrigation system. However no irrigation can occur regardless of method that results in runoff.
2. Use of potable water for watering outside plants, lawn, landscape, and turf areas during and up to 48 hours after measurable rainfall.
3. Obligation to Fix Leaks, Breaks or Malfunctions: Use of water through any broken or defective plumbing fixture, sprinkler, watering or irrigation system on the customer's premises when the utility has notified the customer in writing to repair the broken or defective plumbing fixture, sprinkler, watering or irrigation system, and the customer has failed to make such repairs within 5 business days after receipt of such notice.
4. Limits on Washing Vehicles: Use of potable water through a hand-held hose for washing cars, buses, boats, trailers, aircraft or other vehicles without a positive shut-off nozzle or device that causes it to cease dispensing water immediately when not in use.

(Continued)

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TITLE

SUPPLEMENT SCHEDULE No. 14.1
WATER SHORTAGE CONTINGENCY PLAN
WITH STAGED MANDATORY REDUCTIONS AND DROUGHT SURCHARGES
(Continued)

(N)

STAGE 1 CONSERVATION NON-ESSENTIAL OR UNAUTHORIZED WATER USES (Continued)

5. Operation of commercial car washes that do not recycle the potable water used as required by the California Water Code Sections 10950-10953.
6. The serving of water, other than upon request, in eating and drinking establishments, including but not limited to restaurants, hotels, cafes, bars, or other public places where food or drink are served and/or purchased.
7. Operators of hotels and motels are to provide guests with the option of choosing not to have towels and linens laundered daily and/or to require hotels and motels to prominently display a notice of this option in each guest bathroom using clear and easily understood language.
8. No Excessive Water Flow or Runoff: The use of potable water for washing buildings, structures, sidewalks, walkways, driveways, patios, tennis courts, or other hard-surfaced, non-porous areas in a manner that results in run-off or a waste of water.
9. The use of potable water in a fountain or other decorative water device that does not have a fully automatic recirculation system, or the filling or topping off of decorative lakes or ponds, except where the water is part of a recirculating system.
10. Other restrictions on use of potable water as prescribed from time to time by the Commission, SJWC, or another governing body or agency.

STAGED REDUCTIONS OF WATER USAGE AND MANDATORY RESTRICTIONS

If a water supply shortage exists or is threatening, or if SJWC is unable to meet conservation targets as set by a wholesale provider or governing body or agency, in addition to the restrictions on wasteful water use practices outlined above the following restrictions may be imposed by the utility in stages, as indicated below. Failure to comply with these mandatory restrictions will be deemed a wasteful and unreasonable use of water and may result in the installation of a flow restrictor, discontinuance of service, or other actions as authorized by the utility's Rule 11.

STAGE 2 -WATER REDUCTION NEEDED

Stage 2 -Water Reduction Needed occurs when the Commission or SJWC determines that further measures are needed to reduce water consumption. In addition to the unauthorized uses of water listed in Section B, the following restrictions may be imposed:

1. Limits on Watering Days: Watering or irrigating of lawns, landscape or other vegetated areas with potable water is limited to no more than three days per week, depending on the severity of the shortage. If three days per week irrigation is called for then irrigation will be allowed Monday, Wednesday, and Friday for odd numbered and numberless addresses and will be allowed on Tuesday, Thursday and Saturday for even numbered addresses.
2. Use of potable water for watering streets with trucks or other vehicles, except for initial wash-down for construction purposes (if street sweeping is not feasible), or to protect the health and safety of the public or if recycled water is reasonably available as determined by a government agency.

(N)

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SCHEDULE No. 14.1
WATER SHORTAGE CONTINGENCY PLAN
WITH STAGED MANDATORY REDUCTIONS AND DROUGHT SURCHARGES
(Continued)

STAGE 2 -WATER REDUCTION NEEDED (Continued):

3. Use of potable water for construction purposes, including washing streets, backfill, and dust control, if other actions to accomplish the same purposes without water are feasible and/or permitted or if recycled water is reasonably available as determined by a government agency. (D)
4. Other restrictions on use of potable water as prescribed by the Commission, SJWC, or another governing body or agency. (L)

STAGE 3 - CRITICAL WATER REDUCTION

Stage 3 Water Shortage occurs when the Stage 2 limitations are deemed insufficient to achieve identified water usage goals established by authorized government entities. The following restrictions will be enacted:

1. Limits on Watering Days: Watering or irrigating of lawns, landscape or other vegetated area with potable water is limited to three days per week. Irrigation will be allowed on Mondays, Thursdays and Saturdays for odd numbered and numberless addresses and will be allowed on Tuesday, Friday and Sunday for even numbered addresses. (D)
2. Limits on Filling Ornamental Lakes or Ponds: prohibition of the use of potable water for filling or re-filling decorative fountains, ornamental lakes or ponds except to the extent needed to sustain aquatic life, provided that such animals are of significant value and have been actively managed within the water feature prior to declaration of a supply shortage level under Rule 14.1. (L)
3. Other restrictions on use of potable water as prescribed by the Commission, SJWC, or another governing body or agency. (L)

STAGE 4 -EMERGENCY WATER REDUCTION

Stage 4 (Emergency Water Reduction) occurs when the Stage 3 limitations are deemed insufficient to achieve identified water usage goals established by authorized government entities. The following restrictions, in addition to those provided for in the preceding stages, will be enacted:

(Continued)

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SUPPLEMENT**SCHEDULE No. 14.1**

(N)

**WATER SHORTAGE CONTINGENCY PLAN
WITH STAGED MANDATORY REDUCTIONS AND DROUGHT SURCHARGES
(Continued)**

STAGE 4 -EMERGENCY WATER REDUCTION (continued)

1. No Watering or Irrigating: Watering or irrigation of lawn, landscape or other vegetated area with potable water is prohibited. This restriction does not apply to the following categories of use:
 - i. Maintenance of vegetation, including trees and shrubs, that are watered using a hand-held bucket or similar container, hand-held hose equipped with a positive action shut-off nozzle or device;
 - ii. Maintenance of existing landscape necessary for fire protection;
 - iii. Maintenance of existing landscape for soil erosion control;
 - iv. Maintenance of plant materials identified to be rare or essential to the well-being of a protected species;
 - v. Maintenance of landscape within active public parks and playing fields, day care centers, golf course greens, fringes and tee boxes, and school grounds, provided that such irrigation does not exceed 2 days per week.
2. The failure to repair any leak, break, or other malfunction in a customer's domestic or outdoor water system within 48 hours of notification by the utility, unless other, specific arrangements are made with and agreed to by the utility.
3. Other restrictions on use of potable water as prescribed by the Commission, SJWC, or another governing body or agency.

**WATER SHORTAGE CONTINGENCY PLAN WITH STAGED MANDATORY REDUCTIONS
AND DROUGHT SURCHARGES – SCHEDULE NO. 14.1**

1. Upon the declaration of a water shortage emergency by a water wholesaler, government agency or the governing body of a distributor of a public water supply (per Water Code Section 350), SJWC may request addition of a Schedule No. 14.1 – Water Shortage Contingency Plan With Staged Mandatory Reductions and Drought Surcharges tariff, via a Tier 2 advice letter, with full justification. The utility may not activate Schedule No. 14.1 until it has been authorized to do so by the Commission, as delegated to the Division of Water & Audits.
 - a. A staged Schedule No. 14.1 that has been authorized by the Commission shall remain dormant until triggered by specific conditions detailed in the Schedule No. 14.1 tariff and SJWC has requested and received authorization for activating a stage by the Commission.
 - b. Notice of the Tier 2 advice letter and associated public participation hearing if required shall be provided to customers through a bill insert or a direct mailing.
 - c. The Utility shall comply with all requirements of Sections 350-358 of the California Water Code.

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(N)

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SCHEDULE No. 14.1
SUPPLEMENT WATER SHORTAGE CONTINGENCY PLAN
WITH STAGED MANDATORY REDUCTIONS AND DROUGHT SURCHARGES
(Continued)

(N)

STAGED MANDATORY WATER REDUCTIONS – SCHEDULE NO. 14.1 (Continued)

- d. The Tier 2 advice letter requesting the addition of a Schedule No. 14.1 shall include but not be limited to:
 - i. The proposed Schedule No. 14.1 tariff, which shall include but not be limited to:
 1. Applicability;
 2. Applicable Territory;
 3. A detailed description of each Stage of Mandatory Water Reductions;
 4. A detailed description of the Trigger that Activates each Stage of Mandatory Water Reductions;
 5. A detailed description of each water use restriction, prohibition and/or reduction level for each Stage of Mandatory Water Reduction
 6. Water use violation levels, written warning levels, applicable rate schedules and drought surcharges, associated penalties, surcharges or fees, if applicable, and exception procedures
 7. Conditions for installation of a flow restrictor,
 8. Charges for removal of flow restrictors, and
 9. Special Conditions
 - ii. Justification for, and documentation and calculations in support of the Schedule, including but not limited to each item in B.1.d.i above.
2. Number of Stages requested by each utility/district/water system may vary, depending on local conditions and specifics of the water shortage event.
3. SJWC may enact a particular stage of Schedule 14.1:
 - a. If the Commission, wholesale water supplier, or other government agency declares an emergency requiring mandatory water use restrictions, or
 - b. If a government agency declares a state of emergency in response to severe drought conditions, earthquake or other catastrophic event that severely reduces the utility's water supply, or
 - c. If the implementation of mandatory restriction levels set by the Commission, utility, wholesale water supplier, or government agency are insufficient, or
 - d. If the utility is unable to address conservation levels set by itself or governing body or agency, or
 - e. If the utility chooses to subsequently activate a different stage.
4. When enacting a particular stage of Schedule 14.1, SJWC shall file a Tier 2 advice letter to request activation.
5. The Tier 2 advice letter requesting activation of a Schedule No. 14.1 shall include but not be limited to:
 - a. Justification for activating this particular stage of reductions, as well as the period during which this particular stage of mandatory restrictions and reductions measures will be in effect.
 - b. Notification to its customers as detailed below.

(N)

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TITLE

SUPPLEMENT

SCHEDULE No. 14.1 WATER SHORTAGE CONTINGENCY PLAN

SLIP/SUB SHEET^(N)

WITH STAGED MANDATORY REDUCTIONS AND DROUGHT SURCHARGES

(Continued)

ENFORCEMENT OF STAGED MANDATORY WATER REDUCTIONS

1. The staged reduction of water usage and mandatory restrictions in Section C of this Plan become enforceable through additional tariff rates when the Schedule No. 14.1-Water Shortage Contingency Plan with Staged Mandatory Reductions and Drought Surcharges program is implemented.
2. The utility may, after one written warning, install a flow-restricting device on the service line of any customer observed by utility personnel to be using water for any non-essential or unauthorized use as defined in above.
3. A flow restrictor shall be capable of providing the premise with a minimum of 5 gallons per minute. The restricting device may be removed only by the utility, only after a three-day period has elapsed, and only upon payment of the appropriate removal charge as set forth in Schedule No. 14.1.
4. After the removal of the restricting device, if any non-essential or unauthorized use of water continues, the utility may install another flow-restricting device without written notice. This device shall remain in place until water supply conditions warrant its removal and until the appropriate charge for removal has been paid to the utility.
5. Any tampering with flow restricting device by customer can result in discontinuation of water use.
6. If, despite installation of such flow-restricting device pursuant to the provisions of the previous enforcement conditions, any such non-essential or unauthorized use of water continues, then the utility may discontinue water service to such customer. In such latter event, a charge as provided in Rule No. 11 shall be paid to the utility as a condition to restoration of service.

APPEAL PROCEDURE

1. Any customer who seeks a variance from any of the provisions of this water shortage contingency plan shall notify the utility in writing, explaining in detail the reason for such a variation. The utility shall respond to each such request in writing.

Except as set forth in this Section, no person shall have any right or claim in law or in equity, against the utility because of, or as a result of, any matter or thing done or threatened to be done pursuant to the provisions of the Water Shortage Contingency Plan.

NOTICE

1. When SJWC requests the addition of a Schedule 14.1 –Water Shortage Contingency Plan with Stage Mandatory Reductions and Drought Surcharges tariff, via a Tier 2 advice letter, it shall provide customer notice of the Tier 2 advice letter and associated public hearing, if necessary. Notice will be provided to customers through bill inserts or direct mailing, and through a posting in the local newspaper of circulation. The public meeting shall be held after the utility files the Tier 2 advice letter, and before the Commission authorizes the addition of Schedule 14.1 to the tariff except in cases of emergency water shortages approved by the Division of Water & Audits.

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TITLE

SCHEDULE No. 14.1
WATER SHORTAGE CONTINGENCY PLAN
WITH STAGED MANDATORY REDUCTIONS AND DROUGHT SURCHARGES
(Continued)

NOTICE (Continued)

- a. SJWC shall consult with the Division of Water and Audits staff prior to filing the advice letter, in order to determine the details of the public meeting.
2. If activation of Schedule No. 14.1 occurs one year or more since the public hearing associated with adding Schedule No. 14.1 to its tariffs, then the utility shall conduct a public hearing pursuant to California Water Code Section 351 prior to activating the rationing stage.
3. During the period that a stage of Schedule No. 14.1 is activated, SJWC shall provide customers with updates regarding its water supply status and the results of customers' conservation and water use reduction efforts.
4. During the period that a stage of Schedule No. 14.1 is activated, SJWC shall provide customers with updates regarding its water supply status and the results of customers' conservation and water use reduction efforts.

DROUGHT ALLOCATIONS AND DROUGHT SURCHARGES**Residential**

The Drought Allocation for residential customers served under all potable tariff rate schedules is based on average residential customer usage in the Base Year 2013 for each month, less the percentage of conservation being required. In this instance, the required percentage reduction is 20%, so the Drought Allocation is 80% of the year 2013 Average Monthly Residential Usage for the month. Allocations falling between full hundreds of cubic feet (ccf) will be rounded up to the next full one hundred cubic feet.

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Residential Allocation Plan		
2013 Base Year	2013 Average Monthly Residential Usage (ccf)	Monthly Drought Allocation (ccf)
Jan*	10	9
Feb*	9	9
Mar*	9	9
Apr*	11	9
May	14	12
Jun	16	13
Jul	19	16
Aug	19	16
Sep	19	16
Oct	17	14
Nov	17	14
Dec	14	12

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*Minimum Monthly Drought Allocation based on minimum average usage for a residential household

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SCHEDULE No. 14.1
WATER SHORTAGE CONTINGENCY PLAN
WITH STAGED MANDATORY REDUCTIONS AND DROUGHT SURCHARGES
(Continued)

DROUGHT ALLOCATIONS AND DROUGHT SURCHARGES (continued)

Landscape Services

The Drought Allocation for each landscape customer served under all potable tariff rate schedules is based upon the individual landscape customer's monthly usage during the Base Year 2013. The Monthly Drought Allocation is then calculated as 100% of monthly usage during Base Year 2013 minus the reduction percentage required. In this instance, a 20% required reduction percentage results in a 80% allocation. Allocations falling between full one hundreds of cubic feet will be rounded up to the next full hundred cubic feet.

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DROUGHT ALLOCATION ADJUSTMENTS

1. Any customer who seeks a variance from any of the provisions of this water shortage contingency plan shall notify the utility in writing, explaining in detail the reason for such a variation. The utility shall respond to each such request in writing.
2. Any customer not satisfied with the utility's response may file an appeal with the Director of the Division of Water & Audits.
3. If the customer disagrees with such disposition, the customer shall have the right to file a formal complaint with the Commission. Except as set forth in this Section, no person shall have any right or claim in law or in equity, against the utility because of, or as a result of, any matter or thing done or threatened to be done pursuant to the provisions of the Water Shortage Contingency Plan.

DROUGHT SURCHARGE

Excess water usage associated with exceeding the Monthly Drought Allocation will result in a Drought Surcharge. The Drought Surcharge will be assessed in addition to all other base charges allowed under the applicable tariffs authorized by the CPUC. The Drought Surcharge will be applied to the customer's bill based on the amount of usage that exceeds the Drought Allocation as follows:

For Residential Customers:

Excess usage over monthly Drought Allocation up to 2013 Average Monthly Usage	\$3.5634 per ccf
Excess usage over 2013 Average Monthly	\$7.1268 per ccf

For Landscape Customers:

Excess usage over monthly Drought Allocation up to 2013 Average Monthly Usage	\$3.5634 per ccf
Excess usage over 2013 Average Monthly Residential Usage	\$7.1268 per ccf

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**SCHEDULE No. 14.1
WATER SHORTAGE CONTINGENCY PLAN
WITH STAGED MANDATORY REDUCTIONS AND DROUGHT SURCHARGES
(Continued)**

FLOW RESTRICTOR REMOVAL FEE

The charge for removal of a flow-restricting device is:

<u>Meter Size</u>	<u>Removal Fee</u>
5/8" to 1"	\$45
1-1/2 to 2"	\$90
3" and Larger	Actual Cost

SPECIAL CONDITIONS

1. Drought Allocations and Drought Surcharges are suspended effective February 1, 2017. (C)
2. Schedule 14.1 is effective until terminated by an advice letter filing to the Commission, on five days' notice, when the utility determines that mandatory restrictions are no longer necessary.
3. Schedule 14.1 shall not apply to those covered under the medical exemption provided for under Rule No. 11.B.1.e(1).
4. Drought Surcharges will be separately identified on each bill.
5. All bills are subject to the reimbursement fee set forth on Schedule No. UF.
6. All monies collected by the utility through surcharges or fees shall be booked to SJWC's existing Mandatory Conservation Memorandum Account (MCRAMA) or a similar memorandum account to offset lost revenues.
7. All expenses incurred by the utility to implement Rule 14.1 and Schedule 14.1 that have not been considered in a General Rate Case or other proceeding shall be recoverable by the utility if determined to be reasonable by Commission. These additional monies shall be accumulated by the utility in a separate memorandum account, for disposition as directed or authorized from time to time by the Commission.
8. Other restrictions on use of potable water as prescribed in Rule No. 14.1 and from time to time by the SWRCB, the CPUC, SJWC, or other governing body or agency.
9. None of the restrictions apply to the use of recycled water. The Limits on Watering and Limits on Watering Days shall not apply (except for Stage 4) to commercial nurseries, golf courses, or other water-dependent businesses, unless specifically required by SJWC or a governing jurisdiction.

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Appendix H

SJW's Rule 14.1

SUPPLEMENT

RULE NO. 14.1 WATER SHORTAGE CONTINGENCY PLAN

(D)
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The water supply for San Jose Water Company (SJWC) may be interrupted or reduced due to a variety of circumstances, for instance, in response to a drought or a catastrophic event, such as an earthquake or a fire that damages water delivery and storage facilities, or a power outage that affects water treatment or pumping operations. This Water Shortage Contingency Plan (Plan) enables SJWC to respond efficiently and effectively to all water shortage contingencies.

A. GENERAL INFORMATION

1. Wasteful water use practices, as outlined in Section B of this Plan, constitute prohibited, non-essential or unauthorized water use, and are declared to be a waste of water, subject to the terms and conditions of Rule 11, which allow the utility to discontinue service after due notice. The utility's customers shall be notified of these conservation measures through a bill insert or a direct mailing, and/or through other communications, pursuant to the direction of the California Public Utilities Commission (Commission).
2. If water supplies are projected to be insufficient to meet normal customer demand for reasons beyond the control of the utility, or in the event that the utility is directed under an emergency regulation by an authorized government agency, commission or official, SJWC may implement additional water saving conservation measures and mandatory restrictions, as described in Section C of this Plan.
3. Should supply conditions or government directives dictate, prior to, or in response to, executive orders, state agency-promulgated emergency regulations, or a declaration of emergency issued by a water wholesaler or other government agency, SJWC may request permission from the Commission to add a Schedule 14.1 – Water Shortage Contingency Plan with Stage Mandatory Reductions and Drought Surcharges tariff as set forth in Section D. If SJWC is without a full decoupling WRAM in one or more ratemaking areas it may request a lost revenue memorandum account at that time.
4. SJWC shall file a Tier 2 advice letter to request activation of a particular stage of Schedule 14.1 – Water Shortage Contingency Plan with Stage Mandatory Reductions and Drought Surcharges, as set forth in Section D.
 - a. If the Commission or SJWC declares an emergency requiring mandatory water use restrictions, or
 - b. If a government agency with legal jurisdiction over SJWC or its service area declares a state of emergency in response to severe drought conditions, earthquake or other catastrophic event that severely reduces the utility's water supply, or
 - c. If voluntary conservation levels or mandatory restrictions on certain uses of water, set by the Commission or SJWC are insufficient, or
 - d. If a Declaration of Emergency is made by the SJWC or its governing agency, or
 - e. If the utility chooses to subsequently activate a different stage.

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SUPPLEMENT

RULE NO. 14.1 WATER SHORTAGE CONTINGENCY PLAN

(D)
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A. GENERAL INFORMATION (Continued)

5. All monies collected by the utility through surcharges or fees shall be booked to the WRAM or a similar memorandum account to offset recovery of lost revenues.
6. All expenses incurred by the utility to implement Rule 14.1 and Schedule 14.1 that have not been considered in a General Rate Case or other proceeding shall be recoverable by the utility if determined to be reasonable by Commission. These additional monies shall be accumulated by the utility in a separate memorandum account, for disposition as directed or authorized from time to time by the Commission.
7. When Schedule 14.1 is in effect and the utility determines that water supplies are again sufficient to meet normal demands, and mandatory restrictions are no longer necessary, the utility shall seek Commission approval via a Tier 1 advice letter to deactivate the particular stage of mandatory reductions or allocations that had been authorized.
8. None of the restrictions below apply to the use of recycled water. The Limits on Watering and Limits on Watering Days shall not apply (except for Stage 4) to commercial nurseries, golf courses, or other water-dependent businesses, unless specifically required by SJWC or a governing jurisdiction.

B. CONSERVATION – NONESSENTIAL OR UNAUTHORIZED USES (STAGE 1 – CONSERVATION AND OUTREACH)

Stage 1 (Conservation and Outreach) is a call for voluntary conservation. This stage will be called by SJWC when customers are asked to meet conservation targets. Outdoor irrigation limits may be declared specifying the number of days per week irrigation will be allowed.

The following non-essential or unauthorized uses of water are declared to be a wasteful of water and are subject to the terms and conditions of Rule No. 11:

1. Limits on Watering: Watering or irrigating of outside plants, lawn, landscape, and turf areas with potable water using a landscape irrigation system or a watering device that is not continuously attended is limited to no more than 15 minutes of watering per day per station, with no watering between 10:00 a.m. and 8:00 p.m. This provision does not apply to landscape irrigation zones that exclusively use drip-type irrigation systems. This provision also does not apply to low precipitation sprinkler systems that apply water at or less than 1.0 inch per hour. This provision also does not apply to watering or irrigating by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive action shut-off

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RULE NO. 14.1 WATER SHORTAGE CONTINGENCY PLAN

(D)
(N)

B. CONSERVATION -NON-ESSENTIAL OR UNAUTHORIZED WATER USES (Continued)

- nozzle or device that causes it to cease dispensing water immediately when not in use, or for the express purpose of adjusting or repairing an irrigation system. However no irrigation can occur regardless of method that results in runoff.
2. Use of potable water for watering outside plants, lawn, landscape, and turf areas during and up to 48 hours after measurable rainfall.
 3. Obligation to Fix Leaks, Breaks or Malfunctions: Use of water through any broken or defective plumbing fixture, sprinkler, watering or irrigation system on the customer's premises when the utility has notified the customer in writing to repair the broken or defective plumbing fixture, sprinkler, watering or irrigation system, and the customer has failed to make such repairs within 5 business days after receipt of such notice.
 4. Limits on Washing Vehicles: Use of potable water through a hand-held hose for washing cars, buses, boats, trailers, aircraft or other vehicles without a positive shut-off nozzle or device that causes it to cease dispensing water immediately when not in use.
 5. Operation of commercial car washes that do not recycle the potable water used as required by the California Water Code Sections 10950-10953.
 6. The serving of water, other than upon request, in eating and drinking establishments, including but not limited to restaurants, hotels, cafes, bars, or other public places where food or drink are served and/or purchased.
 7. Operators of hotels and motels are to provide guests with the option of choosing not to have towels and linens laundered daily and/or to require hotels and motels to prominently display a notice of this option in each guest bathroom using clear and easily understood language.
 8. No Excessive Water Flow or Runoff: The use of potable water for washing buildings, structures, sidewalks, walkways, driveways, patios, tennis courts, or other hard-surfaced, non-porous areas in a manner that results in run-off or a waste of water.
 9. The use of potable water in a fountain or other decorative water device that does not have a fully automatic recirculation system, or the filling or topping off of decorative lakes or ponds, except where the water is part of a recirculating system.
 10. Other restrictions on use of potable water as prescribed from time to time by the Commission, SJWC, or another governing body or agency.
- (Continued)

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RULE NO. 14.1
WATER SHORTAGE CONTINGENCY PLAN

C. STAGED REDUCTION OF WATER USAGE AND MANDATORY RESTRICTIONS

If a water supply shortage exists or is threatening, or if SJWC is unable to meet conservation targets as set by a wholesale provider or governing body or agency, in addition to the restrictions on wasteful water use practices outlined above the following restrictions may be imposed by the utility in stages, as indicated below. Failure to comply with these mandatory restrictions will be deemed a wasteful and unreasonable use of water and may result in the installation of a flow restrictor, discontinuance of service, or other actions as authorized by the utility's Rule 11.

STAGE 2 (WATER REDUCTION NEEDED): Stage 2 (Water Reduction Needed) occurs when the Commission or SJWC determines that further measures are needed to reduce water consumption. In addition to the unauthorized uses of water listed in Section B, the following restrictions may be imposed:

1. Limits on Watering Days: Watering or irrigating of lawns, landscape or other vegetated areas with potable water is limited to no more than three days per week, depending on the severity of the shortage. If three days per week irrigation is called for then irrigation will be allowed Monday, Wednesday, and Friday for odd numbered and numberless addresses and will be allowed on Tuesday, Thursday and Saturday for even numbered addresses.
2. Use of potable water for watering streets with trucks or other vehicles, except for initial wash-down for construction purposes (if street sweeping is not feasible), or to protect the health and safety of the public or if recycled water is reasonably available as determined by a government agency.
3. Use of potable water for construction purposes, including washing streets, backfill, and dust control, if other actions to accomplish the same purposes without water are feasible and/or permitted or if recycled water is reasonably available as determined by a government agency.
4. Other restrictions on use of potable water as prescribed by the Commission,
SJWC, or another governing body or agency.

(D)
(L)
(L)

(Continued)

(To be inserted by utility)

Issued by

(To be inserted by Cal. P.U.C.)

Advice No. 493

PALLE JENSEN

Date Filed 6-30-2016

Sr. Vice President,

Effective 7-1-2016

Regulatory Affairs

Resolution No. _____

Dec. No. _____

TITLE

RULE NO. 14.1
WATER SHORTAGE CONTINGENCY PLAN

STAGE 3 (CRITICAL WATER REDUCTION): Stage 3 Water Shortage occurs when the Stage 2 limitations are deemed insufficient to achieve identified water usage goals established by authorized government entities. The following restrictions will be enacted:

1. Limits on Watering Days: Watering or irrigating of lawns, landscape or other vegetated areas with potable water is limited to three days per week. Irrigation will be allowed on Mondays, Thursdays and Saturdays for odd numbered and numberless addresses and will be allowed on Tuesdays, Fridays and Sundays for even numbered addresses.
2. Limits on Filling Ornamental Lakes or Ponds: prohibition of the use of potable water for filling or re-filling decorative fountains, ornamental lakes or ponds except to the extent needed to sustain aquatic life, provided that such animals are of significant value and have been actively managed within the water feature prior to declaration of a supply shortage level under this Rule. (D)
(L)
(L)
(D)
3. Other restrictions on use of potable water as prescribed by the Commission, SJWC, or another governing body or agency. (L)
(L)

STAGE 4 (EMERGENCY WATER REDUCTION): Stage 4 Water Shortage occurs when the Stage 3 limitations are deemed insufficient to achieve identified water usage goals established by authorized government entities. The following restrictions will be enacted:

1. No Watering or Irrigating: Watering or irrigation of lawn, landscape or other vegetated area with potable water is prohibited. This restriction does not apply to the following categories of use:
 - i. Maintenance of vegetation, including trees and shrubs, that are watered using a hand-held bucket or similar container, hand-held hose equipped with a positive action shut-off nozzle or device;
 - ii. Maintenance of existing landscape necessary for fire protection;
 - iii. Maintenance of existing landscape for soil erosion control;
 - iv. Maintenance of plant materials identified to be rare or essential to the well-being of a protected species;
 - v. Maintenance of landscape within active public parks and playing fields, day care centers, golf course greens, fringes and tee boxes, and school grounds, provided that such irrigation does not exceed 2 days per week.
2. The failure to repair any leak, break, or other malfunction in a customer's domestic or outdoor water system within 48 hours of notification by the utility, unless other, specific arrangements are made with and agreed to by the utility.
3. Other restrictions on use of potable water as prescribed by the Commission, SJWC, or another governing body or agency.

(Continued)

(To be inserted by utility)

Issued by

(To be inserted by Cal. P.U.C.)

Advice No. 493

PALLE JENSEN

Date Filed 6-30-2016

Sr. Vice President,

Effective 7-1-2016

Dec. No. _____

Regulatory Affairs

Resolution No. _____

TITLE

SUPPLEMENT

RULE NO. 14.1

WATER SHORTAGE CONTINGENCY PLAN

D. WATER SHORTAGE CONTINGENCY PLAN WITH STAGED MANDATORY REDUCTIONS AND DROUGHT SURCHARGES – SCHEDULE NO. 14.1

1. Upon the declaration of a water shortage emergency by a water wholesaler, government agency or the governing body of a distributor of a public water supply (per Water Code Section 350), SJWC may request addition of a Schedule No. 14.1 Water Shortage Contingency Plan with Stage Mandatory Reductions and Drought Surcharges, via a Tier 2 advice letter, with full justification. The utility may not activate Schedule No. 14.1 until it has been authorized to do so by the Commission, as delegated to the Division of Water & Audits.
 - a. A staged Schedule No. 14.1 that has been authorized by the Commission shall remain dormant until triggered by specific conditions detailed in the Schedule No. 14.1 tariff and SJWC has requested and received authorization for activating a stage by the Commission.
 - b. Notice of the Tier 2 advice letter and associated public participation hearing if required shall be provided to customers through a bill insert or a direct mailing.
 - c. The Utility shall comply with all requirements of Sections 350-358 of the California Water Code.
 - d. The Tier 2 advice letter requesting the addition of a Schedule No. 14.1 shall include but not be limited to:
 - i. The proposed Schedule No. 14.1 tariff, which shall include but not be limited to:
 1. Applicability;
 2. Applicable Territory;
 3. A detailed description of each Stage of Mandatory Water Reductions;
 4. A detailed description of the Trigger that Activates each Stage of Mandatory Water Reductions;
 5. A detailed description of each water use restriction, prohibition and/or reduction level for each Stage of Mandatory Water Reduction
 6. Water use violation levels, written warning levels, applicable rate schedules and drought surcharges, and associated penalties, surcharges or fees, if applicable, and any exception procedures
 7. Conditions for installation of a flow restrictor,
 8. Charges for removal of flow restrictors, and
 9. Special Conditions
 - ii. Justification for, and documentation and calculations in support of the Schedule, including but not limited to each item in B.1.d.i above.

(Continued)

(To be inserted by utility)

Issued by

(To be inserted by Cal. P.U.C.)

Advice No. 472A

PALLE JENSEN
Sr. Vice President,
Regulatory Affairs

Date Filed JUN -9 2015
Effective JUN 15 2015
Resolution No. _____

Dec. No. _____

TITLE

SUPPLEMENT

RULE NO. 14.1 WATER SHORTAGE CONTINGENCY PLAN

(N)

D. WATER SHORTAGE CONTINGENCY PLAN WITH STAGED MANDATORY REDUCTIONS AND DROUGHT SURCHARGES – SCHEDULE NO. 14.1 (Continued)

2. Number of Stages requested by each utility/district/water system may vary, depending on local conditions and specifics of the water shortage event.
3. SJWC may enact a particular stage of Schedule 14.1:
 - a. If the Commission, wholesale water supplier, or other government agency declares an emergency requiring mandatory water use restrictions, or
 - b. If a government agency declares a state of emergency in response to severe drought conditions, earthquake or other catastrophic event that severely reduces the utility's water supply, or
 - c. If the implementation of mandatory restriction levels set by the Commission, utility, wholesale water supplier, or government agency are insufficient, or
 - d. If the utility is unable to address conservation levels set by itself or governing body or agency, or
 - e. If the utility chooses to subsequently activate a different stage.
4. When enacting a particular stage of Schedule 14.1, SJWC shall file a Tier 2 advice letter to request activation.
5. The Tier 2 advice letter requesting activation of a Schedule No. 14.1 shall include but not be limited to:
 - a. Justification for activating this particular stage of reductions, as well as the period during which this particular stage of mandatory restrictions and reductions measures will be in effect.
 - b. When the utility requests activation of a particular Stage, it shall notify its customers as detailed in Section G, below.

E. ENFORCEMENT OF STAGED MANDATORY WATER REDUCTIONS

1. The staged reduction of water usage and mandatory restrictions in Section C of this Plan become enforceable through additional tariff rates when the Schedule No. 14.1-Water Shortage Contingency Plan with Staged Mandatory Reductions and Drought Surcharges program is implemented.

(N)

(Continued)

(To be inserted by utility)

Issued by

(To be inserted by Cal. P.U.C.)

Advice No. 472A

PALLE JENSEN
Sr. Vice President,
Regulatory Affairs

Date Filed JUN 19 2015
Effective JUN 19 2015
Resolution No. _____

Dec. No. _____

TITLE

SUPPLEMENT

RULE NO. 14.1 WATER SHORTAGE CONTINGENCY PLAN

SLIP/SUB SHEET

(N)

E. ENFORCEMENT OF STAGED MANDATORY WATER REDUCTIONS (Continued)

2. The utility may, after one written warning, install a flow-restricting device on the service line of any customer observed by utility personnel to be using water for any non-essential or unauthorized use as defined in Section B and C above.
3. A flow restrictor shall be capable of providing the premise with a minimum flow of 5 gallons per minute. The restricting device may be removed only by the utility, only after a three-day period has elapsed, and only upon payment of the appropriate removal charge as set forth in Schedule No. 14.1.
4. After the removal of the restricting device, if any non-essential or unauthorized use of water continues, the utility may install another flow-restricting device without written notice. This device shall remain in place until water supply conditions warrant its removal and until the appropriate charge for removal has been paid to the utility.
5. Any tampering with flow restricting device by customer can result in discontinuation of water use.
6. If, despite installation of such flow-restricting device pursuant to the provisions of the previous enforcement conditions, any such non-essential or unauthorized use of water continues, then the utility may discontinue water service to such customer. In such latter event, a charge as provided in Rule No. 11 shall be paid to the utility as a condition to restoration of service.

F. APPEAL PROCEDURE

1. Any customer who seeks a variance from any of the provisions of this water shortage contingency plan shall notify the utility in writing, explaining in detail the reason for such a variation. The utility shall respond to each such request in writing.

Except as set forth in this Section, no person shall have any right or claim in law or in equity, against the utility because of, or as a result of, any matter or thing done or threatened to be done pursuant to the provisions of the Water Shortage Contingency Plan.

(Continued)

(N)

(To be inserted by utility)

Issued by

(To be inserted by Cal. P.U.C.)

Advice No. 472A

PALLE JENSEN
Sr. Vice President,
Regulatory Affairs

Date Filed JUN -9 2015
Effective JUN 15 2015
Resolution No. _____

Dec. No. _____

TITLE

SUPPLEMENT

RULE NO. 14.1 WATER SHORTAGE CONTINGENCY PLAN

(N)

G. NOTICE

1. As stated under Section D, when SJWC requests the addition of a Schedule 14.1 –Water Shortage Contingency Plan with Stage Mandatory Reductions and Drought Surcharges tariff, via a Tier 2 advice letter, it shall provide customer notice of the Tier 2 advice letter and associated public hearing, if necessary. Notice will be provided to customers through bill inserts or direct mailing, and through a posting in the local newspaper of circulation. The public meeting shall be held after the utility files the Tier 2 advice letter, and before the Commission authorizes the addition of Schedule 14.1 to the tariff except in cases of emergency water shortages approved by the Division of Water & Audits.
 - a. SJWC shall consult with the Division of Water and Audits staff prior to filing the advice letter, in order to determine the details of the public meeting.
2. If activation of Schedule No. 14.1 occurs one year or more since the public hearing associated with adding Schedule No. 14.1 to its tariffs, then the utility shall conduct a public hearing pursuant to California Water Code Section 351 prior to activating the rationing stage.
3. During the period that a stage of Schedule No. 14.1 is activated, SJWC shall provide customers with updates regarding its water supply status and the results of customers' conservation and water use reduction efforts.

(N)

(To be inserted by utility)

Issued by

(To be inserted by Cal. P.U.C.)

Advice No. 472A

PALLE JENSEN
Sr. Vice President,
Regulatory Affairs

Date Filed JUN -9 2015
Effective JUN 15 2015
Resolution No. _____

Dec. No. _____

TITLE

Appendix I

Cities and County Notification Letters



1265 S. Bascom Avenue
San Jose, CA 95128-3514

Writer's Direct Line: (408) 279-7850
Email: jake.walsh@sjwater.com

November 9, 2020

Todd Capurso
Director of Public Works
City of Campbell
70 North First Street
Campbell, CA 95008

Subject: Notice of Preparation of Urban Water Management Plan

The Urban Water Management Plan Act (Water Code Section 10610 – 10657) requires San Jose Water Company to update its Urban Water Management Plan by July 1, 2021. We are reviewing our current Plan, which was last updated in 2016, and will be considering revisions to it. We invite your agency's participation in this process.

We will make any proposed revisions to our Plan available for public review and will hold a public hearing. In the meantime, if you have any questions about our Plan, or the process for updating it, please contact me.

Sincerely,

Walsh, Jake

Digitally signed by Walsh,
Jake
Date: 2020.11.09
15:37:31 -08'00'

Jake Walsh, P.E.
Director of Capital Planning and Asset Management

cc: Bill Tuttle, San Jose Water



1265 S. Bascom Avenue
San Jose, CA 95128-3514

Writer's Direct Line: (408) 279-7850
Email: jake.walsh@sjwater.com

November 9, 2020

Jacqueline Onciano
Director of Planning and Development
County of Santa Clara
70 West Hedding Street
East Wing, 7th Floor
San Jose, CA 95110

Subject: Notice of Preparation of Urban Water Management Plan

The Urban Water Management Plan Act (Water Code Section 10610 – 10657) requires San Jose Water Company to update its Urban Water Management Plan by July 1, 2021. We are reviewing our current Plan, which was last updated in 2016, and will be considering revisions to it. We invite your agency's participation in this process.

We will make any proposed revisions to our Plan available for public review and will hold a public hearing. In the meantime, if you have any questions about our Plan, or the process for updating it, please contact me.

Sincerely,

Walsh, Jake

Digitally signed by Walsh,
Jake
Date: 2020.11.09
15:38:10 -08'00'

Jake Walsh, P.E.
Director of Capital Planning and Asset Management

cc: Bill Tuttle, San Jose Water



1265 S. Bascom Avenue
San Jose, CA 95128-3514

Writer's Direct Line: (408) 279-7850
Email: jake.walsh@sjwater.com

November 9, 2020

Roger Lee
Director of Public Works
City of Cupertino
10300 Torre Avenue
Cupertino, CA 95014

Subject: Notice of Preparation of Urban Water Management Plan

The Urban Water Management Plan Act (Water Code Section 10610 – 10657) requires San Jose Water Company to update its Urban Water Management Plan by July 1, 2021. We are reviewing our current Plan, which was last updated in 2016, and will be considering revisions to it. We invite your agency's participation in this process.

We will make any proposed revisions to our Plan available for public review and will hold a public hearing. In the meantime, if you have any questions about our Plan, or the process for updating it, please contact me.

Sincerely,

Walsh, Jake

Digitally signed by Walsh,
Jake
Date: 2020.11.09
15:38:50 -08'00'

Jake Walsh, P.E.
Director of Capital Planning and Asset Management

cc: Bill Tuttle, San Jose Water



1265 S. Bascom Avenue
San Jose, CA 95128-3514

Writer's Direct Line: (408) 279-7850
Email: jake.walsh@sjwater.com

November 9, 2020

Tony Ndah
Director of Public Works
City of Milpitas
455 East Calaveras Blvd.
Milpitas, CA 95035

Subject: Notice of Preparation of Urban Water Management Plan

The Urban Water Management Plan Act (Water Code Section 10610 – 10657) requires San Jose Water Company to update its Urban Water Management Plan by July 1, 2021. We are reviewing our current Plan, which was last updated in 2016, and will be considering revisions to it. We invite your agency's participation in this process.

We will make any proposed revisions to our Plan available for public review and will hold a public hearing. In the meantime, if you have any questions about our Plan, or the process for updating it, please contact me.

Sincerely,

Walsh, Jake  Digitally signed by Walsh,
Jake
Date: 2020.11.09
15:39:29 -08'00'

Jake Walsh, P.E.
Director of Capital Planning and Asset Management

cc: Bill Tuttle, San Jose Water



1265 S. Bascom Avenue
San Jose, CA 95128-3514

Writer's Direct Line: (408) 279-7850
Email: jake.walsh@sjwater.com

November 9, 2020

Steve Leonardis
City Manager
City of Monte Sereno
18041 Saratoga-Los Gatos Road
Monte Sereno, CA 95030

Subject: Notice of Preparation of Urban Water Management Plan

The Urban Water Management Plan Act (Water Code Section 10610 – 10657) requires San Jose Water Company to update its Urban Water Management Plan by July 1, 2021. We are reviewing our current Plan, which was last updated in 2016, and will be considering revisions to it. We invite your agency's participation in this process.

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Sincerely,

Walsh, Jake

Digitally signed by Walsh,
Jake
Date: 2020.11.09
15:40:13 -08'00'

Jake Walsh, P.E.
Director of Capital Planning and Asset Management

cc: Bill Tuttle, San Jose Water



1265 S. Bascom Avenue
San Jose, CA 95128-3514

Writer's Direct Line: (408) 279-7850
Email: jake.walsh@sjwater.com

November 9, 2020

Jeff Provenzano
Deputy Director, Environmental Services
City of San Jose
3025 Tuers Road
San Jose, CA 95121

Subject: Notice of Preparation of Urban Water Management Plan

The Urban Water Management Plan Act (Water Code Section 10610 – 10657) requires San Jose Water Company to update its Urban Water Management Plan by July 1, 2021. We are reviewing our current Plan, which was last updated in 2016, and will be considering revisions to it. We invite your agency's participation in this process.

We will make any proposed revisions to our Plan available for public review and will hold a public hearing. In the meantime, if you have any questions about our Plan, or the process for updating it, please contact me.

Sincerely,

Walsh, Jake

Digitally signed by Walsh,
Jake
Date: 2020.11.09
15:40:45 -08'00'

Jake Walsh, P.E.
Director of Capital Planning and Asset Management

cc: Bill Tuttle, San Jose Water



1265 S. Bascom Avenue
San Jose, CA 95128-3514

Writer's Direct Line: (408) 279-7850
Email: jake.walsh@sjwater.com

November 9, 2020

Gary Welling
Director of Water & Sewer Utilities
City of Santa Clara
1500 Warburton Avenue
Santa Clara, CA 95050

Subject: Notice of Preparation of Urban Water Management Plan

The Urban Water Management Plan Act (Water Code Section 10610 – 10657) requires San Jose Water Company to update its Urban Water Management Plan by July 1, 2021. We are reviewing our current Plan, which was last updated in 2016, and will be considering revisions to it. We invite your agency's participation in this process.

We will make any proposed revisions to our Plan available for public review and will hold a public hearing. In the meantime, if you have any questions about our Plan, or the process for updating it, please contact me.

Sincerely,

Walsh, Jake

Digitally signed by Walsh,
Jake
Date: 2020.11.09
15:41:21 -08'00'

Jake Walsh, P.E.
Director of Capital Planning and Asset Management

cc: Bill Tuttle, San Jose Water



1265 S. Bascom Avenue
San Jose, CA 95128-3514

Writer's Direct Line: (408) 279-7850
Email: jake.walsh@sjwater.com

November 9, 2020

John Cherbone
Director of Public Works
City of Saratoga
13777 Fruitvale Avenue
Saratoga, CA 95070

Subject: Notice of Preparation of Urban Water Management Plan

The Urban Water Management Plan Act (Water Code Section 10610 – 10657) requires San Jose Water Company to update its Urban Water Management Plan by July 1, 2021. We are reviewing our current Plan, which was last updated in 2016, and will be considering revisions to it. We invite your agency's participation in this process.

We will make any proposed revisions to our Plan available for public review and will hold a public hearing. In the meantime, if you have any questions about our Plan, or the process for updating it, please contact me.

Sincerely,

Walsh, Jake

Digitally signed by Walsh,
Jake
Date: 2020.11.09
15:41:59 -08'00'

Jake Walsh, P.E.
Director of Capital Planning and Asset Management

cc: Bill Tuttle, San Jose Water



1265 S. Bascom Avenue
San Jose, CA 95128-3514

Writer's Direct Line: (408) 279-7850
Email: jake.walsh@sjwater.com

November 9, 2020

Ramana Chinnakotla
Director of Environmental Services
City of Sunnyvale
221 Commercial Street
Sunnyvale, CA 94085

Subject: Notice of Preparation of Urban Water Management Plan

The Urban Water Management Plan Act (Water Code Section 10610 – 10657) requires San Jose Water Company to update its Urban Water Management Plan by July 1, 2021. We are reviewing our current Plan, which was last updated in 2016, and will be considering revisions to it. We invite your agency's participation in this process.

We will make any proposed revisions to our Plan available for public review and will hold a public hearing. In the meantime, if you have any questions about our Plan, or the process for updating it, please contact me.

Sincerely,

Walsh, Jake

Digitally signed by Walsh,
Jake
Date: 2020.11.09
15:42:43 -08'00'

Jake Walsh, P.E.
Director of Capital Planning and Asset Management

cc: Bill Tuttle, San Jose Water



1265 S. Bascom Avenue
San Jose, CA 95128-3514

Writer's Direct Line: (408) 279-7850
Email: jake.walsh@sjwater.com

November 9, 2020

Matt Morley
Parks & Public Works Director
Town of Los Gatos
110 East Main Street
Los Gatos, CA 95030

Subject: Notice of Preparation of Urban Water Management Plan

The Urban Water Management Plan Act (Water Code Section 10610 – 10657) requires San Jose Water Company to update its Urban Water Management Plan by July 1, 2021. We are reviewing our current Plan, which was last updated in 2016, and will be considering revisions to it. We invite your agency's participation in this process.

We will make any proposed revisions to our Plan available for public review and will hold a public hearing. In the meantime, if you have any questions about our Plan, or the process for updating it, please contact me.

Sincerely,

Walsh, Jake

Digitally signed by Walsh,
Jake
Date: 2020.11.09
15:43:18 -08'00'

Jake Walsh, P.E.
Director of Capital Planning and Asset Management

cc: Bill Tuttle, San Jose Water



1265 S. Bascom Avenue
San Jose, CA 95128-3514

Writer's Direct Line: (408) 279-7850
Email: jake.walsh@sjwater.com

November 9, 2020

Jerry De La Piedra
Assistant Officer, Water Supply Division
Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118

Subject: Notice of Preparation of Urban Water Management Plan

The Urban Water Management Plan Act (Water Code Section 10610 – 10657) requires San Jose Water Company to update its Urban Water Management Plan by July 1, 2021. We are reviewing our current Plan, which was last updated in 2016, and will be considering revisions to it. We invite your agency's participation in this process.

We will make any proposed revisions to our Plan available for public review and will hold a public hearing. In the meantime, if you have any questions about our Plan, or the process for updating it, please contact me.

Sincerely,

Walsh, Jake  Digitally signed by Walsh,
Jake
Date: 2020.11.09
15:43:52 -08'00'

Jake Walsh, P.E.
Director of Capital Planning and Asset Management

cc: Bill Tuttle, San Jose Water
cc: Samantha Greene, Valley Water

Appendix J

San José Mercury News Notice of UWMP and WSCP Public Hearing

Appendix K

Adoption Resolution of UWMP and WSCP

Appendix L

Department of Water Resources Checklist Arranged by Subject

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	Chapter 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	Beginning of each chapter
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 2.1, Table 2-1
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	Sections 1.4 and 2.4
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	Sections 2.4 and 10.2, Appendix I
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 2.4, Table 2-4
	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 3.1
x	x	Section 3.3	10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 3.3
x	x	Section 3.4	10631(a)	Provide population projections for 2025, 2030, 2035, 2040 and optionally 2045.	System Description	Section 3.4.2, Table 3-1
x	x	Section 3.4.2	10631(a)	Describe other social, economic, and demographic factors affecting the supplier's water management planning.	System Description	Sections 3.4.3 and 4.2
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 3.4.2
x	x	Section 3.5	10631(a)	Describe the land uses within the service area.	System Description	Section 3.5
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	Sections 4.1 and 4.2, Tables 4-1 to 4-3
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 4.3
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, Table 4-5
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, Table 4-5
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 4.3, Table 4-4
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, Table 4-5
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 4.5
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	Sections 5.2 and 5.3, Tables 5-1 and 5.2
x		Chapter 5	10608.24(a)	Retail suppliers shall meet their water use target by December 31, 2020.	Baselines and Targets	Section 5.3, Table 5-2
	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
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	Sections 5.2, 5.3
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 5.3, Table 5-2, Appendices D and E
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 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, <i>including changes in supply due to climate change.</i>	System Supplies	Section 7.2
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	Chapter 6
x	x	Section 6.1.1	10631(b)(3)	Describe measures taken to acquire and develop planned sources of water.	System Supplies	Chapter 6

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 6.9, Tables 6-8 and 6-9
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 6.2
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 6.2
x	x	Section 6.2.2	10631(b)(4)(B)	Describe the groundwater basin.	System Supplies	Section 6.2
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	N/A
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 6.2
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 6.2, Table 6-1
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	Sections 6.2 and 6.9
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 6.7
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 6.5
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 6.5
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 6.5
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 6.5, Tables 6-4 and 6-5
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 6.5, Table 6-6
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 6.5, Section 7.1.4
x	x	Section 6.2.6	10631(g)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 6.6
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 6.5, Tables 6-2 and 6-3
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	Section 6.8, Table 6-7
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 Supplies, Energy Intensity	Section 6.11, Appendix E
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	Sections 6.1, 6.2, 6.3, 6.5, and 7.1.
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 6.10, Appendix A
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 7.2, Tables 7-1 to 7-4
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 7.3
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 7.3
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 7.3
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 7.3, Table 7-5
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 7.1
x	x	Chapter 8	10632(a)	Provide a water shortage contingency plan (WSCP) with specified elements below.	Water Shortage Contingency Planning	Chapter 8
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	Section 8.1

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	Sections 8.9 and 8.10
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	Section 8.2
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	Section 8.2
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	Section 8.3, Table 8-1
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	Section 8.3
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	Section 8.3.2, Table 8-3
x	x	Section 8.4	10632(a)(4)(B)	Specify locally appropriate demand reduction actions to adequately respond to shortages.	Water Shortage Contingency Planning	Section 8.4.1, Table 8-2
x	x	Section 8.4	10632(a)(4)(C)	Specify locally appropriate operational changes.	Water Shortage Contingency Planning	Section 8.4.3
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	Section 8.4.4
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	Section 8.4.7
x	x	Section 8.4.6	10632.5	The plan shall include a seismic risk assessment and mitigation plan.	Water Shortage Contingency Plan	Section 8.4.5, Section 8.4.6
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	Section 8.5
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	Section 8.5
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	Section 8.6
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	Section 8.7
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	Section 8.7
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	Section 8.7
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	Section 8.8
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	Section 8.8
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	Section 8.8
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	Section 8.9
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	Section 8.11
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	Section 8.12
x	x	Section 8.12	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	Section 8.12
	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	Chapter 9
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 10.3
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 10.2

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 10.4
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 10.5
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 10.2
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 10.3, Appendix J
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 10.4
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 10.4
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 10.4
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 10.5
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 10.5
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	Section 10.6
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 8.12



SAN JOSE WATER

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