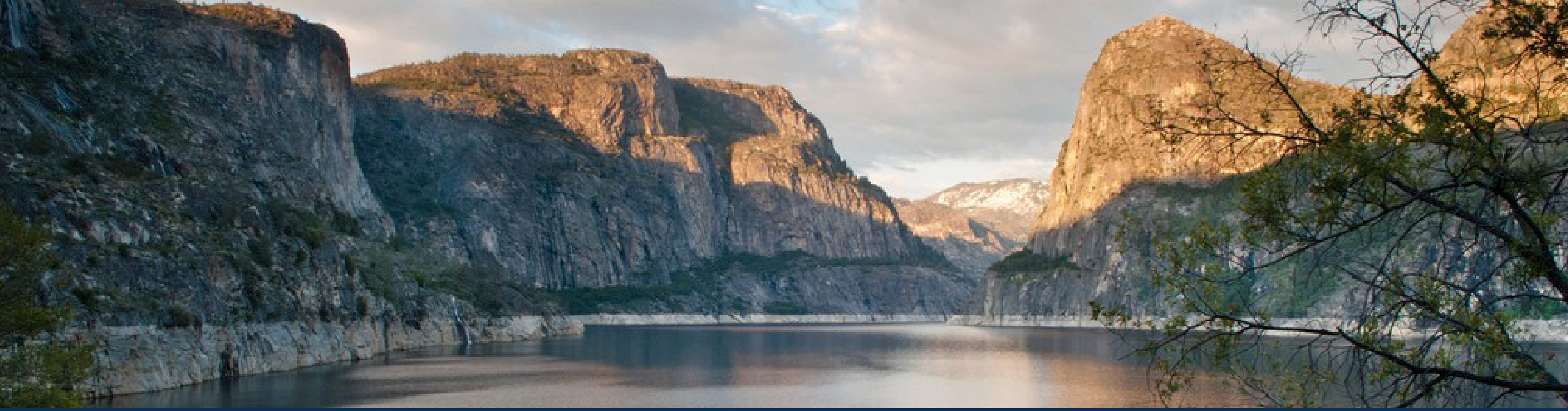

CITY OF BURLINGAME

2020 URBAN WATER MANAGEMENT PLAN

THE CITY OF BURLINGAME CALIFORNIA INCORPORATED 1908

SEPTEMBER 2021

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ABBREVIATIONS

ACWD	Alameda County Water District
AF	acre-feet
AFY	acre-feet per year
AMR	automatic meter reading
APR	Annual Progress Report
AWSP	an Alternative Water Supply Planning Program
AWWA	American Water Works Association
BAIRWMP	Bay Area Integrated Regional Water Management Plan
BARR	Bay Area Regional Reliability
BAWSCA	Bay Area Water Supply and Conservation Agency
BDPLs	Bay Division Pipelines
BG	Billions of Gallons
CCR	California Code of Regulations
CCWD	Contra Costa Water District
CEQA	California Environmental Quality Act
CII	commercial, industrial, and institutional
County HMP	San Mateo County Hazard Mitigation Plan
CUWCC	California Urban Water Conservation Council
CWC	California Water Code
DBP	disinfection by-product
DDW	Division of Drinking Water
DMM	demand management measure
DRA	Drought Risk Assessment
DRT	Drought Response Tool
DSOD	DWR Division of Safety of Dams
DSS	Demand Management Decision Support System Model
DWR	Department of Water Resources
EBMUD	East Bay Municipal Utilities District
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EOP	Emergency Operations Plan
ERP	Emergency Response Plan
ETo	reference evapotranspiration
FTE	full-time equivalent
FY	Fiscal year
GPCD	gallons per capita per day
GPD	gallons per day
GSR	Groundwater Storage and Recovery
GSRP	Groundwater Storage and Recovery Project

HET	High Efficiency Toilet
HHLSM	Hetch Hetchy and Local Simulation Model
HTWTP	Harry Tracy Water Treatment Plant
ISG	Individual Supply Guarantees
JPA	Joint Powers Authority
kWh	kilowatt-hour
LCSD	Lower Crystal Springs Dam
LOS	Level of Service
LVE	Los Vaqueros Reservoir Expansion
MG	million gallons
MGD	million gallons per day
MID	Modesto Irrigation District
MMWD	Marin Municipal Water District
MWELO	Model Water Efficient Landscape Ordinance
PG&E	Pacific Gas & Electric
PREP	Crystal Springs Purified Water Project
PVC	polyvinyl chloride
PWEP	Potable Water Emergency Plan
R-GPCD	residential gallons per capita per day
RUWMP	Regional Urban Water Management Plan
RWS	Regional Water System
SB	Senate Bill
SCADA	Supervisory Control and Data Acquisition
SEMS	Standardized Emergency Management System
SFPUC	San Francisco Public Utilities Commission
SGMA	Sustainable Groundwater Management Act
SMCWPPP	San Mateo Countywide Water Pollution Prevention Program
SMP	Surface Mining Permit
SVCW	Silicon Valley Clean Water
SVWTP	Sunol Valley Water Treatment Plant
SWAP	Shared Water Access Program
SWRCB	State Water Resources Control Board
TDS	total dissolved solid
TID	Turlock Irrigation District
TRVA	Tuolumne River Voluntary Agreement
USD	Union Sanitary District
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
UV	ultraviolet
UWMP	Urban Water Management Plan
WCIP	Water Conservation Implementation Plan
WP Well	Washington Park Well

WQD	Water Quality Division
WRPR	Water Rationing Plan Resolution
WSA	Water Supply Agreement
WSAP	Water Shortage Allocation Plan
WSCP	Water Shortage Contingency Plan
WSIP	Water System Improvement Program
WWTP	Burlingame Wastewater Treatment Plant

1. INTRODUCTION

This chapter discusses the importance and uses of this Urban Water Management Plan (UWMP or Plan), the relationship of this Plan to the California Water Code (CWC), the relationship of this Plan to other local and regional planning efforts, and how this Plan is organized and developed in general accordance with the UWMP Guidebook 2020 (Guidebook; DWR, 2021).

1.1 Background and Purpose

The City of Burlingame, referred to herein as the City or Burlingame, serves water to customers within the incorporated limits of the City as well as portions of unincorporated San Mateo County. Burlingame delivers water to residential, commercial, industrial, and governmental customers and purchases all of its potable water supplies from the San Francisco Public Utilities Commission (SFPUC). As of 2020, the City serves 8,728 connections within its service area.

This UWMP is a foundational document and source of information about the City's historical and projected water demands, water supplies, supply reliability and potential vulnerabilities, water shortage contingency planning, and demand management programs. Among other things, it is used as:

- A long-range planning document for water supply and system planning; and
- A source for data on population, housing, water demands, water supplies, and capital improvement projects used in:
    - Regional water resource management plans prepared by wholesale water suppliers and other regional planning authorities (as applicable),
    - General Plans prepared by cities and counties, and
    - Statewide and broad regional water resource plans prepared by the California Department of Water Resources (DWR), the State Water Resources Control Board (SWRCB), or other state agencies.

Burlingame's last UWMP was completed in 2016, referred to herein as the 2015 UWMP. This Plan is an update to the 2015 UWMP and carries forward information that remains current and relevant to this Plan, and provides additional information as required by amendments to the UWMP Act (CWC §10610 – 10657). Although this Plan is an update to the 2015 UWMP, it was developed to be a self-contained, stand-alone document and does not require readers to reference information contained in previous updates.

1.2 Urban Water Management Planning and the California Water Code

The UWMP Act requires urban water suppliers to prepare an UWMP every five years and to submit this plan to the DWR, the California State Library, and any city or county within which the supplier provides water supplies. All urban water suppliers, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet annually are required to prepare an UWMP (CWC §10617).

The UWMP Act was enacted in 1983. Over the years it has been amended in response to water resource challenges and planning imperatives confronting California. A significant amendment was made in 2009 as a result of the governor's call for a statewide 20 percent reduction in urban water use by 2020, referred to as "20x2020," the Water Conservation Act of 2009, and "SB X7-7." This amendment required urban retail water suppliers to establish water use targets for 2015 and 2020 that would result in statewide water savings of 20 percent by 2020. Beginning in 2016, urban retail water suppliers were required to comply with the water conservation requirements in SB X7-7 in order to be eligible for state water grants or loans. Chapter 5 of this plan contains the data and calculations used to determine compliance with these requirements.

A subsequent substantial revision to the UWMP Act was made in 2018 through a pair of bills (i.e., Assembly Bill 1668 and Senate Bill 606), referred to as "Making Water Conservation a California Way of Life" or the "2018 Water Conservation Legislation." These changes include, among other things, additional requirements for Water Shortage Contingency Plans (WSCPs), expansion of dry year supply reliability assessments to a five-year drought period, establishment of annual drought risk assessment procedures and reporting, and new conservation targets referred to as "annual water use objectives," which will require retailers to continue to reduce water use beyond the 2020 SB X7-7 targets.

As applicable, Burlingame's 2020 UWMP reflects the following significant revisions to the UWMP Act that have been made since 2015.

- ***Five Consecutive Dry-Year Water Reliability Assessment***. The Legislature modified the dry-year water reliability planning from a "multiyear" time period to a "drought lasting five consecutive water years" designation.
- ***Drought Risk Assessment***. The Drought Risk Assessment requires a supplier to assess water supply reliability over a five-year period from 2021 to 2025 that examines water supplies, water uses, and the resulting water supply reliability under a reasonable prediction for five consecutive dry years.
- ***Energy Analysis.*** UWMPs are now required to include water system energy usage information that can be readily obtained.
- ***Seismic Risk***. The Water Code now requires suppliers to specifically address seismic risk to various water system facilities and to have a mitigation plan.
- ***Water Shortage Contingency Plan***. In 2018, the Legislature modified the UWMP laws to require a WSCP with specific elements.
- ***Groundwater Supplies Coordination***. Water Code now requires suppliers' 2020 UWMPs to be consistent with Groundwater Sustainability Plans, in areas where those plans have been completed by the Groundwater Sustainability Agencies.
- ***Lay Description***. The 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 Relationship to Other Planning Efforts

This Plan provides information specific to water management and planning within the Burlingame service area. However, water management does not happen in isolation; there are other planning processes that integrate with the UWMP to accomplish urban planning. Some of these relevant planning documents include relevant city and county General Plans, Water Master Plans, Recycled Water Master Plans, integrated resource plans, Integrated Regional Water Management Plans, and others.

This Plan is informed by and helps to inform these other planning efforts. In particular, this Plan was prepared in close coordination with the City of Burlingame's Public Works and Community Development departments and has been integrated with the City's planning efforts. As such, the City's 2020 UWMP has been developed to be consistent with the City's 2019 General Plan and subsequent documents. Primary coordination was achieved through City staff's participation in two workshops (held on November 29 and December 16, 2020). At these workshops, key information regarding the 2020 UWMP content was presented and City representatives were provided the opportunity to review, comment, and present additional information.

1.4 Plan Organization

The organization of this Plan follows the same sequence as outlined in the Guidebook (DWR, 2021).

Chapter 1 - Introduction

Chapter 2 - Plan Preparation

Chapter 3 - System Description

Chapter 4 - System Water Demands

Chapter 5 - Baseline Water Use and Water Conservation Targets

Chapter 6 - Water System Supplies

Chapter 7 - Water Supply Reliability

Chapter 8 - Water Shortage Contingency Planning

Chapter 9 - Demand Management Measures

Chapter 10 - Plan Adoption and Submittal

In addition to these ten chapters, this Plan includes a number of appendices providing supporting documentation and supplemental information. Pursuant to CWC §10644(a)(2), this Plan utilizes the standardized forms, tables, and displays developed by DWR for the reporting of water use and supply information required by the UWMP Act. This Plan also includes additional tables, figures, and maps to augment the set developed by DWR, as appropriate. The table headers indicate if the table is part of DWR's standardized set of submittal tables.

1.5 Consistency with the Delta Plan for Participants in Covered Actions

Although not required by the UWMP Act, in the Guidebook (DWR, 2021), DWR recommends that all suppliers that are participating in, or may participate in, receiving water from a proposed project that is considered a "covered action" under the Delta Plan—such as a (1) multiyear water transfer; (2) conveyance facility; or (3) new diversion that involves transferring water through, exporting water from, or using water in the Sacramento-San Joaquin Delta (Delta)—provide information in their UWMP to demonstrate consistency with the Delta Plan policy WR P1, Reduce Reliance on the Delta Through Improved Regional Water Self-Reliance (California Code of Regulations, Title 23, Section 5003).

Based on information provided by SFPUC and the Bay Area Water Supply and Conservation Agency (BAWSCA; Appendix E), the adoption of the 2018 Bay-Delta Plan Amendment is anticipated to impact the reliability of the SFPUC Regional Water System (RWS) supplies in the future. Chapter 7 contains a detailed description of potential impacts and mitigation strategies associated with the Bay-Delta Plan Amendment.

1.6 Lay Description

☑ ***CWC § 10630.5***

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

This Urban Water Management Plan (UWMP or Plan) is prepared for the City of Burlingame (also referred to as the City or Burlingame), which serves drinking water to a population of approximately 32,407. This UWMP serves as a foundational planning document and includes descriptions of historical and projected water demands, and water supplies and reliability over a more than 20-year planning horizon. This document also describes the actions the City is taking to promote water conservation, both by the City itself and affiliated agencies (referred to as demand management measures) and includes a Water Shortage Contingency Plan to address potential water supply shortages such as drought or other impacts to supply availability. This UWMP is updated every five years in accordance with state requirements under the Urban Water Management Planning Act and amendments (Division 6 Part 2.6 of the California Water Code [CWC] §10610 – 10656). Past plans developed for the City are available on the California Department of Water Resources (DWR) Water Use Efficiency Data Portal website: https://wuedata.water.ca.gov. This document includes 10 chapters, which are summarized below.

Chapter 1 - Introduction

This chapter presents the background and purpose of the UWMP, identifies the Plan organization, and provides this lay description overview of the document.

Chapter 2 – Plan Preparation

This chapter discusses key structural aspects related to the preparation of the UWMP, and describes the coordination and outreach conducted as part of the preparation of the Plan, including coordination with local agencies (i.e., Bay Area Water Supply and Conservation Agency [BAWSCA]), water wholesalers (i.e., San Francisco Public Utilities Commission [SFPUC]), and the public.

Chapter 3 – Service Area and System Description

This chapter provides a description of the City of Burlingame's water system and the service area, including information related to the climate, population, and demographics. The City supplies water to customers in the incorporated City boundaries and in the unincorporated Burlingame Hills. The City is located in San Mateo County and serves a population of approximately 32,407. The City has a temperate climate. The majority of precipitation falls during late autumn, winter, and spring, averaging 20.3 inches of rainfall annually. Much of the City is "built out," however new multiple unit, mixed use, and commercial/office developments are planned as infill or redevelopment in the City as described in the City's 2019 General Plan. The density of the new development is expected to be higher than the existing land uses they replace, which drives the population and employment growth projections. Population in the City is projected to increase at an annual rate of 0.87% and employment is projected to increase at an annual rate of 1.3%.

Chapter 4 – System Water Demands

This chapter provides a description and quantifies the City of Burlingame's current and projected demands through the year 2045. The City provides drinking water (also referred to as potable water) to customers.

Water demands refer not only to the water used by customers, but also includes the water used as part of the system maintenance and operation, as well as unavoidable losses inherent in the operation of a water distribution system. Water demand within the City was 1,221 million gallons (MG) per year on average between 2016 and 2020. Taking into account historical water use, expected population increase and other growth, climatic variability, and other assumptions, water demand within the City is projected to increase to 1,721 MG by 2045, a change of 35% compared to the water demand of 1,271 MG in 2020.

Chapter 5 – Baseline Water Use and Water Conservation Targets

In this chapter, the City of Burlingame demonstrates compliance with its per capita water use target for the year 2020. The Water Conservation Act of 2009 (Senate Bill X7-7) was enacted in November 2009 and requires the state of California to achieve a 20 percent reduction in urban per capita water use by December 31, 2020. In order to achieve this, each urban retail water supplier was required to establish water use targets for 2015 and 2020 using methodologies established by DWR. The City is in compliance with its 2020 water use target of 135 gallons per capita per day (GPCD), having reduced its water use in 2020 to 107 GPCD.

Chapter 6 – Water System Supplies

This chapter presents an analysis of the City of Burlingame's water supplies, as well as an estimate of water-related energy consumption. The intent of this chapter is to present a comprehensive overview of the City's water supplies, estimate the volume of available supplies over the UWMP planning horizon, and assess the sufficiency of the City's supplies to meet projected demands under normal hydrologic conditions.

The sole source of water supply for the City is purchased water from SFPUC. The City's contractual allocation to SFPUC supplies (known as its Individual Supply Guarantee) is 5.23 million gallons per day (MGD), or approximately 1,909 MG per year. Water supply for the City is expected to be sufficient to meet the projected water demand through 2045.

Calculation and reporting of water system energy intensity is a new requirement for the 2020 UWMPs. Energy intensity is defined as the net energy used for water treatment, conveyance, and distribution for all water entering the distribution system, less the amount of energy produced within the water system itself. The energy intensity for the City is estimated to be 363.5 kilowatt hours per MG of water.

Chapter 7 – Water Supply Reliability

This chapter assesses the reliability of the City of Burlingame's water supplies, with a specific focus on potential constraints such as water supply availability, water quality, and climate change. The intent of this chapter is to identify any potential constraints that could affect the reliability of the City's supply (such as drought conditions) to support the City's planning efforts to ensure that its customers are well served. Water service reliability is assessed during normal, single dry-year, and multiple dry-year hydrologic conditions.

Based on this analysis, the City expects the available supplies to be sufficient to meet projected demands in normal years. However, the City is potentially expected to experience significant shortfalls of its SFPUC RWS supplies during single dry and multiple dry year conditions as a result of Bay-Delta Plan Amendment implementation. Yet, numerous uncertainties remain in the implementation of the Bay-Delta Plan Amendment and the resultant allocation of the available supply to the City and the other Wholesale Customers.

Further, potential water quality issues are not expected to affect the quality of water served to the City's customers, as water quality is routinely monitored.

Chapter 8 – Water Shortage Contingency Plan

This chapter introduces the Water Shortage Contingency Plan (WSCP) for the City of Burlingame, which serves as a standalone document (see Appendix I) to be engaged in the case of a water shortage event, such as a drought or supply interruption, and defines specific policies and actions that will be implemented at various shortage level scenarios. For example, implementing customer water budgets and surcharges, or restricting landscape irrigation to specific days and/or times. Consistent with DWR requirements, the WSCP includes six levels to address shortage conditions ranging from up to 10% to greater than 50% shortage.

Chapter 9 – Demand Management Measures

This chapter includes descriptions of past and ongoing conservation programs offered by the City of Burlingame. These conservation programs and policies address each demand management measure (DMM) category outlined in the UWMP Act, specifically: (1) water waste prevention ordinances, (2) metering, (3) conservation pricing, (4) public education and outreach, (5) distribution system water loss management, (6) water conservation program coordination and staffing support, and (7) other DMMs. Additionally, the City participates in regional water conservation programs offered by BAWSCA.

Chapter 10 – Plan Adoption and Submittal

This chapter provides information on a public hearing, the adoption process for the UWMP, the adopted UWMP submittal process, plan implementation, and the process for amending the adopted UWMP. Prior to adopting the Plan, the City held a public hearing for adoption of the 2020 UWMP and WSCP on September 7, 2021, 7:00 PM. This UWMP was submitted to DWR within 30 days of adoption.

2. PLAN PREPARATION

In 1983, the California Legislature enacted the Urban Water Management Planning Act (UWMP Act) (California Water Code §10610 – 10657). The UWMP Act states that every urban water supplier that provides water to 3,000 or more customers, or that provides over 3,000 acre-feet of water annually, should make every effort to ensure the appropriate level of water service reliability to meet the needs of its customers during normal, dry, and multiple dry years. Historically, the UWMP Act required urban water suppliers to update their Urban Water Management Plan (UWMP or Plan) for submittal to the Department of Water Resources (DWR) in years ending in five and zero. However, because of recent changes in UWMP Act requirements, State law has extended the deadline for the 2020 Plans to July 1, 2021. On behalf of the City of Burlingame (City or Burlingame), EKI Environment & Water, Inc. (EKI) has prepared this 2020 update to the City's UWMP in accordance with the UWMP Act.

2.1 Compliance with the UWMP Act, Including Changes Since 2015

☑ ***CWC § 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.

In 2020, the City provided more than 3,000 acre-feet water to more than 3,000 customers, and is therefore subject to requirements of the UWMP Act (Table 2-1). The City's 2020 UWMP is an individual UWMP that describes how the current and future water resources and demands within the Burlingame service area will be managed to provide an adequate and reliable water supply (Table 2-2). Additionally, and as described in Chapter 1, Burlingame's 2020 UWMP reflects the significant revisions to the UWMP Act.

Table 2-1. Public Water Systems (DWR Table 2-1)

Public Water System Number	Public Water System Name	Number of Municipal Connections 2020	Volume of Water Supplied 2020
4110003	City of Burlingame	8,728	1,271
	TOTAL	8,728	1,271
NOTES: (a) Volumes are in units of MG.			

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

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

Burlingame's 2020 UWMP has been prepared in general accordance with the format suggested in DWR's UWMP Guidebook (Guidebook; DWR, 2021). Text from the UWMP Act has been included in grey boxes at beginning of relevant sections of this UWMP. The information presented in the respective UWMP sections and the associated text, figures, tables, and charts are collectively intended to fulfill the requirements of that sub-section of the UWMP Act. To the extent practicable, supporting documentation has also been provided in the appendices. Other sources of information contained herein are provided in Chapter 11 (References).

Per CWC §10644(a)(2), selected information for the 2020 UWMP updates must be presented in standardized tables for electronic submittal to DWR. To the extent applicable, text and tables in the main body of the UWMP document have been cross-referenced to the companion DWR tables.

2.2 Coordination and Outreach

As described below and in Chapter 10, this UWMP has been prepared in coordination with the Bay Area Water Supply and Conservation Agency (BAWSCA), the BAWSCA member agencies, the San Francisco Public Utilities Commission (SFPUC), the public, and other appropriate entities.

2.2.1 Role of BAWSCA

BAWSCA provides regional water reliability planning and conservation programming for the benefit of its 26 member agencies that purchase wholesale water supplies from the SFPUC. Collectively, the BAWSCA member agencies deliver water to over 1.8 million residents and nearly 40,000 commercial, industrial and institutional accounts in Alameda, San Mateo and Santa Clara Counties.

BAWSCA also represents the collective interests of these wholesale water customers on all significant technical, financial, and policy matters related to the operation and improvement of the SFPUC's Regional Water System.

BAWSCA's role in the development of the 2020 Urban Water Management Plan updates is to work with its member agencies and the SFPUC to seek consistency among UWMP documents.

2.2.2 Wholesale Coordination

☑ ***CWC § 10631 (h)***

An urban water supplier that relies upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (f). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (f).

The SFPUC is a wholesale water supplier to all of the BAWSCA member agencies, and is the only wholesale water supplier to Burlingame. As part of the coordination effort for the 2020 UWMP, and in compliance with CWC §10631(h), Burlingame supplied BAWSCA with its water demand projections through 2045 for transmittal to the SFPUC.[1]

Additionally, as described in more detail in Chapter 7, Burlingame has relied upon the water supply reliability projections provided by the SFPUC for the purposes of analyzing the reliability of its SFPUC supplies during normal and dry years through 2045 (Table 2-3).[2]

Table 2-3. Water Supplier Information Exchange (DWR Table 2-4)

The retail Supplier has informed the following wholesale supplier(s) of projected water use in accordance with Water Code Section 10631.
Wholesale Water Supplier Name
San Francisco Public Utilities Commission
NOTES:

[1] Email to BAWSCA, dated November 12, 2020.

[2] Email from BAWSCA dated January 25, 2021, and information provided by the SFPUC, Appendix F.

2.2.3 Agency Coordination

☑ ***CWC § 10620 (d) (2)***

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

As a member of BAWSCA, Burlingame has coordinated closely with them and the 25 other member agencies regarding the update of this UWMP. Between February 12 and April 9, 2021, Burlingame staff representatives attended a series of five webinars on supply reliability hosted by BAWSCA. During the webinars, BAWSCA and the member agencies reviewed the water supply reliability projections provided by the SFPUC, as well as the updated dry year supply allocations described in Chapter 7. Representatives for the City also attend monthly water management meetings with BAWSCA and its member agencies that, among other topics, include discussion of items pertinent to the preparation of the 2020 UWMPs.

The Burlingame Wastewater Treatment Plant (WWTP) receives wastewater from the Burlingame service area as well as portions of the Town of Hillsborough. The WWTP is owned by the City and operated and maintained by Veolia Water North America, which has contracted with the City since 1972.

In addition, Burlingame notified local and regional water retailers and public agencies of Burlingame's intent to prepare the 2020 UWMP and Water Shortage Contingency Plan (WSCP), as well as the associated public hearing. A total of 51 recipients from 26 agencies and groups received notices as listed in Table 2-4 and Appendix A, including the SFPUC, BAWSCA, each BAWSCA member agency, and San Mateo County. A copy of the notice is provided in Appendix A.

Table 2-4. Notification to Cities and Counties (DWR Table 10-1)

City Name	60 Day Notice	Notice of Public Hearing
See note (a)	X	X
County Name	60 Day Notice	Notice of Public Hearing
San Mateo County	X	X
Other Agency Name	60 Day Notice	Notice of Public Hearing
See note (a)	X	X
NOTES: (a) See Appendix A for the full list of cities and agencies that Burlingame provided notification to.		

2.2.4 Public Participation

☑ ***CWC § 10642***

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

Water suppliers are required by the UWMP Act to encourage active involvement of the community within the service area prior to and during the preparation of its UWMP. The UWMP Act also requires water suppliers to make a draft of the UWMP available for public review and to hold a public hearing regarding the findings of the UWMP prior to its adoption. In addition to sending notices to the various agencies listed in Table 2-4, the City also included a public notice in the local newspaper notifying the public of the City's intent to prepare its UWMP. The Public Review Draft 2021 UWMP was made available on the City's website on July 23, 2021 at www.burlingame.org/water.

On August 23, 2021 and August 30, 2021, the City published a notice in the *San Mateo Daily Journal* daily newspaper informing the public that the 2020 UWMP would be available for public review at the Burlingame City Hall, libraries, and on the Burlingame website (www.burlingame.org/water), and that a public hearing would be held during the Burlingame City Council Meeting on September 7, 2021, consistent with requirements of California Government Code 6066.[3] Copies of the newspaper notices are included in Appendix B.

2.3 UWMP Structure, Standard Units, and Basis for Reporting

Per the Guidebook, the UWMP preparer is requested to complete a checklist of specific UWMP requirements to assist the DWR review of the submitted UWMP. The completed checklist is included in Appendix C.

As shown in Table 2-5, Burlingame is a retailer and the information presented in this UWMP is reported on a fiscal year basis. As such, "2020" refers to Fiscal Year 2019-2020, and so forth. The units of measure

[3] Government Code section 6066. Publication of notice pursuant to this section shall be once a week for two successive weeks. Two publications in a newspaper published once a week or oftener, with at least five days intervening between the respective publication dates not counting such publication dates, are sufficient. The period of notice commences upon the first day of publication and terminates at the end of the fourteenth day, including therein the first day.

for reporting water volumes is million gallons (MG) and is maintained consistently throughout the Plan, unless otherwise noted.

Furthermore, consistent with the Guidebook, the terms “water use”, “water consumption”, and “water demand” are used interchangeably in this UWMP.

Table 2-5. Supplier Identification (DWR Table 2-3)

Type of Supplier	
	Supplier is a wholesaler
X	Supplier is a retailer
Fiscal or Calendar Year	
	UWMP Tables are in calendar years
X	UWMP Tables are in fiscal years
If using fiscal years provide month and date that the fiscal year begins (mm/dd)	
07/01	
Units of measure used in UWMP	
Unit	MG
NOTES:	

3. SYSTEM DESCRIPTION

☑ ***CWC § 10631 (a)*** *A plan shall be adopted in accordance with this chapter that shall do all of the following:*

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

The City of Burlingame (City or Burlingame) is located in San Mateo County, approximately 15 miles south of the City of San Francisco, California (Figure 3-4). The City is bordered by the City of Millbrae directly to the north, the City of San Mateo to the southeast, the town of Hillsborough to the south, the City of San Francisco watershed lands to the west, and San Francisco Bay to the east. The City's potable water system serves approximately 8,728 connections, both within the City limits and in the unincorporated Burlingame Hills area.[4] The City also supplies potable water, primarily for irrigation purposes, to San Mateo County's Coyote Point Park. The higher-elevation, unincorporated Burlingame Hills is located west of the City, while Coyote Point is located southeast of the City along San Francisco Bay (Figure 3-5). The City's customers are mostly residential with a broad cross-section of offices, commercial, and industrial businesses.

The City is a member of the Bay Area Water Supply and Conservation Agency (BAWSCA) and purchases all of its potable water from the San Francisco Public Utilities Commission (SFPUC). Water distribution, wastewater collection, water conservation, and maintenance of water quality are Burlingame Public Works Department's main water resource functions, as treated water purchased from the SFPUC does not require further water treatment.

As required by the Urban Water Management Planning Act (California Water Code §10610 – 10656 and §10608), specific information about the Burlingame service area, population, and climate is provided below. A brief description of Burlingame's potable water distribution system is also included.

3.1 Service Area Population and Demographics

Consistent with Department of Water Resources (DWR) requirements, current population served by the City has been estimated herein using: (1) the State of California Department of Finance (State of California, 2020) for the service area population within City limits, and (2) an estimate of the unincorporated Burlingame Hills area using data for Census Tract 6050, which is explained further below and in Section 5.1.

[4] In 2019 there were 8,728 connections as reported in the City of Burlingame's 2019 Annual Report to the Drinking Water Program.

3.1.1 Future Population Growth

Burlingame's General Plan (City of Burlingame, 2019) provides population projections for its service area through 2040. The population projection presented in Table 3-1 is estimated by extending the population estimates from Table CX-1 of Burlingame's General Plan through 2045 and adding on the population of Burlingame Hills, which is estimated to be 2,289.[5] The population in the Burlingame Hills area is assumed to remain constant through 2045, since the area is fully built out with single-family homes and there is no expected growth in single-family population in the City. All expected growth in the City is attributed to multi-family residences (including Accessory Dwelling Units).

The total projected population within the Burlingame service area is expected to be 40,322 by 2045, which is equivalent to an increase of 24% relative to 2020 or an average annual increase of 0.98%. Table 3-1 and Figure 3-1 show the projected population for the service area through 2045.

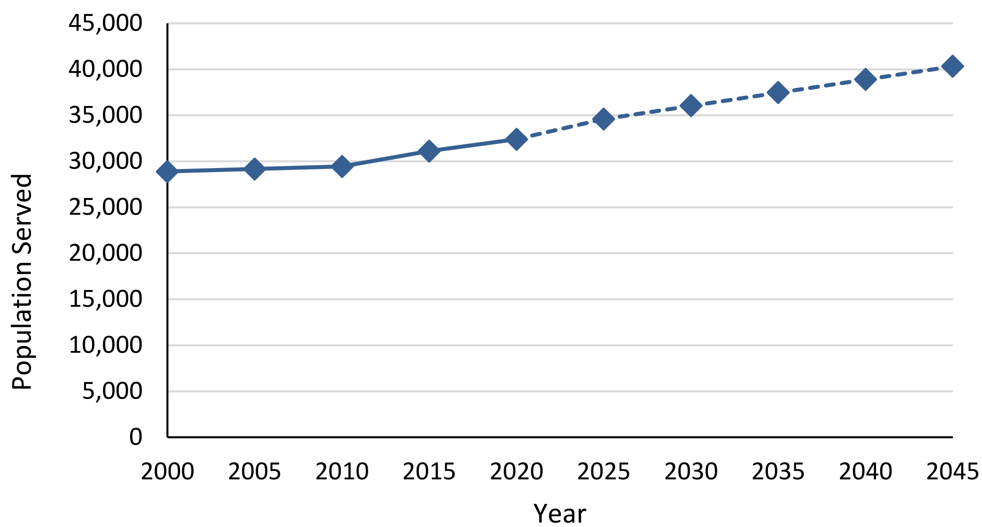
[5] The Census Tract 6050 covers parts of Burlingame and the Burlingame Hills area and includes a total population of 8,447 (Census, 2020). The Burlingame Hills area covers 27.1% of Census Tract 6050, and is therefore assumed to include 27.1% of the population, or 2,289 people.

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

Population Served	2020	2025	2030	2035	2040	2045
	32,407	34,592	36,024	37,457	38,889	40,322

NOTES:
(a) Historical and current population data are further documented in Table 4-1.
(b) Service area population in 2020 was estimated from State of California Department of Finance for population within incorporated City limits in addition to estimated population of unincorporated Burlingame Hills area.
(c) Projected population growth for the Burlingame service area was estimated based on population projections in Burlingame's General Plan (City of Burlingame, 2019) and an estimated population for the unincorporated Burlingame Hills area.

Figure 3-1. Historical and Projected Population



3.1.2 Future Employment Growth

The City also supplies water to its commercial, industrial, and institutional customers, which were collectively estimated to provide 31,501 jobs within the Burlingame service area in 2020. Employment projections for the City's service area are from Burlingame's General Plan (City of Burlingame, 2019). Table CX-1 of the General Plan provides an estimate of total jobs in 2040, assuming a linear growth rate from 2016. For the purposes of this UWMP, the same employment growth rate was extended out to 2045.

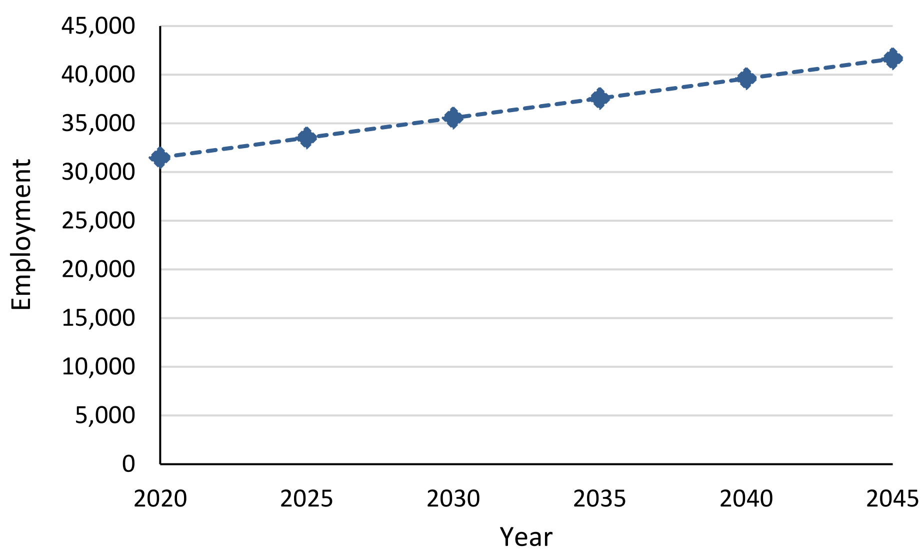
As shown in Table 3-2 and Figure 3-2, significant employment growth is anticipated in the Burlingame service area. By 2045, employment within the Burlingame service area is anticipated to grow to 41,637 jobs, an increase of 32% relative to 2020 and an annual growth of 1.3%.

Table 3-2. Employment - Current and Projected

	2020	2025	2030	2035	2040	2045
Service Area Employment	31,501	33,528	35,555	37,583	39,610	41,637

NOTES:
(a) Projected employment growth for the Burlingame service area was estimated based on employment projections in Burlingame's General Plan (City of Burlingame, 2019).

Figure 3-2. Current and Projected Employment



3.1.3 Other Social, Economic, and Demographic Factors

Demographics for the City are summarized in Table 3-3 as they may affect water management and planning. The same data are also provided for the whole State of California as comparison. The City has a similar age and race structure to the State as a whole. Educational attainment and median household income in the City are much higher than for the State, and percent of population below the poverty level is comparatively lower.

Table 3-3. Demographic and Housing Characteristics

Demographics (a)	City of Burlingame	California
Age and Sex		
Persons under 5 years	6.0%	6.0%
Persons under 18 years	23.6%	22.5%
Persons 65 years and older	14.4%	14.8%
Female persons	52.5%	50.3%
Race and Hispanic Origin		
White alone	58.8%	71.9%
Black or African American alone	1.2%	6.5%
American Indian and Alaska Native alone	0.1%	1.6%
Asian alone	27.5%	15.5%
Native Hawaiian and Other Pacific Islander alone	0.2%	0.5%
Two or More Races	7.0%	4.0%
Hispanic or Latino	12.7%	39.4%
White alone, not Hispanic or Latino	53.3%	36.5%
Families & Living Arrangements		
Persons per household	2.47	2.95
Living in same house 1 year ago, percent of persons age 1 year+	83.8%	87.1%
Language other than English spoken at home, age 5 years+	34.1%	44.2%
Education		
High school graduate or higher, persons age 25 years+	96.0%	83.3%
Bachelor's degree or higher, persons age 25 years+	67.8%	33.9%
Income & Poverty		
Median Household Income (2019 dollars)	$128,447	$75,235
Per capita income in past 12 months (2019 dollars)	$73,968	$36,955
Persons in poverty	4.5%	11.8%

NOTES:
(a) Demographic data per the U.S. Census Bureau QuickFacts website, https://www.census.gov/quickfacts/fact/table/burlingamecitycalifornia,CA/PST045219, accessed March 2021.

3.2 Land Uses within Service Area

General Plans are required by State law to guide land use and development within cities (California Government Code §65030.1). Figure CC-1 in Burlingame's General Plan (City of Burlingame, 2019) illustrates the planned distribution of land uses throughout Burlingame and the sphere of influence. During the extensive community engagement process of 2015-2016, the community identified areas of change and areas of stability. The land use plan focuses growth in the areas of change and preserves the existing fabric in areas of stability.

The City is predominantly zoned residential, with a commercial and industrial core in the eastern portion of the City and two centrally located commercial districts. Much of the City is "built out," however new multi-family, mixed use, and commercial/office developments are planned as infill or redevelopment in the City. The density of the new development is expected to be higher than the existing land uses they replace, which drives the population and employment growth projections presented in Section 3.1.

3.3 Climate

The Burlingame water service area is located in a region with generally temperate climate. As shown in Table 3-4 and Figure 3-3, rainfall in the area averages approximately 20 inches per year and is generally confined to the wet season from late October to early May. The average reference evapotranspiration (ETo) for the region is 39 inches per year. The ETo is a standard measurement related to the water demand by plants in a specific region. Because the average annual ETo is approximately 19 inches more than the average annual precipitation, and because 96% of the annual precipitation occurs between the months of October and April, growing turf grasses or other high water use plants in this region requires a significant amount of irrigation during the dry season. This irrigation demand contributes to the observed seasonal variation in water demand throughout the Burlingame service area.

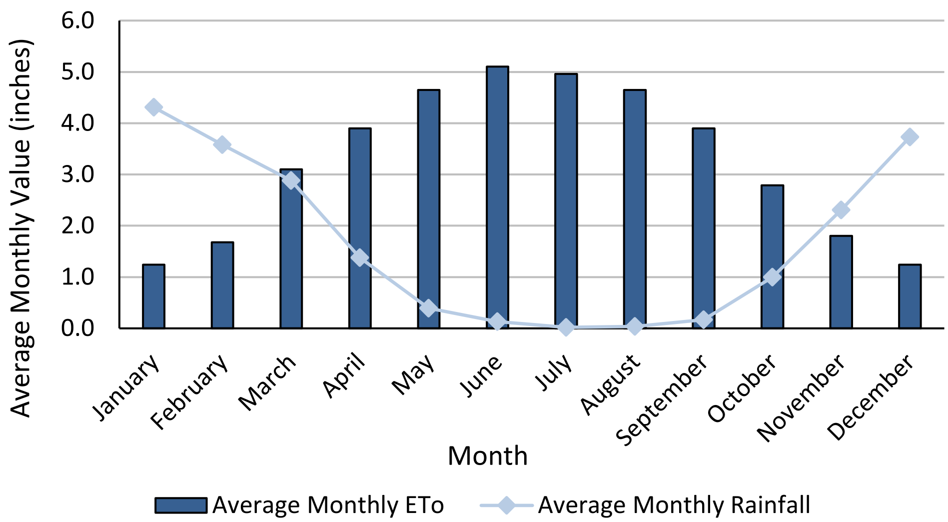
Table 3-4. Average Monthly Climate Characteristics

Month	Average Temperature		Standard Average ETo (inches)	Average Rainfall (inches)
	Min (°F)	Max (°F)		
January	42.6	55.8	1.2	4.3
February	45.0	59.1	1.7	3.6
March	46.2	61.2	3.1	2.9
April	47.7	63.8	3.9	1.4
May	50.2	66.7	4.7	0.4
June	52.8	70.0	5.1	0.1
July	54.1	71.4	5.0	0.0
August	55.0	72.0	4.7	0.0
September	54.8	73.4	3.9	0.2
October	52.1	70.2	2.8	1.0
November	47.4	62.9	1.8	2.3
December	43.3	56.4	1.2	3.7
Annual	**49.3**	**65.2**	**39.0**	**19.9**

NOTES:
(a) Average temperature and rainfall data were obtained from the Western Regional Climate Center, reported from the San Francisco International Airport station for the period between 1945-2016 (https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca7769).

(b) Average reference evapotranspiration data are for Zone 2 Coastal Mixed Fog Area, California Irrigation Management Information System (https://cimis.water.ca.gov).

Figure 3-3. Average Monthly Climatic Conditions



3.3.4 Climate Change Considerations

Projections of climate change in California indicate a further intensification of wet and dry extremes and shifting temperature. Changing climate can affect both water demand and supply. For example, extreme and higher temperatures can lead to increases in water use. Declining snowpack and earlier runoff patterns could result in changes in stream flows and reservoir operations. Projection of frequent, severe, and prolonged droughts could lead to not only less surface water available, but also exacerbate ongoing stressors in groundwater basins. Some of these pressures are already apparent in California as of 2021.

Several sections in the California Water Code (CWC) relevant to UWMPs refer to climate change. Pursuant to CWC requirements and the UWMP Guidebook, this Plan incorporates climate change considerations into following relevant chapters:

- Chapter 3 – Service Area and System Description,
- Chapter 4 – System Water Demands,
- Chapter 6 – Water System Supply, and
- Chapter 7 – Water Supply Reliability.

The Sea Level Rise Vulnerability Assessment completed in 2018 (County of San Mateo, 2018) is the first step of the Sea Change San Mateo County initiative and provides an overview of the risk within the County from current and future flooding. The assessment identified many built and natural assets in Burlingame that are vulnerable, including stormwater, power, and wastewater infrastructure.

In 2019, as a result of the Sea Change San Mateo County initiative, the cities and County of San Mateo formed a Flood and Sea Level Rise Resiliency District to address sea level rise, flooding, coastal erosion, and large-scale storm water infrastructure improvements through integrated regional planning, investment, and project implementation.

Chapters 4, 6, and 7 of this Plan discuss the potential impacts of climate change on water demand and water sources. As detailed in Chapter 9 of this Plan, Burlingame has established robust conservation programs to increase water resiliency.

3.4 Water Distribution System

The City's distribution system consists of six pumping stations, seven water storage tanks, and buried pipes of varying compositions, ages, and sizes. The distribution system provides water to ten pressure zones within the City's water service area, as shown below (adapted from EKI, 2004).

Water is transferred between pressure zones through a system of pipes and pumping stations as shown on Table 3-5. The pumping stations are referred to as:

1. Easton Pump Station
2. Skyview Pump Station
3. Trousdale Pump Station
4. Donnelly Pump Station
5. Hillside Pump Station
6. Sisters of Mercy Pump Station

Table 3-5. City of Burlingame Distribution System Pressure Zones

#	Zone Name	Elevation (feet above mean sea level)	
		Minimum	Maximum
1	Adeline Zone	170	430
2	Alcazar Zone	240	420
3	Aqueduct Zone	5	115
4	Ashton Zone	125	125
5	Canyon Zone	150	280
6	Donnelly Zone	100	310
7	Fey Zone	325	325
8	Hillside Zone	100	180
9	Mills Zone	340	600
10	Skyview Zone	540	618

Five of the pumping stations transfer water from the lower elevations of the City to the higher elevations, while the Sisters of Mercy Pump Station also provides fire flow to the Sisters of Mercy campus. The sizes of the pumps range between 7.5 and 200 horsepower.

Water is stored in the City's seven water storage tanks at five sites that provide an aggregate water storage volume of 2.94 million gallons (MG) (EKI, 2004). The largest water storage facility is the Hillside Tank, which holds 1.5 MG. The smallest water storage facilities are the individual tanks at the Alcazar and Donnelly sites. There are two tanks at each site and each tank holds 0.05 MG.

Water is supplied to the City via six metered turnouts connected to SFPUC's Sunset Supply Pipeline and Crystal Springs Pipelines No. 2 and No. 3. Because the pressures in the SFPUC pipelines vary between 95 pounds per square inch (psi) and 105 psi, City pressure reducing valves are in place at the turnouts to deliver water at consistent and manageable pressures throughout the Aqueduct Zone.

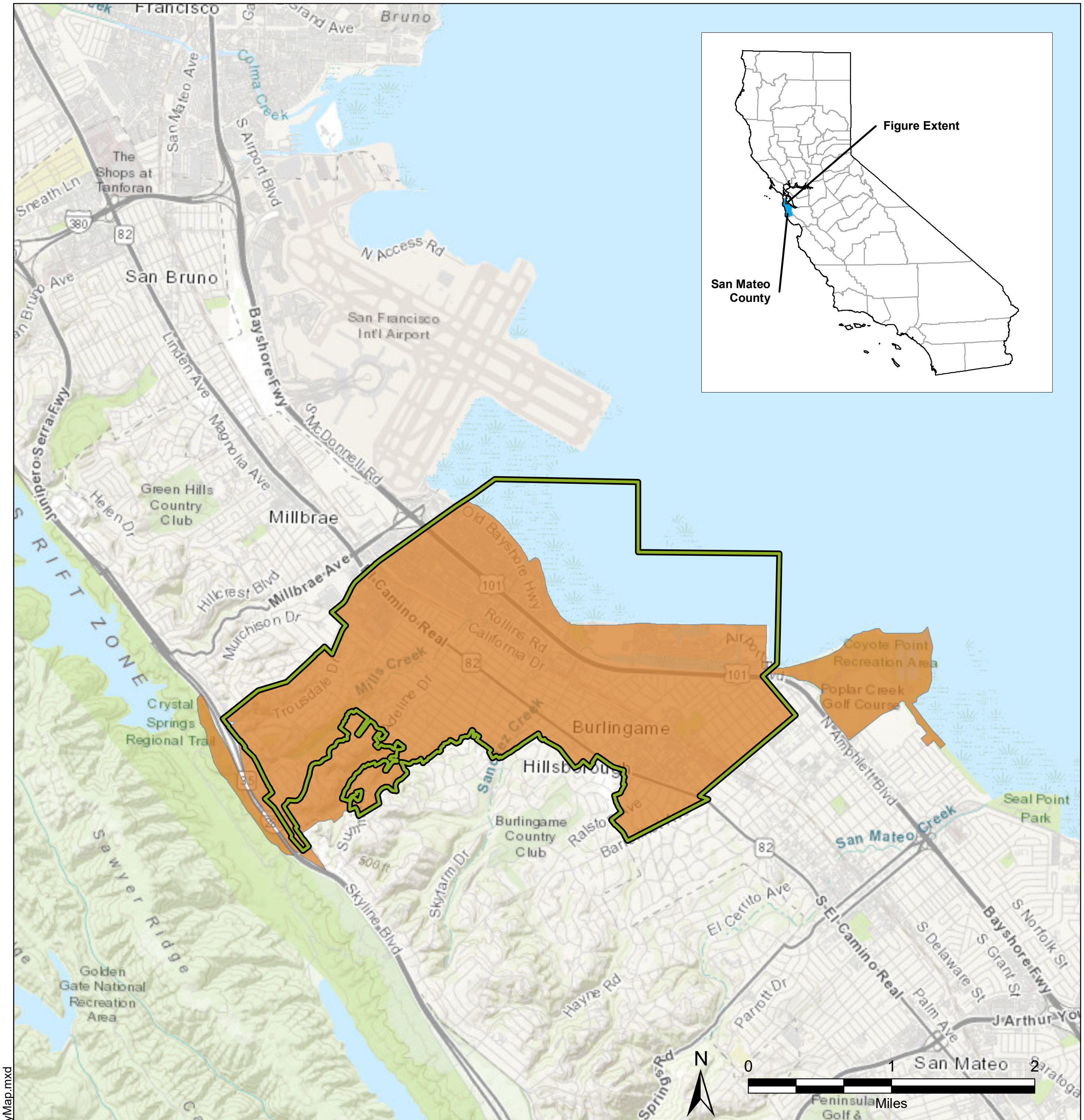
Water from the turnouts is supplied to the Aqueduct Zone at sufficient pressure to supply end-users within this zone without additional pumping. As described above, to supply the elevated regions of the City, pumping stations boost water from the Aqueduct Zone to the more elevated pressure zones and their associated storage facilities.

Metered interties exist between the Burlingame water system and the City of Millbrae and the Town of Hillsborough water systems. Burlingame has served (sold) water to Millbrae in the past through the intertie. The City also has unmetered interties with the California Water Service Company along the southern portion of the distribution system. Burlingame has an understanding with Millbrae and Hillsborough that it can buy or sell water in emergency situations or pursuant to project-specific agreements; however, under normal operating conditions Burlingame does not sell water to other agencies.

The following water system improvement projects are planned for construction or have been completed since the 2015 UWMP:

- Large subdivision replacement of approximately 4,000 linear feet of old and aging cast iron water mains with new polyvinyl chloride (PVC)/ductile iron water mains in the Glenwood, Burlingame Heights and Burlingame Park Subdivisions. The project streets consist of: Howard Avenue, Central Avenue, Cypress Avenue, Carol Avenue, East Carol Avenue and Crescent Avenue. (construction anticipated in 2022).
- Replacement of approximately 5,300 linear feet of old and aging cast iron water mains with new 6-inch, 8-inch and 12-inch ductile iron water mains along El Camino Real, together with all service connections, valves, fittings, fire hydrants, and appurtenances (construction in progress).
- Rehabilitation of pumps at Trousdale Pump Station (construction in progress)).
- Replaced approximately 4,600 linear feet of old and aging cast iron water mains with new PVC/ductile iron water mains on Burlingame Avenue between Rollins Road and East Lane. (completed 2020).
- Installed a carrier pipe within an existing 12-inch water main under the lagoon pedestrian bridge located near Bayview Place (completed 2019).
- Large subdivision replacement of approximately 4,200 linear feet of old and aging cast iron water mains with new PVC/ductile iron water mains in the Burlingame Shoreland Subdivision. The project streets consist of Winchester Drive, Winchester Place, Corbitt Drive, Francisco Drive, Marin Drive and Oak Grove Avenue (completed 2018).

- Replaced approximately 650 linear feet of new 6-inch, 3,750 linear feet of new 8-inch, and 104 linear feet of new 4-inch PVC and ductile iron pipe water main along South Rollins Road (completed 2017).
- Replaced approximately 3,100 linear feet of new 4-inch, 8-inch, and 10-inch ductile iron water main along El Camino Real, together with all service connections, valves, fittings, fire hydrants, and appurtenances (completed 2016).
- Installation of a new pump station control house and removal of soil off of the reservoir at the Hillside Reservoir (completed 2016).



Legend

City of Burlingame Water Service Area

City of Burlingame Boundary

Notes

1. All locations are approximate.

Sources

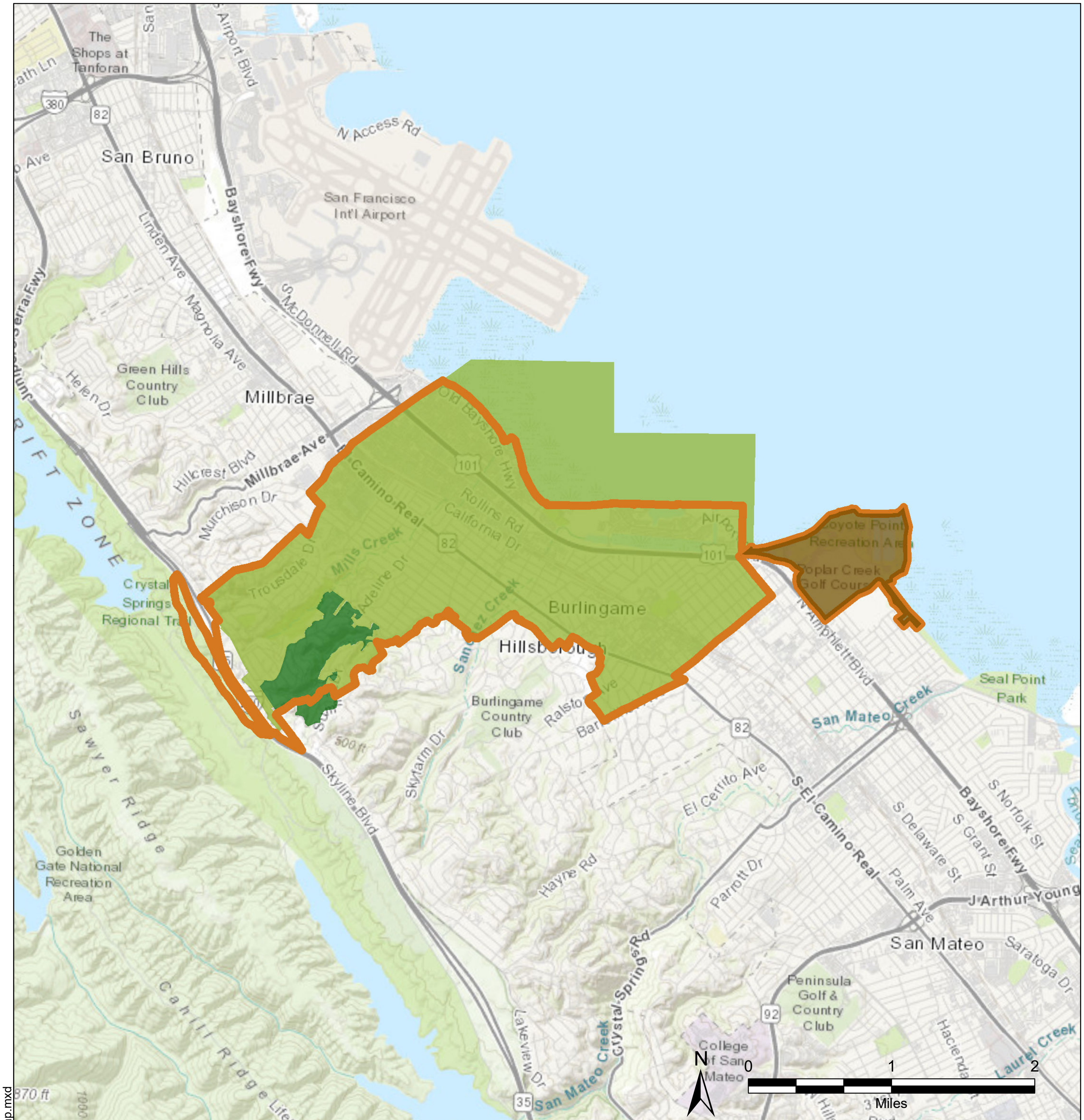
Topographic base map provided by ArcGIS Online

Regional Vicinity Map

City of Burlingame
2020 Urban Water Management Plan
Burlingame, CA
September 2021
EKI C00059.00

Figure 3-4

Path: X:\C00059\Maps\2021\09\Fig3-4_Burlingame_RegionalVicinityMap.mxd



Path: X:\C00059\Maps\2021\09\Fig3-5_Burlingame_ServiceAreaMap.mxd

Legend

- City of Burlingame Water Service Area
- City of Burlingame
- Unincorporated County (Burlingame Hills)
- Coyote Point (See Note 3)

Notes

1. All locations are approximate.
2. Unincorporated areas of Burlingame are served with potable water by the City of Burlingame.
3. Regional Park with no residential demands.
4. Service area boundary is the same from baseline period through current.

Sources

Aerial base map provided by ArcGIS Online

City of Burlingame Service Area Map

City of Burlingame
2020 Urban Water Management Plan
Burlingame, CA
September 2021
EKI C00059.00

eki environment & water

Figure 3-5

4. SYSTEM WATER DEMANDS

☑ ***CWC § 10631 (d) (1)*** *A plan shall be adopted in accordance with this chapter that shall do all of the following:*

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

(A) Single-family residential.

(B) Multifamily.

(C) Commercial.

(D) Industrial.

(E) Institutional and governmental.

(F) Landscape.

(G) Sales to other agencies.

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

(I) Agricultural.

(J) Distribution system water loss.

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

For the purposes of this Urban Water Management Plan (UWMP or Plan), potable water demand is defined as the volume of potable water that the City of Burlingame (City or Burlingame) purchases from the San Francisco Public Utilities Commission (SFPUC) Regional Water System. Among other things, water demand is dependent on climate, population, industry, and the types of development present in a community. Sections 4.1 and 4.2 describe the historical and projected water demands for the residential, commercial, industrial, institutional, and landscape irrigation sectors within the Burlingame service area (as described per California Water Code [CWC] §10631(d)(1)(A) though (F) and (J)). As described in Section 4.3, this discussion does not include demands for sales to other agencies, saline water intrusion barriers, and agricultural sectors (CWC §10631(d)(1)(G) through (I)) as they are not applicable or present within the Burlingame service area.

4.1 Historical and Current Total Water Demand

All demands within the Burlingame service area are currently met with potable water. The current and historical total water demands include water recorded by metered accounts in the service area, unmetered water used by the Water Division and Fire Department, and water that is lost within the distribution system (i.e. losses).

Table 4-1, Figure 4-1, and Figure 4-2 show Burlingame’s potable water demand and per capita water use between 2010 and 2020. Before the drought, the per capital potable water use was about 136 gallons per capita per day (GPCD). Then the 2012-2016 drought caused local and state agencies (i.e. the State Water

Resources Control Board [SWRCB][6]) to issue mandatory water use restrictions which led to a significant decline in water use. Burlingame saw a 28.5% reduction between 2013 and 2016 for the compliance period of June through December.[7] Water demand in 2016 was at a ten-year low between 2010 and 2020. Since 2016, water use rebounded to 106 GPCD and has not returned to pre-drought water use levels.

Table 4-1. Current and Historical Potable Water Demand and Population

Year	Potable Water Demand	Service Area Population	Per Capita Potable Water Use (GPCD)
2010	1,437	29,450	134
2011	1,482	29,782	136
2012	1,521	30,114	138
2013	1,520	30,445	137
2014	1,497	30,777	133
2015	1,397	31,109	123
2016	1,126	31,369	98
2017	1,191	31,628	103
2018	1,269	31,888	109
2019	1,249	32,147	106
2020	1,271	32,407	107

NOTES:
(a) Detailed historical and current water demand data from 2016 through 2020 are documented in Table 4-2. Demands are based on purchases from the SFPUC, on a fiscal year basis.
(b) Service area population data from 2010 through 2015 from the City of Burlingame's 2015 UWMP. Service area population data from 2016 through 2020 are estimated from Burlingame's General Plan (City of Burlingame, 2019).
(c) Per capita potable water use is calculated by dividing the total annual potable water demand by the service area population and the number of days in a year.
(d) Unless otherwise noted, volumes are in units of MG.

[6] On July 28, 2014, the SWRCB adopted emergency regulations to mandate water agencies, including Burlingame, to implement their Water Shortage Contingency Plan and minimum actions to reduce outdoor water use. On May 5, 2015, SWRCB adopted Resolution 2015-0032 to mandate further minimum actions by water suppliers and their customers to reduce potable water use into 2016 and assigns a mandatory water conservation savings goal to each water supplier based on their residential water use. On February 2, 2016, the SWRCB voted to extend the reduction targets through October 2016. Burlingame has a SWRCB-mandated reduction target of 16%.

[7] SWRCB, Water Conservation Portal - Conservation Reporting, June 2015 - December 2015 Cumulative Savings and Urban Water Supplier Conservation Compliance Dataset and June 2014 - December 2015 Urban Water Supplier Report Dataset:
https://www.waterboards.ca.gov/water_issues/programs/conservation_portal/conservation_reporting.html

Figure 4-1. Historical and Current Potable Water Demand and Population

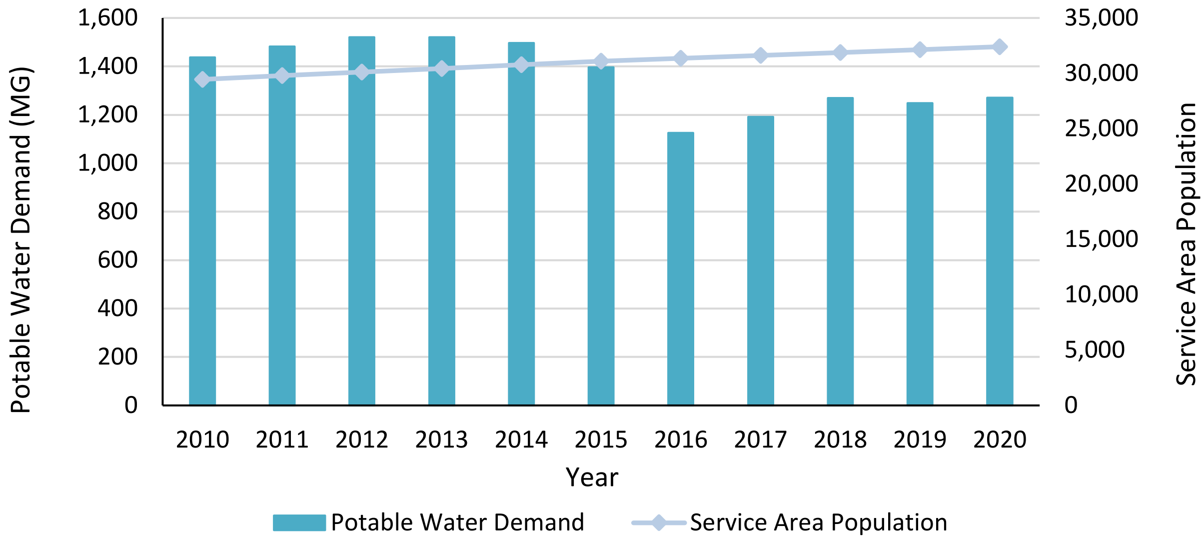
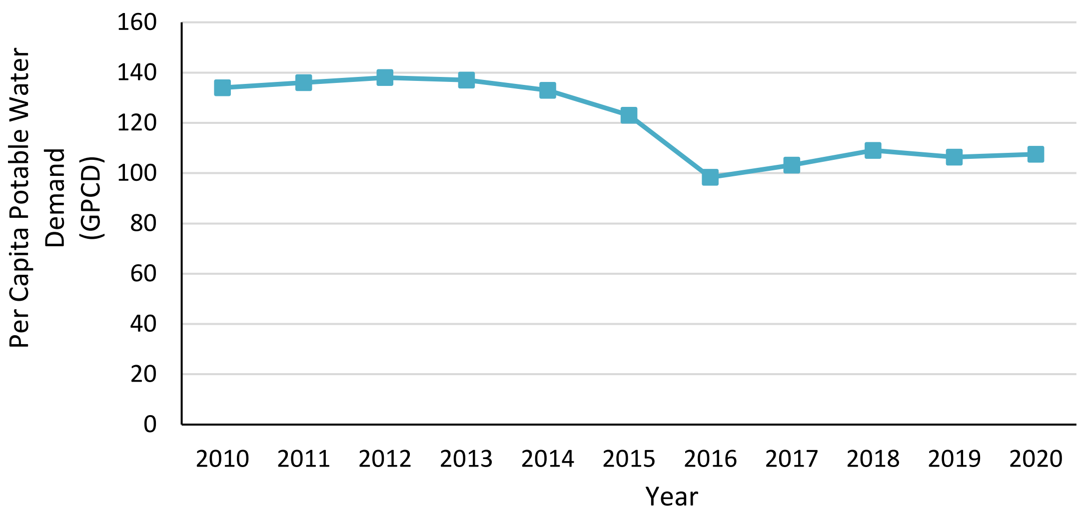


Figure 4-2. Historical and Current Per Capita Potable Water Use



4.1.1 Current and Historical Potable Water Demand

Potable water demand within the Burlingame service area is measured using water meters that are installed for each customer account. Records of current and historical water use for each account are maintained by the City of Burlingame Public Works Department, in coordination with the Finance Department. Water demand within the Burlingame service area is tracked and reported on a bimonthly basis for the following sectors:

- Single Family Residential: Attached or detached dwelling units that are individually metered.

- Multi-Family Residential: Two or more dwelling units served by a common water meter. Water use is predominately for indoor water uses; irrigation water use for multiple family sites are usually separately metered and listed in the irrigation sector.
- Commercial: Includes commercial customers. Irrigation water use at these sites is usually separately metered and listed in the irrigation sector.
- Industrial: Includes industrial customers. Irrigation water use at these sites is usually separately metered and listed in the irrigation sector.
- Institutional/Governmental: Includes meters serving City sites and includes Coyote Point.
- Irrigation: Water meters used exclusively for outdoor uses, such as outdoor areas maintained by Homeowners Associations, city parks, and other landscape-only sites.
- Other: Includes firelines, temporary meters, and miscellaneous customers not listed elsewhere.

As shown in Table 4-2, Figure 4-3, and Figure 4-4, the residential sector accounted for an average of approximately 58% of the potable water demand in the Burlingame service area between 2016 and 2020 (i.e., single family residential demands were approximately 40% of the total demand, while multi-family residential demands accounted for the remaining 18%). Burlingame has a moderate commercial, industrial, and institutional (CII) base, which together accounted for approximately 30% of potable water demand for the 2016-2020 period. The commercial and industrial sectors accounted for 14% and 13% of the total Burlingame water demand, respectively, while the institutional/ governmental sector accounted for 3% of the total water demand. On average, irrigation and fire sprinkler services respectively accounted for 5% and 0.04% of the total water demand. Irrigation services include irrigation water use at accounts that have a separate irrigation meter and does not represent all of the outdoor irrigation water use within Burlingame.

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

Use Type	Additional Description *(as needed)*	Level of Treatment When Delivered	Volume				
			2016	2017	2018	2019	2020
Single Family		Drinking Water	424	460	522	510	542
Multi-Family		Drinking Water	216	225	228	227	229
Commercial		Drinking Water	183	167	184	179	172
Industrial		Drinking Water	159	157	169	169	152
Institutional/Governmental		Drinking Water	26	29	36	37	36
Landscape		Drinking Water	42	50	71	63	69
Losses		Drinking Water	76	102	59	64	71
Other	Fire sprinkler services	Drinking Water	0	1	0	0	0
		TOTAL	1,126	1,191	1,269	1,249	1,271

NOTES:
(a) Water demand is from the City of Burlingame's monthly water consumption reports which are based upon metered water consumption, data was then prorated to align with SFPUC billing dates.
(b) Irrigation water use includes water use recorded at irrigation meters at accounts that are sub-metered and does not represent all irrigation water use.
(c) Other water use includes water used for fire services.
(d) Losses are calculated as the difference between water purchased and water sold, including water losses documented in Table 4-3 and apparent losses, such as unmetered authorized use.
(e) Volumes are in units of MG.

Figure 4-3. Annual Water Demand by Sector: 2016-2020

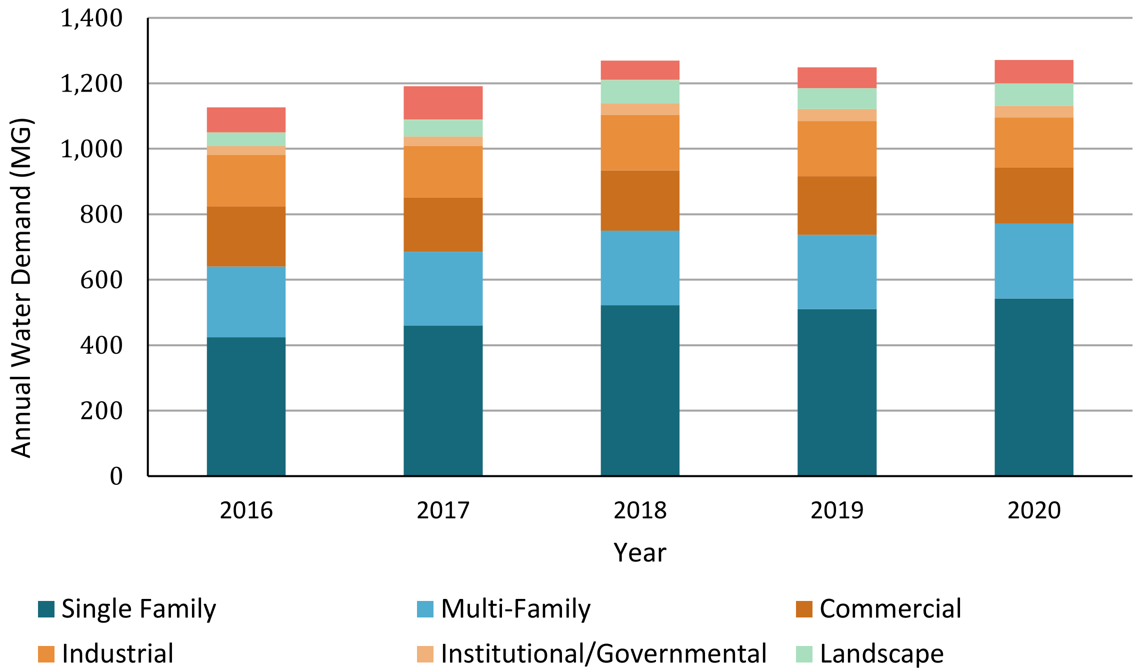
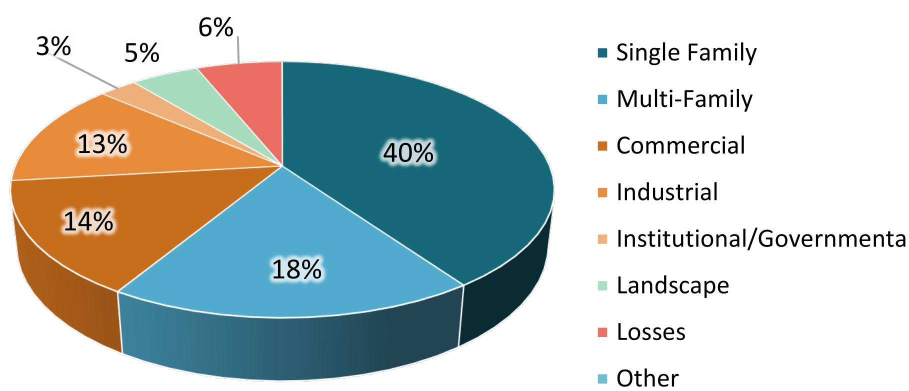


Figure 4-4. Percentage of Total Water Demand by Sector: 2016-2020



4.1.2 Current and Historical Non-Potable Water Demand

Burlingame does not have a recycled water distribution system within the City, and therefore does not have any non-potable water demand.

4.1.3 Distribution System Water Loss

☑ ***CWC § 10631 (3)***

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

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

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

Distribution system water losses are the physical water losses from the water distribution system and the supplier storage facilities, up to the point of customer consumption. Water losses from 2016 through 2020 within the Burlingame service area were estimated by calculating the difference between water purchased from SFPUC and water sold to the City's water customers, with metered consumption dates prorated to align with SFPUC billing dates (see Table 4-2). The City has also compiled an annual water loss audit using the American Water Works Association (AWWA) Free Water Audit Software v5.0 as required under Senate Bill 555 (Table 4-3). Non-revenue water demand for 2016 through 2020 shown in Table 4-3 varies with losses reported in Table 4-2 due to prorating of billing dates. Metering of Burlingame's distribution system is further discussed in Section 9.2.2.

Table 4-3. Last Five Years of Water Loss Audit Reporting (DWR Table 4-4)

Reporting Period Start Date	Volume of Water Loss
07/2015	46
07/2016	97
07/2017	71
07/2018	54
07/2019	64
NOTES: (a) Water loss is reported from the AWWA Free Water Audit Software and is reported on a fiscal year basis. (b) Volumes are in units of MG.	

4.2 Projected Total Water Demand

Per CWC §10631(d)(1), potable and non-potable water demand projections are discussed in the following sections.

4.2.1 Projected Potable Water Demand

In June 2020, BAWSCA completed the *Regional Water Demand and Conservation Projections Report*, referred to as the Demand Study (BAWSCA, 2020). The goal of the Demand Study was to develop transparent, defensible, and uniform demand and conservation savings projections for each Wholesale Customer (i.e. the 26 water districts, cities, and utilities that purchase water from the SFPUC) using a common methodology to support both regional and individual agency planning efforts and compliance with the new statewide water efficiency targets required by Assembly Bill 1668 and Senate Bill 606.

Through the Demand Study process, BAWSCA and the Wholesale Customers (1) quantified the total average-year water demand for each BAWSCA member agency through 2045, (2) quantified passive and active conservation water savings potential for each individual Wholesale Customer through 2045, and (3) identified 24 conservation programs with high water savings potential and/or member agency interest. Implementation of these conservation measures, along with passive conservation, is anticipated to yield an additional 37.3 MGD of water savings by 2045. Based on the revised water demand projections, the identified water conservation savings, increased development and use of other local supplies by the Wholesale Customers, and other actions, the collective purchases of the BAWSCA member agencies from the SFPUC are projected to stay below 184 MGD through 2045.

As part of the Demand Study, each Wholesale Customer was provided with a Demand Management Decision Support System Model (DSS Model)[8] that can be used to support ongoing demand and conservation planning efforts, including UWMP preparation. Future potable water demands within the Burlingame service area were estimated using the 2015 UWMP population and employment projections. In 2021, as part of the 2020 UWMP update, Burlingame's DSS Model was revised using population and employment projections from the City's 2019 General Plan and as previously reflected in Table 3-1 and Table 3-2.

The Burlingame service area has experienced a significant reduction in water use, even before the recent drought period, with per capita demands dropping 16% from 2007 to 2013 (see 2010 and 2015 UWMPs). It is possible that a portion of the Burlingame service area may be "demand-hardened," meaning that additional water savings due to passive or active conservation may not be possible; although, the degree of this demand hardening is not known. As described further in Section 4.2.4, if significant demand hardening is experienced in the Burlingame service area, then active conservation measures in the future may not result in as much water savings as anticipated. Therefore, as a conservative approach, active conservation programs are not included in the projected water demands used for planning purposes and in comparisons to available supply (Chapter 7).

It is estimated that the potable water demand will be approximately 1,721 MG in 2045 within the Burlingame service area, which is a 35% increase relative to the actual 2020 water demand of 1,271 MG. Over the same period, population is estimated to increase by 24% and jobs are expected to increase by 32% in Burlingame. Total projected potable water demand for each water use sector within the Burlingame service area is shown in five-year increments through 2045 in Table 4-4 and Figure 4-5.

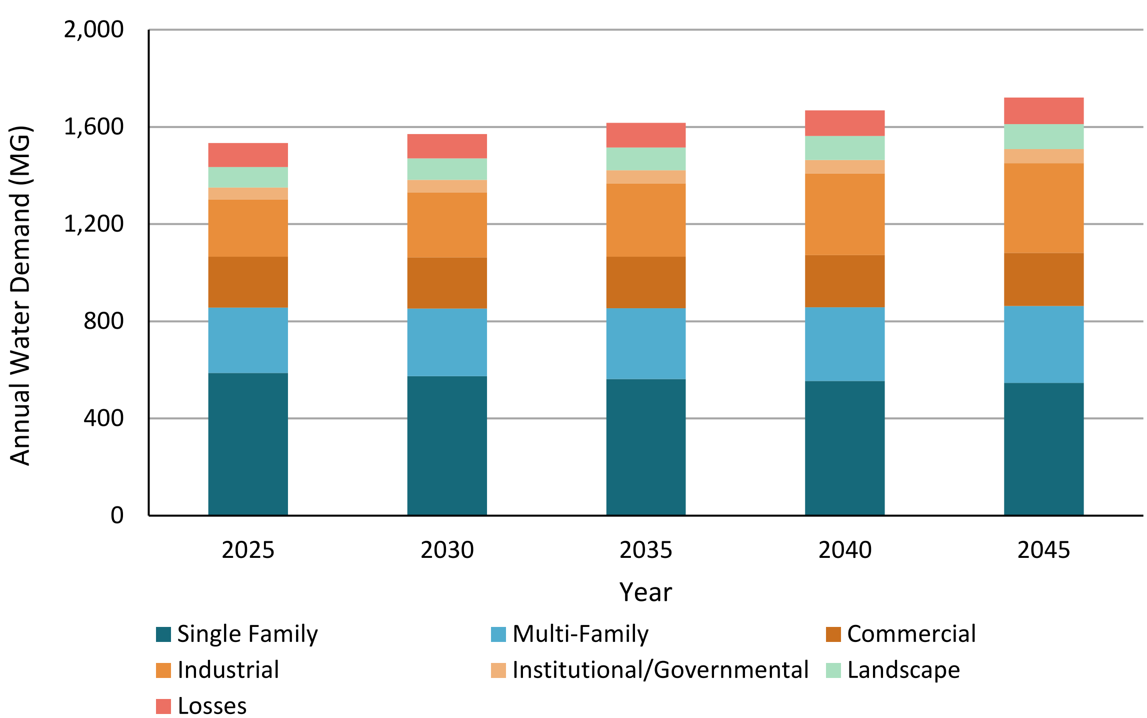
[8] The DSS model was provided to Burlingame by Maddaus Water Management Inc. in June 2020, as a modified version of the model provided in BAWSCA's *Regional Water Demand and Conservation Projections Report*.

Table 4-4. Use for Potable and Non-Potable - Projected (DWR Table 4-2)

Use Type	Projected Water Use				
	2025	2030	2035	2040	2045
Single Family	588	574	563	554	546
Multi-Family	268	278	290	303	317
Commercial	210	211	213	216	219
Industrial	236	268	301	335	368
Institutional/Governmental	49	51	54	56	58
Landscape	84	89	94	99	104
Losses	98	100	102	105	109
TOTAL	1,533	1,571	1,617	1,668	1,721

NOTES:
(a) Projected water demands and conservation were estimated using an updated DSS Model with population and employment projections from the Burlingame General Plan (as documented in Table 3-1 and Table 3-2).
(b) Total water demand is the sum of metered water consumption and losses. The projected water demands include anticipated passive savings from plumbing codes. Savings from anticipated active water conservation programs are not included.
(c) Volumes are in units of MG.

Figure 4-5. Projected Water Demand by Sector



4.2.2 Projected Non-Potable Water Demand

The City owns one groundwater supply well that is located near Washington Park (i.e., the "WP Well"), which has historically been used on occasion to irrigate portions of City-owned landscaping and parks. Currently, the WP Well is only used intermittently for de minimis non-potable demands (e.g., limited irrigation and wash water). The City does not currently supply non-potable water to customers and does not currently have plans to distribute recycled water to customers.

4.2.3 Water Use for Lower Income Households

☑ ***CWC § 10631.1***

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

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

The potable water demands presented in Section 4.2.1 include projected future water use by lower income households. Per Health and Safety Code 50079.5, a lower income household is defined as a household with lower than 80% of the area's median income.

The projected low income water use was based on the projected number of needed very low income units identified in the 2015-2023 Housing Element (City of Burlingame, 2015) and updated in the Housing Element Annual Progress Report (City of Burlingame, 2020). The Housing Element projected a need for 2,756 extremely and very low income units by 2023, or approximately 20% of households. It is therefore assumed that approximately 20% of single family and multi-family residential water demands within Burlingame's service area will be associated with lower income households. Table 4-5 contains the estimated future water use for lower income households. These demands were included in the total potable water demand projections described above and shown in Table 4-4.

Table 4-5. Projected Potable Water Demand of Lower-Income Households

Lower-income Water Demand Sector	Projected Water Use				
	2025	2030	2035	2040	2045
Single Family	142	138	136	139	160
Multi-Family	154	165	177	183	172

NOTES:
(a) Lower-income households includes extremely low and very low income levels, which account for 20% of total housing units (City of Burlingame, 2015).
(b) Single family and multi-family breakdown based on percentages of dwelling units in Burlingame's General Plan (City of Burlingame, 2019).
(c) Volumes are in units of MG.

4.2.4 Water Savings from Codes, Standards, Ordinances, or Transportation and Land Use Plans

☑ ***CWC § 10631 (d) (4)***

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

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

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

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

Passive conservation refers to water savings resulting from actions and activities that do not depend on direct financial assistance or educational programs implemented by water suppliers. These savings result primarily from: (1) the natural replacement of existing plumbing fixtures with water-efficient models required under current plumbing code standards,[9] (2) the installation of water-efficient fixtures and equipment in new buildings and retrofits as required under CALGreen Building Code Standards,[10] and (3) inclusion of low-water use landscaping and high-efficiency irrigation systems to minimize outdoor water use in new connections and projects in accordance with the State's Model Water Efficient Landscape Ordinance (MWELO).

Burlingame has complied with MWELO by adopting the Water Conservation in Landscape Ordinance (Chapter 18.17 of the Burlingame Municipal Code, Ordinance 1845-2010) in March 2010. This ordinance applies to new and rehabilitated landscapes with irrigated landscape areas over 1,500 square feet on projects subject to City review and approval. Water savings associated with inclusion of low-water use plants and high-efficiency irrigation systems to minimize outdoor water use in accordance with the Water Conservation in Landscaping Ordinance are included in the water demand estimates for new connections and projects.

Active conservation refers to water savings resulting from Burlingame's implementation of water conservation programs, education programs, and the offering of financial incentives (e.g., rebates). Burlingame's current and planned active conservation programs are discussed in Chapter 9.

The potable water demand projections discussed in Section 4.2.1 take into account passive conservation savings, as indicated in Table 4-6 and shown in Table 4-7 and Figure 4-6. Additional water savings are expected due to Burlingame's active conservation efforts; however, for conservative planning purposes

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[9] Including the California Energy Commission Title 20 appliance standards for toilets, urinals, faucets, and showerheads. The appliance standards determine what can be sold in California and therefore will impact both new construction and replacement fixtures in existing homes.

[10] The City requires that all new residential and non-residential construction comply with the mandatory CALGreen Requirements (Chapter 18.30 of the Burlingame Municipal Code, Ordinance 1857-2010, adopted in 2010).

these conservation savings are not included in the total potable water demand projections. As can be seen in Table 4-7, by 2045, it is estimated that passive conservation savings will reduce total projected water demand by 258 MG within the Burlingame service area (i.e., the total 2045 demand will be reduced from 1,979 MG to 1,721 MG). An additional 50 MG of water savings may be achieved through active conservation.

Table 4-6. Inclusion in Water Use Projections (DWR Table 4-5)

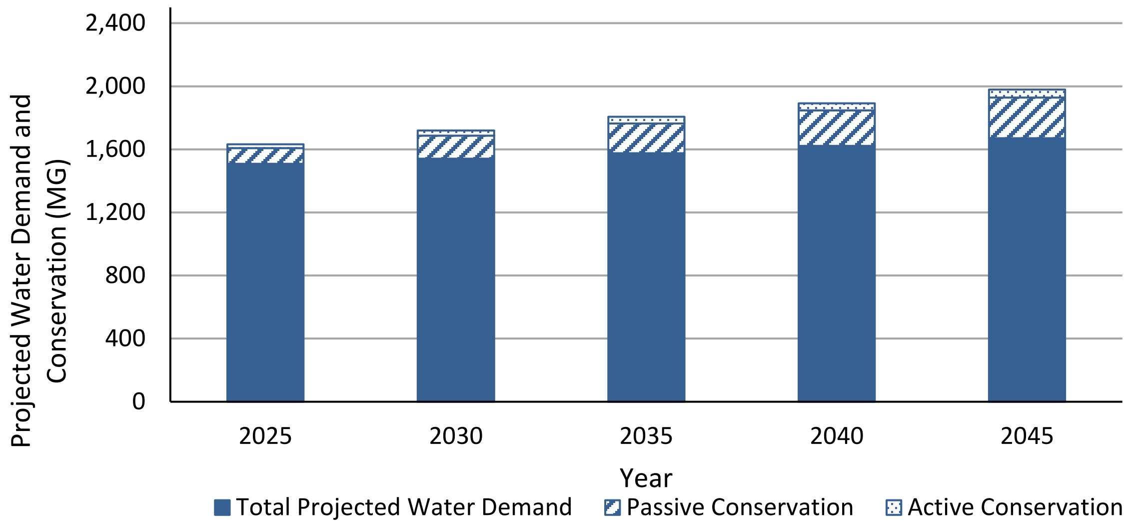
Are Future Water Savings Included in Projections?	Yes
If "Yes" to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, or otherwise are utilized in demand projections are found.	UWMP Section 4.2.4
Are Lower Income Residential Demands Included In Projections?	Yes
NOTES:	

Table 4-7. Projected Potable Water Demand and Projected Passive and Active Water Conservation

Water Conservation Type	Projected Total Water Demand				
	2025	2030	2035	2040	2045
Projected Water Demand	1,633	1,719	1,806	1,892	1,979
Projected Water Conservation					
Passive Conservation	100	147	188	224	258
Active Conservation	25	32	42	46	50
Projected Water Demand after Passive Conservation Savings	1,533	1,572	1,617	1,668	1,721
Projected Water Demand after Passive and Active Conservation Savings	1,508	1,541	1,576	1,622	1,671

NOTES:
(a) Projected water demands and conservation were estimated using an updated DSS Model with population and employment projections from the Burlingame General Plan (as documented in Table 3-1 and Table 3-2).
(b) Total water demand is the sum of metered water consumption and losses.
(c) Volumes are in units of MG.

Figure 4-6. Projected Water Demand and Conservation



4.2.5 Projected Total Water Demand

The projected total water demand is the same as projected potable water demand described in Section 4.2.1 since Burlingame does not serve recycled water, see Table 4-8.

Table 4-8. Total Water Use (Potable and Non-Potable) (DWR Table 4-3)

	2020	2025	2030	2035	2040	2045
Potable Water, Raw, Other Non-potable *From DWR Tables 4-1 and 4-2*	1,271	1,533	1,571	1,617	1,668	1,721
Recycled Water Demand *From DWR Table 6-4*	0	0	0	0	0	0
Optional Deduction of Recycled Water Put Into Long-Term Storage	0	0	0	0	0	0
TOTAL WATER USE	1,271	1,533	1,571	1,617	1,668	1,721
NOTES: (a) Volumes are in units of MG.						

4.3 Water Use Sectors Not Included in the Demand Projections

Historical and projected water demands for the water use sectors described in CWC §10631(d)(1)(G) through (I) and listed below were not included in Burlingame's water demand calculations because they are not applicable to the City:

- Sales to other agencies;
- Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof; and
- Agricultural.

4.3.1 Sales to Other Agencies

Metered interties exist between the Burlingame water system and the City of Millbrae and the Town of Hillsborough water system. Burlingame has sold water to Millbrae in the past through the intertie. The City also has unmetered interties with the California Water Service Company along the southern portion of the distribution system. These water sales are not included in Burlingame's water demand estimate because, although Burlingame does have an understanding with Millbrae that it can buy or sell water in emergency situations or pursuant to project-specific agreements, Burlingame does not sell water under normal operating conditions.

4.3.2 Saline Water Intrusion Barriers, Groundwater Recharge, and Conjunctive Use

Burlingame does not use water for saline water intrusion barriers and does not currently participate in active groundwater recharge activities or a conjunctive use program.

4.3.3 Agricultural

Burlingame does not sell water to agricultural customers and does not expect to in the future.

4.4 Climate Change Impacts to Demand

☑ ***CWC § 10635(b)***

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

Hotter and drier weather may lead to an increased demand in landscape irrigation. The DSS Model assesses the sensitivity of the City's water demand to weather and then incorporates predicted weather and climate change data into demand projections. Therefore, the demand projections presented in Section 4.2 includes considerations of climate change.

A description of the weather and climate change data incorporated into the DSS Model is provided Section 3.6 of the BAWSCA Demand Study (BAWSCA, 2020). Based on data published by International Panel on Climate Change and the California's Fourth Climate Change Assessment San Francisco Bay Area Summary Report, a predicted annual mean temperature increase of 1.7°F was incorporated into the DSS Model demand forecast for the time period of 2019 to 2045.

The 2030 Climate Action Plan (City of Burlingame, 2019) covers Burlingame's response to the challenges posed by climate change. The San Francisco Bay area anticipates that future decrease of snowpack in the Sierras and longer drought conditions will impact fresh water supply to the area. With respect to California's drought history, water conservation is vital to the State's sustainability and will continue to remain a key priority in Burlingame. Actions that will be undertaken by the City can be found in Chapter 9 and in the 2030 Climate Action Plan.

4.5 Coordinating Water Use Projections

☑ ***CWC § 10631 (h)***

An urban water supplier that relies upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available.

Burlingame provides the SFPUC with water use projections annually as part of reporting to the BAWSCA Annual Surveys and other BAWSCA-led water demand and supply coordination efforts as dictated by the 2009 Water Supply Agreement. As part of the coordination effort for the 2020 UWMP, and in compliance with CWC §10631(h), Burlingame supplied BAWSCA with its water demand projections through 2045 for transmittal to the SFPUC.[11]

[11] Email to BAWSCA, dated November 12, 2020.

4.6 Urban Water Use Objectives

☑ ***CWC § 10609.20***

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

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

☑ ***CWC § 10609.22***

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

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

☑ ***CWC § 10609.24***

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

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

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

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

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

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

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

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

Beginning in 2023, urban water retailers will be required to report on annual water use objectives by November 1 of each year and to achieve these objectives by January 1, 2027. The annual water use objectives will be calculated based on standards for indoor residential water use, outdoor residential water use, and distribution system water loss. Additionally, it is anticipated that performance-based standards for the commercial, industrial, and institutional sectors, separate from the annual water use objectives, will also be developed by DWR and implemented in the future. However, the specific standards that will be used to determine a retailer's annual urban water use objectives are currently under development by DWR, and thus, the annual urban water use objectives for the City cannot be calculated or estimated. Once the urban water use objectives are released, the City will evaluate its historical and current water use compared to the new objectives, and will evaluate the need to adjust its conservation and water loss management measures to meet the new objectives.

One of the components for calculating the future water use objectives is provided for in CWC § 10609.4.(a), which states "(1) Until January 1, 2025, the standard for indoor residential water use shall be 55 gallons per capita daily. (2) Beginning January 1, 2025, and until January 1, 2030, the standard for indoor residential water use shall be the greater of 52.5 gallons per capita daily or a standard recommended pursuant to subdivision (b). (3) Beginning January 1, 2030, the standard for indoor residential water use shall be the greater of 50 gallons per capita daily or a standard recommended pursuant to subdivision (b)."[12] Table 4-9 and Figure 4-7 show an estimate of Burlingame's projected future per capita residential water use, broken out by estimated indoor and outdoor water use, provided from the DSS Model projections. Based on these estimates, per capita indoor residential potable water use is expected to be at or below the indoor use standards presented in the legislation. Although indoor residential water use is expected to be within the indoor residential water use standard, it should be noted that because standards have not yet been developed for the outdoor water use or water loss components of the future water use objectives, it cannot be known whether projected demands for the City will be in compliance with the pending requirements.

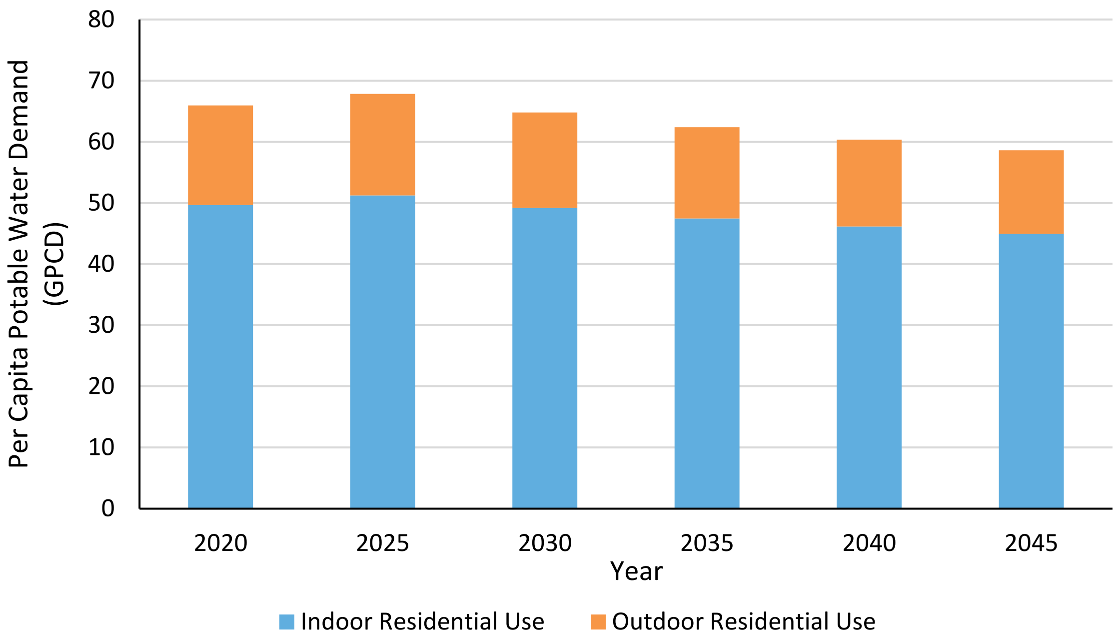
Table 4-9. Current and Projected Residential Per Capita Water Use

Year	Residential Potable Water Demand	Service Area Population	Per Capita Residential Potable Water Use (GPCD)	Approximate Per Capita Indoor Residential Potable Water Use (GPCD)	Approximate Per Capita Outdoor Residential Potable Water Use (GPCD)
2020	780	32,407	66	50	16
2025	856	34,592	68	51	17
2030	852	36,024	65	49	16
2035	853	37,457	62	47	15
2040	857	38,889	60	46	14
2045	863	40,322	59	45	14

NOTES:
(a) See Table 4-4 for more details on projected water demand by sector. Residential water use includes single family and multi-family use.
(b) See Table 3-1 for more details on projected service area population.
(c) Per capita potable water use is calculated by dividing the total annual potable water demand by the service area population and the number of days in a year.
(d) Projected indoor and outdoor water use were estimated using an updated DSS Model.
(e) Unless otherwise noted, volumes are in units of MG.

[12] While the legislation appears to be clear on the method to calculate the indoor residential water use component, the SWRCB has begun the California Environmental Quality Act (CEQA) process for the new water use objective requirements and has expressed concern that using the 55 gallons per capita per day (GPCD) number in the legislation will constitute "backsliding" (compared to the reduction required by SB X7-7) and thus may need to be lowered.

Figure 4-7. Current and Projected Indoor and Outdoor Residential Per Capita Potable Water Use



5. BASELINE WATER USE AND WATER CONSERVATION TARGETS

☑ ***CWC § 10608.20 (h) (1)***

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

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

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

The Water Conservation Act of 2009 (Water Conservation Act) directed the Department of Water Resources (DWR) to develop technical methodologies and criteria to ensure the consistent implementation of the Water Conservation Act and to provide guidance to urban retail water suppliers in developing baseline and compliance water use. The Water Conservation Act was incorporated into Division 6 of the California Water Code (CWC) commencing with Section 10608 of Part 2.55. The methodologies for developing baseline and compliance water use are established in *Methodologies for Calculating Baseline and Compliance Urban Per Capita Water, California Department of Water Resources Division of Statewide Integrated Water Management Water Use and Efficiency Branch*, March 2016 update (Methodologies; DWR, 2016b)

The CWC §10608.20 and §10608.28 allow water suppliers the choice of complying individually or regionally by mutual agreement with other water suppliers or regional agencies. The DWR has also developed a methodology for regional compliance. The following calculation methodologies have been developed and are described in Methodologies (DWR, 2016b):

- Methodology 1: Gross Water Use
- Methodology 2: Service Area Population
- Methodology 3: Base Daily Per Capita Water Use
- Methodology 4: Compliance Daily Per Capita Water Use
- Methodology 5: Indoor Residential Use
- Methodology 6: Landscaped Area Water Use
- Methodology 7: Baseline Commercial, Industrial, and Institutional Water Use
- Methodology 8: Criteria for Adjustments to Compliance Daily Per Capita Water Use
- Methodology 9: Regional Compliance

Baselines and water use targets for the City Burlingame's (City or Burlingame) service area were presented in the 2010 Urban Water Management Plan (UWMP or Plan) in response to the Water Conservation Act. Per requirements of the DWR, the 2015 UWMP included an update to the baseline and water use target calculations using 2010 United States Census data and analyzed Burlingame's compliance with its 2015 interim water use target. In this 2020 UWMP, water use targets and 2020 compliance data are summarized in Table 5-1 through Table 5-3. Detailed calculations are included in Appendix D.

5.1 Service Area Population

☑ ***CWC § 10608.20 (e)***

An urban retail water supplier shall include in its urban water management plan due in 2010 pursuant to Part 2.6 (commencing with Section 10610) the baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.

☑ ***CWC § 10608.20 (g)***

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

☑ ***Methodology 2 Service Area Population****.*

DWR will examine discrepancy between the actual population estimate and DOF's projections for 2010; if significant discrepancies are discovered, DWR may require some or all suppliers to update their baseline population estimates. (DWR, 2016b)

In the 2015 UWMP, Burlingame modified its baseline and target gallons per capita per day (GPCD) values from the 2010 UWMP to meet DWR's requirement of using 2010 Census data for its baseline population calculations. In 2010, the population for the Burlingame service area was estimated using Department of Finance data and the City's 2010 Housing Element; the estimated population was 30,282. For the 2015 UWMP, DWR's Population Tool was used to estimate historical population through 2015. The DWR Population Tool provides population estimates based on Census data, the number of service connections provided by Burlingame, and the geographic boundary of the Burlingame service area.

The population in 2020 for the service area within City limits was estimated to be 30,118 based also on Department of Finance data (State of California, 2020). Burlingame also services the unincorporated Burlingame Hills area where the population was estimated to be 2,289 in 2020.[13] Therefore, the combined population of the Burlingame water service area is 32,407. See Table 5-1 for SB X7-7 baseline and compliance year populations.

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[13] The Census Tract 6050 covers parts of Burlingame and the Burlingame Hills area and includes a total population of 8,447 (Census, 2020). The Burlingame Hills area covers 27.1% of Census Tract 6050, and is therefore assumed to include 27.1% of the population, or 2,289 people.

Table 5-1. SB X7-7 Service Area Population

Year		Population
10 to 15 Year Baseline Population		
Year 1	1996	28,214
Year 2	1997	28,379
Year 3	1998	28,544
Year 4	1999	28,711
Year 5	2000	28,900
Year 6	2001	28,032
Year 7	2002	26,868
Year 8	2003	27,187
Year 9	2004	27,521
Year 10	2005	27,881
5 Year Baseline Population		
Year 1	2003	27,187
Year 2	2004	27,521
Year 3	2005	27,881
Year 4	2006	28,187
Year 5	2007	28,525
2020 Compliance Year Population		
2020		32,407
NOTES:		

5.2 Baseline Water Use

Water suppliers must define a 10- or 15-year base (or baseline) period for water use that is then used to develop their future target per capita water use. Water suppliers must also calculate water use over a 5-year baseline period and use that value to determine a minimum required reduction in water use by 2020. Utilizing a 15-year baseline period is only allowed for water suppliers that meet at least 10% of their 2008 measured retail water demand through recycled water; Burlingame does not meet this criterion and thus selected a 10-year baseline. In the 2015 UWMP, Burlingame updated the per capita water use calculations to use the revised population estimates described in Section 5.1 and the historical potable water demand information presented in the 2010 UWMP.

The 10-year baseline water use was calculated using gross per capita water usage data (calculated as total water entering the Burlingame water distribution system, including uses by commercial, industrial, and water losses, divided by total population) for the 10-year period between Fiscal Year (FY) 1995-96 to FY 2004-05 (i.e. July 1, 1995 and June 30, 2005). The 5-year baseline water use was calculated using per capita water usage data for the 5-year period between FY 2002-03 and FY 2006-07 (i.e. July 1, 2002 and June 30, 2007). The updated 5- and 10-year baseline water uses are shown in Table 5-2 and in Appendix D.

5.3 Water Use Targets

☑ ***CWC § 10608.20 (b)***

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

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

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

(A) For indoor residential water use, 55 gallons per capita daily water use as a provisional standard. Upon completion of the department's 2016 report to the Legislature pursuant to Section 10608.42, this standard may be adjusted by the Legislature by statute.

(B) For landscape irrigated through dedicated or residential meters or connections, water efficiency equivalent to the standards of the Model Water Efficient Landscape Ordinance set forth in Chapter 2.7 (commencing with Section 490) of Division 2 of Title 23 of the California Code of Regulations, as in effect the later of the year of the landscape's installation or 1992. An urban retail water supplier using the approach specified in this subparagraph shall use satellite imagery, site visits, or other best available technology to develop an accurate estimate of landscaped areas.

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

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

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

(A) Consider climatic differences within the state.

(B) Consider population density differences within the state.

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

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

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

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

☑ ***CWC § 10608.22***

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

The Water Conservation Act requires that water suppliers calculate their 2020 water use targets (Targets) using one of the following four methods:

- Method 1: Eighty percent 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 use, landscaped area water use, and commercial, industrial, and institutional uses;
- Method 3: Ninety-five percent of the applicable state hydrologic region target as stated in the State's 20x2020 Water Conservation Plan, dated February 2010; or
- Method 4: Total savings subtracted from baseline water use. Savings include metering savings, residential savings, commercial, industrial, and institutional savings, and landscape and water loss savings.

The 2020 Target was adjusted in 2015 to achieve a minimum reduction in water use regardless of the target method (this is explained in Methodology 3). The CWC §10608.24 directs that water suppliers must compare their actual water use in 2020 with their calculated Target to assess compliance. In addition, as part of the 2015 UWMP water suppliers had to comply with an interim target in 2015 which was established as the midpoint between the baseline water use and the 2020 Target. The years 2015 and 2020 are referred to in the Methodologies as compliance years. Burlingame's 2020 Target was updated in the 2015 UWMP to 135 GPCD using Method 1 (see Table 5-2). Complete Target calculations are included in Appendix D.

The Water Conservation Act also contains a minimum allowable cutback in per capita water consumption. This minimum water use cutback is calculated as 95% of the Burlingame average water consumption between 2003 and 2007 (i.e., the 5-year baseline). The 5-year baseline water use is calculated as 165 GPCD and 95% of this is 157 GPCD (see Table 5-2 and Appendix D). Since the 2020 Target of 135 GPCD is less than 95% of the 5-year baseline, the selected 2020 Target meets the compliance criteria.

Table 5-2. Baselines and Targets Summary (DWR Table 5-1)

Baseline Period	Start Year	End Year	Average Baseline GPCD	Confirmed 2020 Target GPCD
10-15 year	*1996*	*2005*	*169*	135
5 Year	*2003*	*2007*	*165*	
NOTES:				

5.4 2020 Target Compliance

☑ ***CWC § 10608.24 (b)***

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

☑ ***CWC § 10608.24 (d)***

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

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

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

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

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

☑ ***CWC § 10608.40***

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

The CWC §10608.24 (b) directs that water suppliers must calculate their actual water use in 2020 to determine whether or not they have met their 2020 Target. Per the Methodologies (DWR, 2016b), there are several allowable adjustments that can be made to a supplier's 2020 per capita water use calculations as part of evaluating target compliance. However, no adjustments were necessary to Burlingame's 2020 per capita water use calculations.

As described above, in 2020 actual water demand within the Burlingame service area was 1,271 MG and the service area population was 32,407. Therefore, the calculated per capita water use in 2020 was 107 GPCD, approximately 79% of Burlingame's 2020 Target of 135 GPCD (see Table 5-3). Therefore, Burlingame is in compliance with its 2020 Target.

Table 5-3. 2020 Compliance (DWR Table 5-2)

2020 GPCD			2020 Confirmed Target GPCD	Did Supplier Achieve Targeted Reduction for 2020?
Actual 2020 GPCD	2020 TOTAL Adjustments	Adjusted 2020 GPCD *(Adjusted if applicable)*		
107	--	--	135	Y
NOTES:				

5.5 Water Use Reduction Plan

The actual water demand within the Burlingame service area in FY 2019-20 was well below the 2020 Target. This is due to both exiting the recent drought period where residents and businesses are more mindful of their water usage and the on-going conservation efforts that the City has supported (see Section 1.1).

A partial rebound in water demand is expected to occur from 2020 to 2025. However, water demand is not expected to return to pre-drought demand. Per capita water demand is projected to be approximately 121 GPCD in 2025, which remains in compliance with the 2020 Target of 135 GPCD. This estimate is based on population projections described in Section 3.1.1 and the future water demand projections described in Section 4.2.

The City will continue to actively manage its per capita water use through implementation of demand management measures as discussed in Section 9.3. To the extent that Burlingame develops additional recycled water supplies or individual private development projects that implement on-site water recycling, as discussed in Chapter 6, the projected future potable demands in 2045 are likely to be further reduced beyond the conservative estimates presented herein.

6. WATER SYSTEM SUPPLIES

☑ ***CWC § 10631 (b)*** *A plan shall be adopted in accordance with this chapter that shall do all of the following:*

Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a).

The City of Burlingame (City or Burlingame) purchases all of its potable water from the San Francisco Public Utilities Commission (SFPUC) Regional Water System (RWS) in accordance with the Water Supply Agreement (WSA) between the City and County of San Francisco and Wholesale Customers in Alameda, San Mateo and Santa Clara Counties, that was approved by the SFPUC on April 28, 2009 and amended in November 2018.

To maintain consistency with the Urban Water Management Plans (UWMPs) prepared by the SFPUC and the other Bay Area Water Supply and Conservation Agency (BAWSCA) member agencies, much of the language describing the SFPUC wholesale water supply in the following sections is common language provided by BAWSCA, in coordination with the SFPUC.

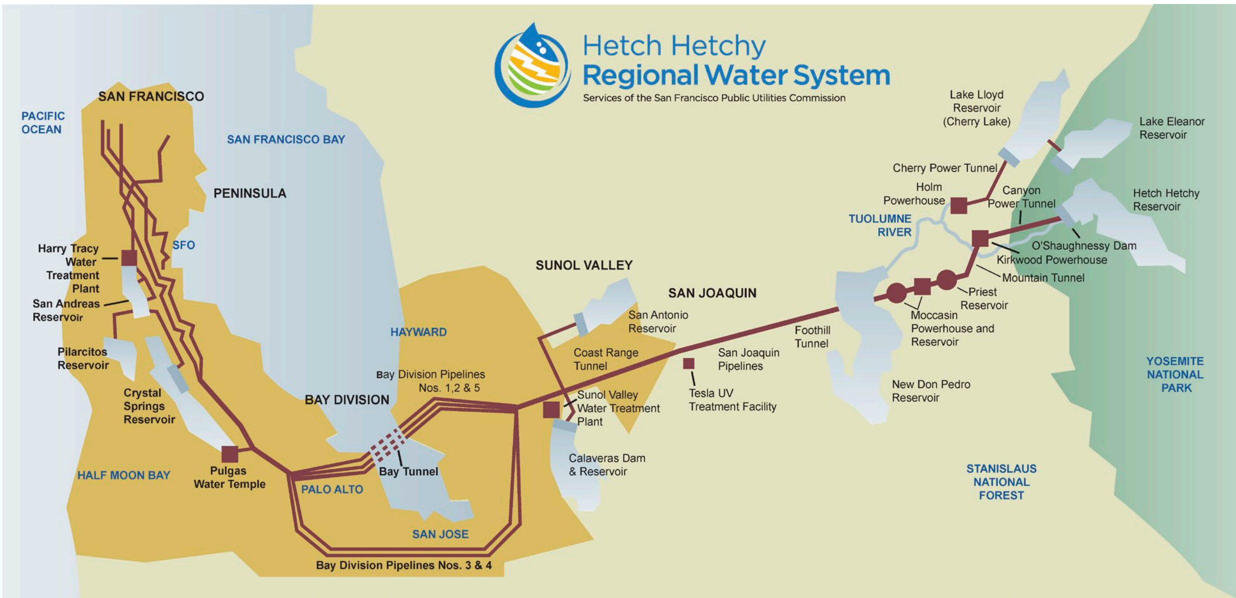
6.1 Purchased or Imported Water

This section describes the sources of wholesale water provided by SFPUC, and the process for allocating water between SFPUC, BAWSCA, and wholesale customers.

6.1.1 Description of SFPUC RWS

Approximately 85% of the water supply to the SFPUC RWS originates in the Hetch Hetchy watershed, located in Yosemite National Park, and flows down the Tuolumne River into the Hetch Hetchy Reservoir. Water from the Hetch Hetchy watershed is managed through the Hetch Hetchy Water and Power Project. The remaining 15% of the water supply to the SFPUC RWS originates locally in the Alameda and Peninsula watersheds and is stored in six different reservoirs in Alameda and San Mateo Counties. Details of the various components of the SFPUC RWS are provided below and are shown on Figure 6-1. Information regarding the Hetch Hetchy, Alameda, and Peninsula water systems is sourced from the SFPUC's 2020 UWMP and is provided below.

Figure 6-1. Regional Water System



Water Distribution

The RWS, shown in Figure 6-1, consists of more than 280 miles of pipelines, 60 miles of tunnels, 11 reservoirs, five pump stations, and two water treatment plants. It includes the Hetch Hetchy Project and the Bay Area water system facilities. The Hetch Hetchy Project is generally composed of the reservoirs, hydroelectric generation and transmission facilities, and water transmission facilities from the Hetch Hetchy Valley west to the Alameda East Portal of the Coast Range Tunnel in Sunol Valley. Water system components of the Hetch Hetchy Project are also referred to as the Hetch Hetchy System. The local Bay Area water system is comprised of two parts—the Alameda System and the Peninsula System—generally consisting of the facilities west of the Alameda East Portal of the Coast Range Tunnel, including the 63,000-acre Alameda and Peninsula watersheds, storage reservoirs, two water treatment plants, and the distribution system that delivers water to both retail and wholesale customers. The Hetch Hetchy, Alameda, and Peninsula Systems are described in more detail below.

Hetch Hetchy System: In the Hetch Hetchy System, water is diverted from Hetch Hetchy Reservoir into a series of tunnels and aqueducts from the Sierra Nevada to the San Joaquin Pipelines that cross the San Joaquin Valley to the Coast Range Tunnel, which connects to the Alameda System at the Alameda East Portal. Hetch Hetchy System water is disinfected at the Tesla Treatment Facility.

Alameda System: The Alameda System includes two reservoirs, San Antonio Reservoir and Calaveras Reservoir, which collect water from the San Antonio Creek, Upper Alameda Creek, and Arroyo Hondo watersheds in Alameda County. San Antonio Reservoir also receives water from the Hetch Hetchy System. Conveyance facilities in the Alameda System connect the Hetch Hetchy System and Alameda water sources to the Peninsula System. The BDPLs cross the South Bay to the Peninsula System delivering water to customers along the pipeline route. The Sunol Valley Water Treatment Plant (SVWTP) filters and disinfects water supplied from San Antonio Reservoir and Calaveras Reservoir.

Peninsula System: The Peninsula System includes conveyance facilities connecting the BDPLs to the in-City distribution system and to other customers on the Peninsula. Two reservoirs, Crystal Springs Reservoir and San Andreas Reservoir, collect runoff from the San Mateo Creek watershed. Crystal Springs Reservoir also receives water from the Hetch Hetchy System. A third reservoir, Pilarcitos Reservoir, collects runoff from the Pilarcitos Creek watershed and directly serves one of the Wholesale Customers, the Coastside County Water District (which includes the City of Half Moon Bay), along with delivering water to Crystal Springs and San Andreas Reservoirs. The Harry Tracy Water Treatment Plant (HTWTP) filters and disinfects water supplied from Crystal Springs Reservoir and San Andreas Reservoir before it is delivered to customers on the Peninsula and the in-City distribution system.

Water Treatment

The Hetch Hetchy Reservoir is the largest unfiltered water supply on the West Coast, and one of only a few large unfiltered municipal water supplies in the nation. The water originates from well-protected wilderness areas in Yosemite National Park, which flows down the Tuolumne River to Hetch Hetchy Reservoir. This water meets or exceeds all federal and State criteria for watershed protection. Water from Hetch Hetchy Reservoir is protected in pipes and tunnels as it is conveyed to the Bay Area, and requires pH adjustment to control pipeline corrosion and disinfection for bacteria control. Based on the SFPUC's disinfection treatment practice, extensive bacteriological quality monitoring, and high operational standards, the U.S. Environmental Protection Agency (USEPA) and the SWRCB Division of Drinking Water (DDW) determined that the Hetch Hetchy water source meets federal and State drinking water quality requirements without the need for filtration.

A new USEPA regulation took effect in 2012 requiring secondary disinfection for all unfiltered drinking water systems to control the waterborne parasite cryptosporidium. To comply with this regulation, the SFPUC completed construction of a new ultraviolet (UV) treatment facility in 2011. The Tesla Treatment Facility is a key component of the Water System Improvement Program (WSIP) and enhances the high-quality water from the RWS. The facility has a capacity of 315 MGD, making it the third largest UV drinking water disinfection facility in the U.S.

All water derived from sources other than Hetch Hetchy Reservoir is treated at one of two treatment plants: the SVWTP or the HTWTP. The SVWTP primarily treats water from the Alameda System reservoirs and has both a peak capacity and sustainable capacity of 160 MGD. Treatment processes include coagulation, flocculation, sedimentation, filtration, disinfection, fluoridation, corrosion control treatment, and chloramination. Fluoridation, chloramination, and corrosion control treatment can also be provided for the combined Hetch Hetchy System and SVWTP water at the Sunol Valley Chloramination Facility. The HTWTP treats water from the Peninsula System reservoirs and has a peak capacity of 180 MGD and a sustainable capacity of 140 MGD. Treatment processes include ozonation, coagulation, flocculation, filtration, disinfection, fluoridation, corrosion control treatment, and chloramination. Major upgrades to the SVWTP were completed in 2013 and to the HTWTP in 2015.

Water Storage

The majority of the water delivered by the SFPUC is supplied by runoff from the upper Tuolumne River watershed on the western slope of the central Sierra Nevada. Three major reservoirs collect runoff: Hetch Hetchy Reservoir, Lake Lloyd (a.k.a., Cherry Lake), and Lake Eleanor. A "water bank" in Don Pedro

Reservoir is also integrated into system operations.[14] Don Pedro Reservoir, which is jointly owned and operated by Modesto Irrigation District and Turlock Irrigation District (the Districts), is located on the Tuolumne River downstream of the Hetch Hetchy System.

As a by-product of water delivery and water supply management, hydroelectric power is generated by the Hetch Hetchy Water and Power System. Water stored in Hetch Hetchy Reservoir is used for hydroelectric generation and also satisfies instream flow requirements when released downstream. Normally, only Hetch Hetchy Reservoir water supplies are exported to the Bay Area, while releases from Lake Eleanor and Lake Lloyd are used to satisfy instream flow requirements, satisfy Raker Act entitlements to the Districts downstream, and produce hydroelectric power. The Hetch Hetchy Water and Power System includes three major hydroelectric powerhouses along the Tuolumne River—Holm, Kirkwood, and Moccasin—that have a collective generating capacity of nearly 400 megawatts.

Downstream of the Hetchy System, the SFPUC utilizes local watersheds in the Bay Area. Crystal Springs, San Andreas, and Pilarcitos Reservoirs, located in San Mateo County, capture local runoff in the Peninsula watershed, and Calaveras and San Antonio Reservoirs, located in Alameda Country, capture local runoff in the Alameda watershed. In addition to capturing local runoff, San Andreas, San Antonio, and Crystal Springs Reservoirs also provide storage for water from the Hetch Hetchy System and, along with Calaveras Reservoir, are an important water supply in the event of an interruption to Hetch Hetchy System deliveries.

Calaveras Reservoir had been operating in recent years at one-third of its capacity due to restrictions imposed by the DWR Division of Safety of Dams (DSOD). The Calaveras Dam Replacement Project, which took place from 2011 to 2019, involved the construction of a new dam downstream of the existing dam. The SFPUC began impounding water behind the new dam in the winter of 2018/2019 and continued the initial fill of the reservoir during the 2019/2020 winter season.

[14] The Turlock Irrigation District and Modesto Irrigation District have senior water rights to the City for the Tuolumne River water and are provided the first increment of flow in the Upper Tuolumne River watershed according to the apportionment set forth in the Raker Act of 1913 (38 Stat. 242). The water bank at Don Pedro Reservoir provides a credit and debit system, which allows the City to divert water upstream while meeting its obligations to the Turlock Irrigation District and Modesto Irrigation District. Through this mechanism, the SFPUC may pre-deliver the Turlock Irrigation District's and Modesto Irrigation District's entitlements and credit the water bank so that at other times the SFPUC may retain water upstream while the Turlock Irrigation District and Modesto Irrigation District debit the water bank.

Table 6-1. Regional Water System Storage Capacity

Reservoir	Storage	
	Acre-Feet (AF)	**Billions of Gallons (BG)**
Up-Country[a]		
Hetch Hetchy	360,360	117.4
Lake Lloyd[b]	273,300	89.1
Lake Eleanor	27,100	8.8
Subtotal Up-Country	**660,760**	**215.3**
Local		
Calaveras (East Bay)[c]	96,800	31.5
San Antonio (East Bay)	50,500	16.5
Crystal Springs (Peninsula)[d]	69,300	22.6
San Andreas (Peninsula)	19,000	6.2
Pilarcitos (Peninsula)	3,100	1.0
Subtotal Local	**238,700**	**77.8**
Total Regional Water System[e]	**899,460**	**293.1**

a Three other regulating reservoirs are also part of the RWS: Early Intake, Priest, and Moccasin Reservoirs.

b Storage capacity shown includes flashboards, which are structures placed in a spillway to increase the capacity of a reservoir.

c Calaveras Reservoir was constructed with a storage capacity of 96,800 AF. Since December 2001, in response to safety concerns about the seismic stability of the dam and a directive from the Division of Safety of Dams (DSOD), the SFPUC held the maximum water level at approximately 37,800 AF (roughly 40% of its maximum capacity). The construction of a new replacement dam downstream was completed in 2019 to restore the dam's full storage capacity and the dam was continuing to be filled over the 2019/2020 winter season.

d Crystal Springs Reservoir has a maximum storage capacity of 22.6 BG (at 291.8 feet). Based on permit conditions, the reservoir is currently operated at 287.8 feet (4 feet below capacity).

e This includes 63,700 AF in dead storage (i.e., the volume in a reservoir below the lowest controllable level). In addition, the SFPUC may draw against a credit of up to 570,000 AF in storage in a water bank account in Don Pedro Reservoir, for total storage for planning purposes of 1,469,460 AF.

6.1.2 Individual Supply Guarantees

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

Burlingame's ISG is 5.23 MGD, or approximately 1,909 million gallons per year. Between 2016 and 2020, the Burlingame purchased between 59% and 67% of its ISG for use in the Burlingame service area (see Table 6-9).

6.1.3 2028 SFPUC Decisions (formerly 2018 SFPUC Decisions)

Information regarding the 2028 SFPUC Decisions (formerly 2018 SFPUC Decision) was provided by BAWSCA in coordination with SFPUC and is provided verbatim below.

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

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

Events since 2009 made it difficult for the SFPUC to conduct the necessary water supply planning and California Environmental Quality Act (CEQA) analysis required to make these three decisions before 2018. Therefore, in the 2018 Amended and Restated WSA, the decisions were deferred for 10 years to 2028.

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

6.2 Groundwater

☑ ***CWC § 10631***

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

(A) The current version of any groundwater sustainability plan or alternative adopted pursuant to Part 2.74 (commencing with Section 10720), any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management for basins underlying the urban water supplier's service area.

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

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

Historically, the City has not utilized groundwater as a drinking water source (i.e., as described above, the sole source of the City's drinking water has been wholesale water supplied by the SFPUC). However, in the 1990s the City did construct one groundwater supply well that is located near Washington Park (i.e., the "WP Well"), which has historically been used on occasion to irrigate portions of City-owned landscaping and parks. However, regular use of the well ceased in 2003. Currently, the WP Well is only used intermittently for de minimis non-potable demands (e.g., limited irrigation and wash water). The WP Well was not constructed for drinking water purposes and is not rated as a drinking water well. The City does not expect to utilize groundwater as a regular potable or non-potable water source in the future. Information related to the local groundwater basin is provided below.

6.2.1 Groundwater Basin Description

Burlingame overlies the southern portion of the approximately 40 square mile Westside Groundwater Basin (groundwater basin number 2-35; DWR, 2006; or Basin). The Basin is not adjudicated, nor has it been found by the Department of Water Resources (DWR) to be in a condition of overdraft. As part of the implementation of the Sustainable Groundwater Management Act (SGMA), the subbasin was ranked as a "very low priority"[15] basin under the 2014 California Statewide Groundwater Elevation Monitoring basin

[15] SGMA Basin Prioritization Dashboard, https://gis.water.ca.gov/app/bp-dashboard/final, accessed 18 Jan 2021.

prioritization process and maintained this ranking in the DWR's latest basin prioritization project effort in 2020 (DWR, 2020). The Basin is therefore not subject to the requirements of SGMA.

The Basin consists of unconsolidated colluvium that was deposited in a northwest trending trough in the underlying impervious bedrock. The approximate boundaries of the Basin are shown in Figure 6-2. The Basin is bounded by bedrock highs in Golden Gate Park to the North and at Coyote Point to the South (DWR Bulletin 118, Rogge, 2003; Yates, 2003a; DWR, 2006). The San Bruno Mountains and San Francisco Bay form the eastern boundary of the Basin while the Serra Fault[16] and the Pacific Ocean form the western boundary (Rogge, 2003; Yates, 2003a; DWR, 2006). Adjoining groundwater basins are the Lobos Basin to the North and the San Mateo Plain Subbasin to the South.

The Basin is composed of two main water-bearing units, the shallow, unconfined Colma aquifer and the deeper, confined Merced aquifer. Within the two major water bearing zones in the Basin, there are multiple smaller aquifer zones that are delineated vertically by different sand and clay layers within the Merced and Colma formations. The thickness and extent of these interbedded sand and clay layers vary spatially throughout the Basin as shown in Figure 6-3.

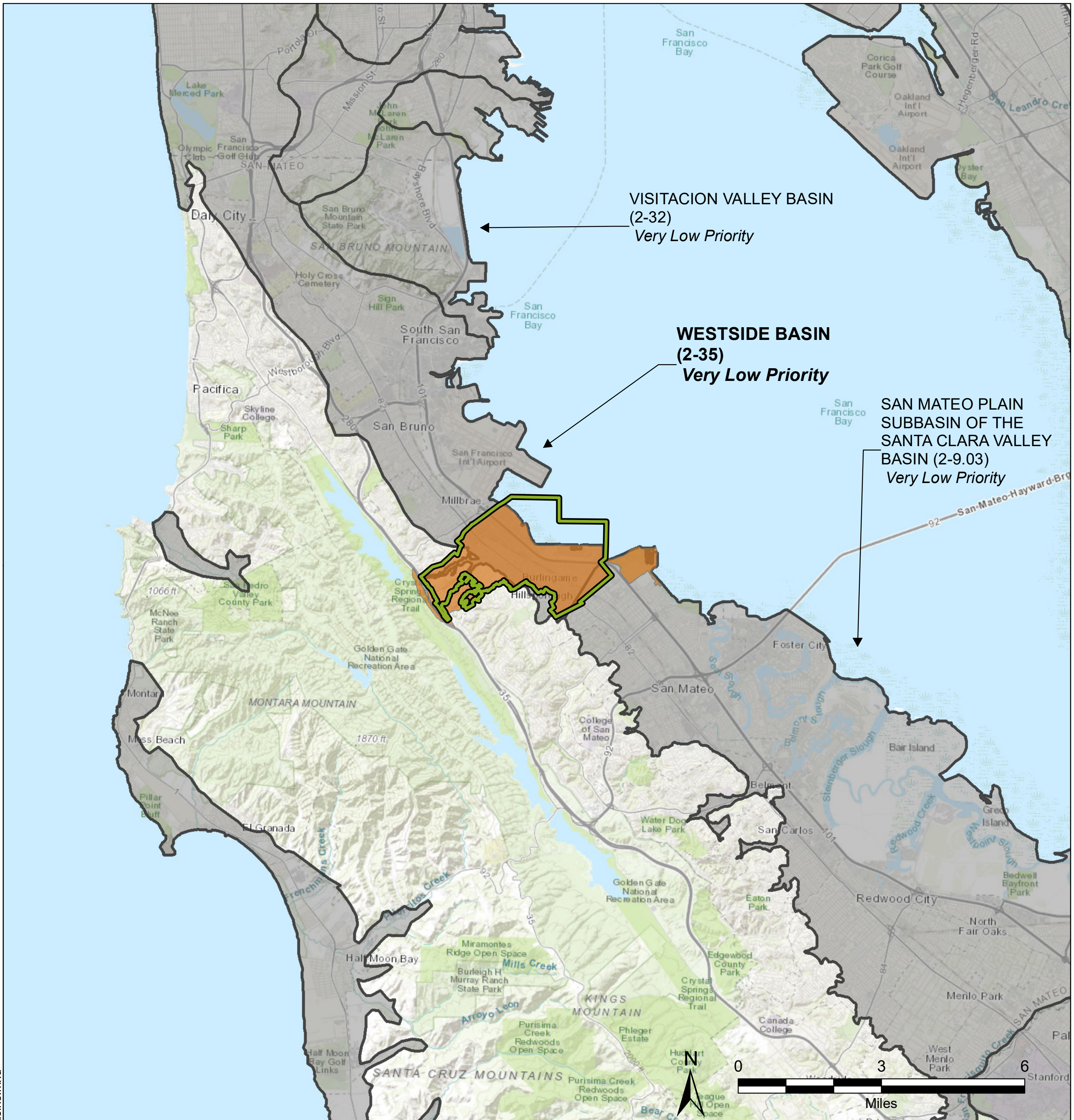
All of the municipal groundwater extraction wells in the Cities of San Bruno, South San Francisco, and Daly City are screened in the deeper, confined Merced aquifer where the water quality is better. The specific yield of wells in the Basin has been observed to be greater in the northern portions of the Basin than in the southern (SBMP, 2001; Yates, 2003a).

6.2.2 Groundwater Management

As stated above, the Basin is currently designated by the DWR as a "very low priority" basin and is exempt from complying with SGMA. Burlingame has not historically utilized groundwater as a significant water supply source or participated in management of the Basin. However, other entities that overly the Basin, such as the Cities of San Bruno and Daly City, rely on groundwater for a significant portion of their potable water supply and are actively involved in Basin management. The southern portion of the Basin is currently managed under the South Westside Basin Groundwater Management Plan.[17]

[16] The Serra Fault is a series of thrust faults parallel to the San Andreas Fault in the Coast Ranges (Rogge, 2003).

[17] South Westside Basin Groundwater Management Plan, dated July 2012, http://sfwater.org/Modules/ShowDocument.aspx?documentid=3104, accessed 18 March 2021.



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Legend

- DWR Bulletin 118 Groundwater Basin
- City of Burlingame Boundary
- City of Burlingame Water Service Area

Abbreviations

CASGEM = California Statewide Groundwater Elevation Monitoring Program

DWR = Department of Water Resources

Notes

1. All locations are approximate.
2. Priority rankings from CASGEM groundwater basin priortization, May 2020

Sources

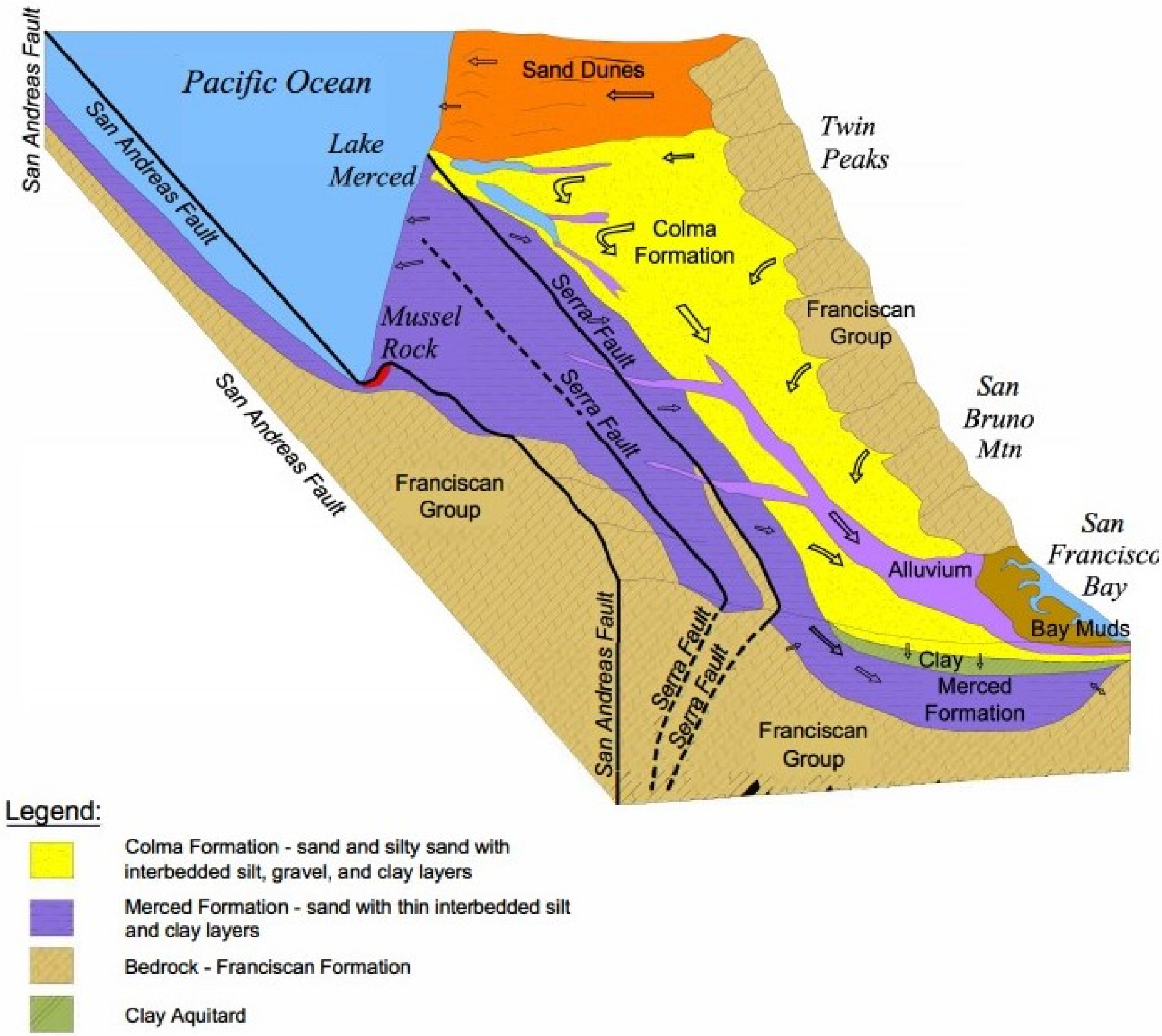
Topographic base map provided by ArcGIS Online

Groundwater Basins in the Vicinity of Burlingame Service Area

City of Burlingame
2020 Urban Water Management Plan
Burlingame, CA
September 2021
EKI C00059.00

eki environment & water

Figure 6-2



Notes
1. All locations are approximate.
2. This figure presents a conceptual model of the Westside Groundwater Basin showing the different geologic features within the Basin. The arrows show generalized groundwater flow directions within the Basin.

Sources
Rogge, 2003, *Dimensions of the Westside Groundwater Basin, San Francisco and San Mateo Counties, California*, Masters Thesis at San Francisco State University.

Conceptual Model of the Westside Groundwater Basin

City of Burlingame
2020 Urban Water Management Plan
Burlingame, CA
September 2021
EKI C00059.00

Figure 6-3

eki environment & water

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6.2.3 Historical Groundwater Use

As discussed above, the WP Well is only used intermittently for de minimis non-potable demands and the City has not historically used groundwater as a potable water source (see Table 6-2).

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

<table>
<tr><td>X</td><td colspan="6">Supplier does not pump groundwater.
The supplier will not complete the table below.</td></tr>
<tr><td></td><td colspan="6">All or part of the groundwater described below is desalinated.</td></tr>
<tr><td>Groundwater Type</td><td>Location or Basin Name</td><td>2016</td><td>2017</td><td>2018</td><td>2019</td><td>2020</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td colspan="2">TOTAL</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td colspan="7">NOTES:</td></tr>
</table>

6.2.4 Projected Future Groundwater Use

Burlingame purchases all of its potable water from the SFPUC RWS and there are no plans to use groundwater as a supplemental potable water supply source in the future because the source is unreliable and works intermittently. However, the City has used groundwater in the past on an intermittent basis to supply irrigation water during historical drought periods. The total demand from Washington Park that could be served by groundwater for irrigation is estimated to be approximately 0.025 MGD (EKI, 2011). This estimate is based on the summer irrigation demand estimates of Washington Park based on irrigation schedules provided by Burlingame's Parks and Recreation Department and monthly water use patterns for all City Parks provided by the City's water consumption reports (EKI, 2004).[18] According to production estimates of the WP Well and the available storage in the WP Well storage tank, the WP Well system has the capacity to meet these irrigation demands.[19] However, should the currently projected water supply available to the City materially change, the City may elect in the future to further evaluate the availability of groundwater as a potential source of supply.

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[18] For the purpose of this UWMP, the City has assumed that monthly water use trends in Washington Park are similar to those trends observed at all of the City Parks. Based on the fraction of total annual water use consumed at all City Parks during each month of the year, and the estimated July irrigation demand at Washington Park, water demands were extrapolated for the months of August through June. The sum of these monthly demand estimates is 0.025 MGD.

[19] The potential pumping volume is based on the maximum sustainable pumping rate of 100 gpm.

6.3 Surface Water

Water that is self-supplied to agencies from streams, lakes and reservoirs is considered a surface water supply. Although Burlingame's potable water supply is originally derived from surface water, it is categorized as "purchased" water since the water is obtained from the SFPUC RWS. Burlingame does not currently, nor does it plan to in the future, use self-supplied surface water as part of its water supply portfolio.

6.4 Stormwater

Burlingame does not currently, nor does it plan to in the future, use diverted stormwater as part of its water supply portfolio.

6.5 Wastewater and Recycled Water

☑ ***CWC § 10633***

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

Recycling water involves treating wastewater to an acceptable level such that it can be reused for irrigation, cooling, and other non-potable applications. A key benefit of water recycling is its potential to offset the use of potable supplies. The regulatory requirements for recycled water are defined in the California Code of Regulations, Title 22, Article 3 (Title 22) and vary for different uses (e.g. irrigation for food crops, landscape, and recreation).

Burlingame does not utilize recycled water, nor does it currently have plans to implement use of recycled water within its service area. As described further in Section 6.5.5, the use of recycled water to reduce potable water demands was examined as a potentially viable alternative in the City of Burlingame's Wastewater Treatment Facility Master Plan, Recycled Water Evaluation (City of Burlingame, 2016). The capital cost to implement the project is not feasible due to being extremely cost prohibitive, and as such, the City does not currently have plans to implement a recycled water facility and distribution system, and thus have not included it in future water supply projections. The sections below describe wastewater collection and treatment for the Burlingame service area.

6.5.1 Coordination

The City coordinates with adjacent municipalities and wastewater agencies in both the treatment and discharge of its wastewater. Burlingame's Wastewater Treatment Plant (WWTP) processes wastewater from the City, the unincorporated Burlingame Hills, and the Town of Hillsborough. The WWTP is located approximately at sea level along the San Francisco Bay. The WWTP contains facilities to recycle a portion of the treated wastewater for use within the WWTP; however for purposes of this UWMP, this is not being considered recycled water, as the recycled water is used only within the WWTP facilities.

Once treated, the City's effluent is sent through a joint transport system with the City of Millbrae, to South San Francisco. Prior to discharge into the San Francisco Bay through the South San Francisco Outfall, the Burlingame-Millbrae wastewater undergoes dechlorination along with the wastewater effluent from South San Francisco, Burlingame, and the City and County of San Francisco.

6.5.2 Wastewater Collection, Treatment, and Disposal

☑ ***CWC § 10633 (a)***

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

☑ ***CWC § 10633 (b)***

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

Burlingame operates and maintains the wastewater collection system that conveys wastewater from the users to the City's WWTP. The City system includes gravity pipelines, lift stations, and force mains. The volume of wastewater collected from the Burlingame service area in 2020 was approximately 939 million gallons (MG) see Table 6-3, which is lower than in previous years due to the impacts of the COVID-19 pandemic.

Burlingame's wastewater treatment process includes four treatment steps: (1) primary sedimentation, (2) secondary biological treatment, (3) sodium hypochlorite disinfection, and (4) contact time in a plug flow detention facility. Recycled wastewater undergoes an additional flocculation and clarification treatment step. Following treatment at the WWTP, the effluent is sent to South San Francisco through the Burlingame-Millbrae Central Bay Outfall system and discharged after dechlorination into a joint-use deep-water outfall in the San Francisco Bay (Nolte, 1982; Roman & Lougee, 2000). An influent equalization basin provides flow equalization during wet weather. Burlingame's WWTP is located within the City's service area and indicated in Table 6-4. The average dry weather flow of wastewater treated at the City's WWTP has remained fairly constant at approximately 3.0-3.5 million gallons per day (MGD). The permit provides for up to 5.5 MGD average dry weather flow.

The Burlingame WWTP uses approximately 0.11 MGD of treated wastewater for internal use within the plant. However, the treated wastewater does not meet Title 22, Article 3 recycled water requirements for non-potable uses outside of the WWTP and is discharged into the San Francisco Bay through the Burlingame-Millbrae Central Outfall system after use (Nolte, 1982). Internal reuse volume fluctuates depending on total influent flow; the internal reuse volume in 2020 was lower than previous years.

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

	There is no wastewater collection system. The supplier will not complete the table below.					
	Percentage of 2020 service area covered by wastewater collection system *(optional)*					
	Percentage of 2020 service area population covered by wastewater collection system *(optional)*					
Wastewater Collection			Recipient of Collected Wastewater			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated?	Volume of Wastewater Collected from UWMP Service Area 2020	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located Within UWMP Area?	Is WWTP Operation Contracted to a Third Party? *(optional)*
City of Burlingame	Metered	939	City of Burlingame	Burlingame Wastewater Treatment Plant	Yes	Yes
Total Wastewater Collected from Service Area in 2020:		939				

NOTES:
(a) The volume of wastewater collected within the service area is estimated based on flow metered at the WWTP headworks, which also includes flows from the Town of Hillsborough.
(b) The Burlingame WWTP is owned by the City of Burlingame and operated by a contractor to the City, Veolia Water North America.
(c) Volumes are in units of MG.

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

	No wastewater is treated or disposed of within the UWMP service area. The supplier will not complete the table below.										
Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number *(optional)*	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
City of Burlingame Wastewater Treatment Facility	002	Lower San Francisco Bay Marine Outfall	--	Bay or estuary outfall	Yes	Secondary, Disinfected - 23	939	915	17	0	0
						Total	939	915	17	0	0

NOTES:
(a) Treated effluent is sent to South San Francisco for additional treatment prior to discharge into the San Francisco Bay. The volume of recycled wastewater fluctuates year-to-year since it is dependent on the total influent flow.
(b) Approximately 16.5 MG of internal reuse water is used at the WWTP as process water.
(c) Volumes are in units of MG.

6.5.3 Current and Projected Uses of Recycled Water

☑ ***CWC § 10633 (c)***

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

☑ ***CWC § 10633 (d)***

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

☑ ***CWC § 10633 (e)***

The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years.

The City has not historically used recycled water outside of the WWTP and does not currently have the treatment capabilities to meet Title 22, Article 3 criteria for reuse of the recycled water for non-potable uses such as irrigation. Therefore, recycled water is not used and is not planned for use within the service area (Table 6-5).

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

X	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:										
Name of Supplier Operating the Recycled Water Distribution System:										
Supplemental Water Added in 2020 (volume)										
Source of 2020 Supplemental Water										
Beneficial Use Type	**Potential** Beneficial Uses of Recycled Water (Describe)	Amount of **Potential** Uses of Recycled Water (Quantity)	General Description of 2020 Uses	Level of Treatment	2020	2025	2030	2035	2040	2045
				Total:						
				2020 Internal Reuse	17					
NOTES: (a) Volumes are in units of MG.										

6.5.4 Comparison of Previously Projected Use and Actual Use

☑ ***CWC § 10633 (e)***

A description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision.

The 2015 UWMP projected no further use of recycled water beyond the internal reuse at the WWTP. The City does not currently use recycled water and therefore, has met the previous projections (Table 6-6).

Table 6-6. 2015 UWMP Recycled Water Use Projection Compared to 2020 Actual (DWR Table 6-5)

X	Recycled water was not used in 2015 nor projected for use in 2020. The supplier will not complete the table below.	
Beneficial Use Type	2015 Projection for 2020	2020 Actual Use
Total		
NOTES:		

6.5.5 Promoting Recycled Water Use

☑ ***CWC § 10633 (e-g)***

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

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

(g) A plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.

Burlingame is in the initial phases of recycled water planning and has not developed recycled water use projections for its service area (Table 6-7).

Potential future uses of recycled water include specific types of irrigation, impoundment, cooling and air conditioning, dust control, and flushing toilets and urinals.

Irrigation needs for Coyote Point and its golf course, hotel landscaping, and City parks and school fields could also potentially be met by recycled water, especially as these irrigation demands typically are greatest during the summer months, the time of greatest potable water demand (EKI, 2004). Construction water for dust control and moisture conditioning for compaction could also potentially be met with reclaimed water. If the recycled water is high enough quality (i.e., sufficiently low in minerals and salts), it could potentially be used as cooling water for industrial processes at local industries.

The use of recycled water to reduce potable water demands was examined as a potentially viable alternative in the City of Burlingame's Wastewater Treatment Facility Master Plan, Recycled Water Evaluation (City of Burlingame, 2016). If the project were implemented, it would likely occur in two phases. Phase 1 of the project would be as a demonstration project with an estimated peak day demand of 70,000 gallons per day (GPD); and phase 2 of the project would add an additional 280,000 GPD of peak day demand, for a total of 350,000 GPD peak day demand. The estimated average day demand of the potential recycled water users was estimated to be 126,000 GPD or approximately 46 MG per year. Due to high implementation costs and complexity of implementation, the project is not included in the water planning at this time. However the City would like to continue to evaluate its feasibility for future implementation if technology improves and costs come down.

Table 6-7. Methods to Expand Future Recycled Water Use (DWR Table 6-6)

X	Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.		
67	Provide page location of narrative in UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use (MG)
		Total	
NOTES:			

6.6 Desalinated Water Opportunities

☑ *CWC § 10631 (g) A plan shall be adopted in accordance with this chapter and shall do all of the following:*

Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.

Opportunities to develop desalinated water supplies from ocean water, brackish surface, and brackish groundwater are being investigated by the BAWSCA as part of Phase II of its Long Term Reliable Water Supply Strategy (see Section 7.1.4.2). According to BAWSCA, there are high costs and intensive permitting requirements associated with desalination. However, it does potentially provide a substantial yield given the limited options for generating significant new water supplies for the region. SFPUC is also exploring desalination as part of its Alternative Water Supply Planning Program (see Section 7.1.4.2)

Burlingame does not anticipate opportunities for development of desalinated water supplies within the planning horizon of this UWMP and this water supply is not being considered.

6.7 Water Exchanges and Transfers

☑ ***CWC § 10631 (c)*** *A plan shall be adopted in accordance with this chapter and shall do all of the following:*

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

6.7.1 Exchanges and Transfers

There are potential transfer and exchange opportunities within and outside of the SFPUC RWS. Burlingame does not presently anticipate the need for water right transfers during normal year conditions. However, should that condition change in the future, it is possible that the Burlingame could purchase water from another agency or entity either within or outside of the SFPUC RWS.

Within the SFPUC RWS, it is possible to transfer water entitlements and/or banked water among agencies. For example, the Water Shortage Allocation Plan adopted by all BAWSCA agencies and the SFPUC provides the basis for voluntary transfers of water among BAWSCA agencies during periods when mandatory rationing is in effect on the SFPUC RWS (see Section 7.1). Some BAWSCA agencies have the capacity to rely on groundwater or other sources during dry years and thus may be willing to transfer a portion of their wholesale water entitlement to other BAWSCA agencies in need of supply above their allocations.

Securing water from willing sellers outside the SFPUC RWS is a more complex process than transfers within the RWS, which requires both a contract with the seller agency and approval by the SFPUC. BAWSCA has the authority to plan for and acquire supplemental water supplies, and continues to evaluate the feasibility of water transfers as part of its implementation of the Long Term Reliable Water Supply Strategy (see Section 7.1.4.2).

6.7.2 Emergency Interties

As discussed in Section 3.4, metered interties exist between the Burlingame water system and the City of Millbrae and the Town of Hillsborough water systems. The City also has unmetered interties with the California Water Service Company along the southern portion of the distribution system.

6.8 Multiple Water Sources

☑ ***CWC § 10631 (b) (2)*** *A plan shall be adopted in accordance with this chapter that shall do all of the following:*

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

The City meets its entire water potable demand with wholesale water from the SFPUC RWS. WWTP internal reuse water and groundwater are used to meet small non-potable demands related to WWTP operations and irrigation, respectively.

6.9 Future Water Projects

☑ ***CWC § 10631*** *A plan shall be adopted in accordance with this chapter and shall do all of the following:*

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

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

This section lists the water supply projects that may be undertaken by both the wholesaler (i.e., SFPUC) and Burlingame.

6.9.1 SFPUC Water Supply Projects

Burlingame's wholesaler, SFPUC, has been implementing its Water System Improvement Plan (WSIP) since it was adopted in 2008. The WSIP includes several water supply projects to address the level of service Goals and Objective established in the WSIP and updated in February 2020. SFPUC has also developed an Alternative Water Supply Planning Program to explore other projects that would increase overall water supply resiliency. These programs and future water supply projects are described in Section 7.1.4.2.

6.9.2 Recycled Water

As discussed above, recycled water use was evaluated as part of the City's WWTP Master Plan (City of Burlingame, 2016). Burlingame is continuing to evaluate the feasibility of implementing this project, and thus are not including it in the City's long-term water supply at this point in time (Table 6-8).

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

<table>
<tr><td>X</td><td colspan="6">No expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Supplier will not complete the table below.</td></tr>
<tr><td></td><td colspan="6">Some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.</td></tr>
<tr><td></td><td colspan="6">Provide page location of narrative in the UWMP</td></tr>
<tr><td rowspan="2">Name of Future Projects or Programs</td><td colspan="2">Joint Project with other suppliers?</td><td rowspan="2">Description (if needed)</td><td rowspan="2">Planned Implementation Year</td><td rowspan="2">Planned for Use in Year Type</td><td rowspan="2">Expected Increase in Water Supply to Supplier</td></tr>
<tr><td>Y/N</td><td>If Yes, Supplier Name</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td colspan="7">NOTES:</td></tr>
</table>

6.10 Summary of Existing and Planned Sources of Water

☑ ***CWC § 10631 (b)*** *Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a).*

☑ ***CWC § 10631 (b) (4) (D)*** *A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.*

Burlingame's historical and current supply is presented in Table 6-9.

Burlingame purchases potable water from the SFPUC RWS to meet all of the potable water demands within the Burlingame service area. In FY 2019-2020, Burlingame purchased approximately 1,271 MG from the SFPUC RWS for use in the Burlingame service area.

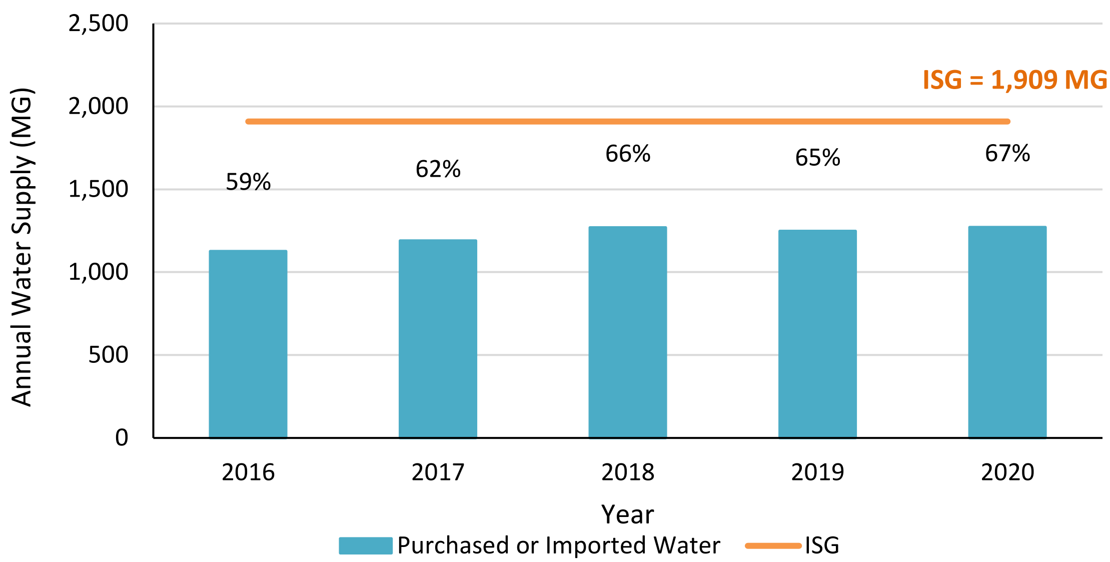
A limited amount of internal reuse water is used at the WWTP as process water and groundwater is used to meet a de minimis volume of non-potable demands.

Table 6-9. Water Supplies - Actual (DWR Table 6-8)

Water Supply	Additional Detail on Water Supply	Actual Volume					Water Quality	Total Right or Safe Yield *(optional)*
		2016	2017	2018	2019	2020		
Purchased or Imported Water	SFPUC RWS	1,126	1,191	1,269	1,249	1,271	Drinking Water	1,909
	Total	1,126	1,191	1,269	1,249	1,271		1,909

NOTES:
(a) Volumes are in units of MG.
(b) The annual water supply values for 2016 through 2020 are based on monthly wholesale water meter readings and prorated to align with the fiscal year. The values presented do not include water that was purchased from SFPUC and sold to another agency.
(c) The City of Burlingame has an ISG of 5.23 MGD, or approximately 1,909 MG per year.

Figure 6-4. Current and Historical Water Supply



Burlingame plans to continue to purchase wholesale water from the SFPUC RWS and does not anticipate developing additional long-term potable water supplies from other sources in the near future. Water supplies from the SFPUC RWS through 2045 are projected to be equivalent to Burlingame's ISG of 1,909 MG, which is Burlingame's contractual entitlement to SFPUC wholesale water, which survives in perpetuity. Burlingame's total water supply projections[20] are shown in Table 6-10 in five-year increments through 2045.

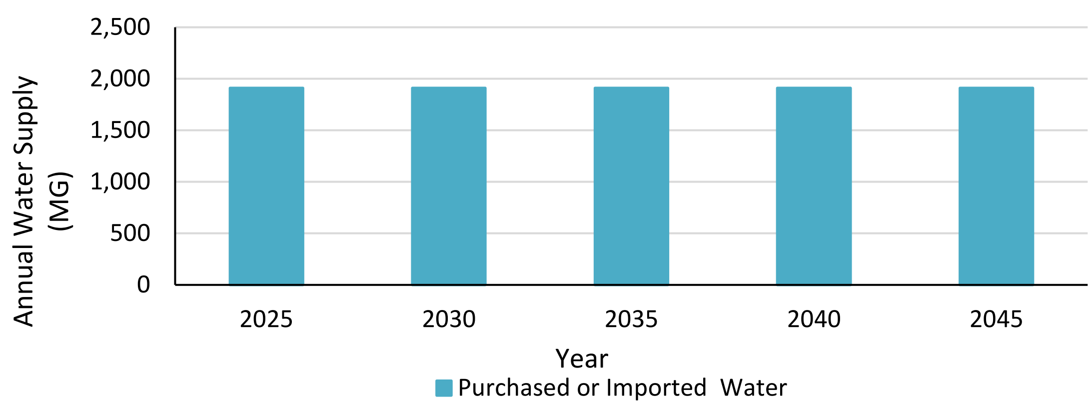
[20] Total water supply projections do not include WWTP internal reuse water and de minimis groundwater use.

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

Water Supply	Additional Detail on Water Supply	Projected Water Supply									
		2025		2030		2035		2040		2045	
		Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)
Purchased or Imported Water	SFPUC	1,909	--	1,909	--	1,909	--	1,909	--	1,909	--
	Total	1,909	--	1,909	--	1,909	--	1,909	--	1,909	--

NOTES:
(a) Water supply available to Burlingame during a normal year is assumed to be equal to Burlingame's ISG. Burlingame has an ISG of 5.23 MGD, or approximately 1,909 MG per year.
(b) Volumes are in units of MG.

Figure 6-5. Projected Water Supply



6.11 Special Conditions

☑ ***CWC § 10635(b)***

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

6.11.1 Climate Change Effects

Information regarding the impacts of climate change to the SFPUC RWS supply was provided by BAWSCA in coordination with SFPUC and is provided below:

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

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

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

Bay Area Integrated Regional Water Management Plan

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

Summary of BAIRWMP Climate Change Vulnerability Assessment

Vulnerability Areas	General Overview of Vulnerabilities
Water Demand	**Urban and Agricultural Water Demand** – Changes to hydrology in the Region as a result of climate change could lead to changes in total water demand and use patterns. Increased irrigation (outdoor landscape or agricultural) is anticipated to occur with temperature rise, increased evaporative losses due to warmer temperature, and a longer growing season. Water treatment and distribution systems are most vulnerable to increases in maximum day demand.

Vulnerability Areas	General Overview of Vulnerabilities
Water Supply	**Imported Water** – Imported water derived from the Sierra Nevada sources and Delta diversions provide 66 percent of the water resources available to the Region. Potential impacts on the availability of these sources resulting from climate change directly affect the amount of imported water supply delivered to the Region. **Regional Surface Water** – Although future projections suggest that small changes in total annual precipitation over the Region will not change much, there may be changes to when precipitation occurs with reductions in the spring and more intense rainfall in the winter. **Regional Groundwater** – Changes in local hydrology could affect natural recharge to the local groundwater aquifers and the quantity of groundwater that could be pumped sustainably over the long-term in some areas. Decreased inflow from more flashy or more intense runoff, increased evaporative losses and warmer and shorter winter seasons can alter natural recharge of groundwater. Salinity intrusion into coastal groundwater aquifers due to sea-level rise could interfere with local groundwater uses. Furthermore, additional reductions in imported water supplies would lead to less imported water available for managed recharge of local groundwater basins and potentially more groundwater pumping in lieu of imported water availability.
Water Quality	**Imported Water** – For sources derived from the Delta, sea-level rise could result in increases in chloride and bromide (a disinfection by-product (DBP) precursor that is also a component of sea water), potentially requiring changes in treatment for drinking water. Increased temperature could result in an increase in algal blooms, taste and odor events, and a general increase in DBP formation **Regional Surface Water** – Increased temperature could result in lower dissolved oxygen in streams and prolong thermocline stratification in lakes and reservoirs forming anoxic bottom conditions and algal blooms. Decrease in annual precipitation could result in higher concentrations of contaminants in streams during droughts or in association with flushing rain events. Increased wildfire risk and flashier or more intense storms could increase turbidity loads for water treatment. **Regional Groundwater** – Sea-level rise could result in increases in chlorides and bromide for some coastal groundwater basins in the Region. Water quality changes in imported water used for recharge could also impact groundwater quality.

Vulnerability Areas	General Overview of Vulnerabilities
Sea-Level Rise	Sea-level rise is additive to tidal range, storm surges, stream flows, and wind waves, which together will increase the potential for higher total water levels, overtopping, and erosion. Much of the bay shoreline is comprised of low-lying diked baylands which are already vulnerable to flooding. In addition to rising mean sea level, continued subsidence due to tectonic activity will increase the rate of relative sea-level rise. As sea-level rise increases, both the frequency and consequences of coastal storm events, and the cost of damage to the built and natural environment, will increase. Existing coastal armoring (including levees, breakwaters, and other structures) is likely to be insufficient to protect against projected sea-level rise. Crest elevations of structures will have to be raised or structures relocated to reduce hazards from higher total water levels and larger waves.
Flooding	Climate change projections are not sensitive enough to assess localized flooding, but the general expectation is that more intense storms would occur thereby leading to more frequent, longer and deeper flooding. Changes to precipitation regimes may increase flooding. Elevated Bay elevations due to sea-level rise will increase backwater effects exacerbating the effect of fluvial floods and storm drain backwater flooding.

Vulnerability Areas	General Overview of Vulnerabilities
Ecosystem and Habitat	Changes in the seasonal patterns of temperature, precipitation, and fire due to climate change can dramatically alter ecosystems that provide habitats for California's native species. These impacts can result in species loss, increased invasive species ranges, loss of ecosystem functions, and changes in vegetation growing ranges. Reduced rain and changes in the seasonal distribution of rainfall may alter timing of low flows in streams and rivers, which in turn would have consequences for aquatic ecosystems. Changes in rainfall patterns and air temperature may affect water temperatures, potentially affecting coldwater aquatic species. Bay Area ecosystems and habitat provide important ecosystem services, such as: carbon storage, enhanced water supply and quality, flood protection, food and fiber production. Climate change is expected to substantially change several of these services. The region provides substantial aquatic and habitat-related recreational opportunities, including: fishing, wildlife viewing, and wine industry tourism (a significant asset to the region) that may be at risk due to climate change effects.
Hydropower	Currently, several agencies in the Region produce or rely on hydropower produced outside of the Region for a portion of their power needs. As the hydropower is produced in the Sierra, there may be changes in the future in the timing and amount of energy produced due to changes in the timing and amount of runoff as a result of climate change. Some hydropower is also produced within the region and could also be affected by changes in the timing and amount of runoff.

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

6.11.2 Regulatory Conditions and Project Development

Emerging regulatory conditions (e.g., issues surrounding the Water Quality Control Plan for the San Francisco/Sacramento-San Joaquin Delta Estuary [Bay-Delta Plan Amendment]) may affect planned future projects and the characterization of future water supply availability and analysis. A detailed description of the potential impacts of Bay-Delta Plan Amendment implementation on RWS supply reliability is included in Section 7.1. Burlingame currently does not have any plans to develop new supply sources. If Burlingame does move forward with any plans to develop supply projects, emerging regulatory conditions will be considered, and the associated water supply reliability impacts will be assessed in future UWMP updates.

6.11.3 Other Locally Applicable Criteria

Other locally applicable criteria may affect characterization and availability of an identified water supply (e.g., changes in regional water transfer rules may alter the availability of a water supply that had historically been readily available). Reliability of the SFPUC RWS supply is further discussed in Section 7.1. Burlingame does not have any current plans to develop new supply sources. If Burlingame does move forward with any plans to develop supply projects, locally applicable criteria will be considered, and the associated water supply reliability impacts will be assessed in future UWMP updates.

6.12 Energy Consumption

☑ ***CWC § 10631.2***

(a) In addition to the requirements of Section 10631, an urban water management plan shall include any of the following information that the urban water supplier can readily obtain:
(1) An estimate of the amount of energy used to extract or divert water supplies.
(2) An estimate of the amount of energy used to convey water supplies to the water treatment plants or distribution systems.
(3) An estimate of the amount of energy used to treat water supplies.
(4) An estimate of the amount of energy used to distribute water supplies through its distribution systems.
(5) An estimate of the amount of energy used for treated water supplies in comparison to the amount used for nontreated water supplies.
(6) An estimate of the amount of energy used to place water into or withdraw from storage.
(7) Any other energy-related information the urban water supplier deems appropriate.
(b) The department shall include in its guidance for the preparation of urban water management plans a methodology for the voluntary calculation or estimation of the energy intensity of urban water systems. The department may consider studies and calculations conducted by the Public Utilities Commission in developing the methodology.
(c) The Legislature finds and declares that energy use is only one factor in water supply planning and shall not be considered independently of other factors.

Burlingame used the “Total Utility Approach” defined by DWR in the UWMP Guidebook 2020 to report water-related energy consumption. Fiscal year 2019-2020 is selected as the one-year reporting period, and utility bills for the whole year are used as the source for energy consumption data. It is estimated that a total of approximately 460,767 kilowatt-hour (kWh) of energy was consumed for operation of water facilities in Burlingame’s water system in FY 2019-2020. As the total volume of water entering the system was 1,271 MG, the energy intensity was calculated to be 362.5 kWh/MG (Table 6-11).

The City is a customer of Peninsula Clean Energy, a community choice aggregation program for San Mateo County. Additionally, the City has enrolled in their ECO100 program where 100% of the electricity used by city facilities is from renewable energy.

Table 6-11. Recommended Energy Intensity – Total Utility Approach (DWR Table O-1B)

Urban Water Supplier:	*City of Burlingame*

Water Delivery Product

Retail Potable Deliveries

Enter Start Date for Reporting Period	7/1/2019	Urban Water Supplier Operational Control		
End Date	6/30/2020			
Is upstream embedded in the values reported?	No	Sum of All Water Management Processes	Non-Consequential Hydropower	
Water Volume Units Used	MG	Total Utility	Hydropower	Net Utility
Volume of Water Entering Process (volume unit)		*1271*	*0*	*1271*
Energy Consumed (kWh)		*460767*	*0*	*460767*
Energy Intensity (kWh/volume)		*362.5*	*0.0*	*362.5*

Quantity of Self-Generated Renewable Energy

0 kWh

Data Quality

Metered Data

Data Quality Narrative:

Volume of water is from the SFPUC meters and prorated for FY 2019-2020. Energy usage is for water facilities and is from the City's energy bills.

Narrative:

Burlingame utilizes five pump stations to convey water to supplement demands and to fill storage tanks.

7. WATER SUPPLY RELIABILITY

☑ ***CWC § 10620 (f)***

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

☑ ***CWC § 10630.5***

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

As described in Chapter 6, all of the City of Burlingame (City or Burlingame)'s water supply is purchased from the San Francisco Public Utilities Commission (SFPUC) Regional Water System (RWS). This section describes the constraints on that potable water supply (also referred to by SFPUC as wholesale water), as well as the management strategies that Burlingame and other affected agencies have employed or will employ to address these constraints. This section also provides an estimate of the supply volumes available to Burlingame and the corresponding supply and demand reliability assessments in normal years, single dry years, and multiple dry year periods, as well as a drought risk assessment (DRA) for the next five years.

The de minimis amount of groundwater and Wastewater Treatment Plant internal reuse water that the City uses are assumed to be 100% reliable and not subject to the reliability issues discussed herein.

7.1 Water Service Reliability Assessment

The following sections describe the City's water service reliability assessment, which present the City's expected water service reliability for a normal year, single dry year, and five consecutive dry years projections in five-year increments between 2025 and 2040.

7.1.1 Service Reliability – Constraints on Water Sources

As discussed in Chapter 6, the City purchases all its potable water supply from the SFPUC RWS. Several potential constraints have been identified on future supply availability, including the Bay-Delta Plan Amendment, impaired water quality, and climate change. These constraints, along with associated management strategies are summarized in the following sections.

7.1.1.1 Regional Water System Supply Constraints

☑ ***CWC § 10631 (h)*** *A plan shall be adopted in accordance with this chapter and shall do all of the following:*

An urban water supplier that relies upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (f). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (f).

Detailed information is provided below regarding factors that impact the SFPUC RWS supply reliability. The source for the information is the common language provided by the SFPUC and the Bay Area Water Supply and Conservation Agency (BAWSCA) (see Appendix E and Appendix F).

Level of Service Goals

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

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

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

In 2008, the SFPUC adopted Level of Service (LOS) Goals and Objectives in conjunction with the adoption of WSIP. The SFPUC updated the LOS Goals and Objectives in February 2020. The SFPUC's LOS Goals and Objectives related to water supply are:

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

Bay-Delta Plan Impacts

Based on information provided by SFPUC and BAWSCA (Appendix E and Appendix F) the adoption of the 2018 Bay-Delta Plan Amendment is anticipated to impact the reliability of the RWS supplies in the future. The information in gray font below was provided by BAWSCA in coordination with SFPUC and is provided below.

In December 2018, the State Water Resources Control Board (SWRCB) adopted amendments to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan Amendment) to establish water quality objectives to maintain the health of the Bay-Delta ecosystem. The SWRCB is required by law to regularly review this plan. The adopted Bay-Delta Plan Amendment was developed with the stated goal of increasing salmonid populations in three San Joaquin River tributaries (the Stanislaus, Merced, and Tuolumne Rivers) and the Bay-Delta. The Bay-Delta Plan Amendment requires the release of 30-50% of the "unimpaired flow"[21] on the three tributaries from February through June in every year type. In SFPUC modeling of the new flow standard, it is assumed that the required release is 40% of unimpaired flow.

If the Bay-Delta Plan Amendment is implemented, the SFPUC will be able to meet the projected water demands presented in this Urban Water Management Plan (UWMP) in normal years but would experience supply shortages in single dry years or multiple dry years. Implementation of the Bay-Delta Plan Amendment will require rationing in all single dry years and multiple dry years. The SFPUC has initiated an Alternative Water Supply Planning Program (AWSP) to ensure that San Francisco can meet its Retail and Wholesale Customer water needs, address projected dry years shortages, and limit rationing to a maximum 20 percent system-wide in accordance with adopted SFPUC policies. This program is in early planning stages and is intended to meet future water supply challenges and vulnerabilities such as

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

environmental flow needs and other regulatory changes; earthquakes, disasters, and emergencies; increases in population and employment; and climate change. As the region faces future challenges – both known and unknown – the SFPUC is considering this suite of diverse non-traditional supplies and leveraging regional partnerships to meet Retail and Wholesale Customer needs through 2045.

The SWRCB has stated that it intends to implement the Bay-Delta Plan Amendment on the Tuolumne River by the year 2022, assuming all required approvals are obtained by that time. But implementation of the Plan Amendment is uncertain for multiple reasons.

First, since adoption of the Bay-Delta Plan Amendment, over a dozen lawsuits have been filed in both state and federal courts, challenging the SWRCB's adoption of the Bay-Delta Plan Amendment, including a legal challenge filed by the federal government, at the request of the U.S. Department of Interior, Bureau of Reclamation. This litigation is in the early stages and there have been no dispositive court rulings as of this date.

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

Third, in recognition of the obstacles to implementation of the Bay-Delta Plan Amendment, the SWRCB Resolution No. 2018-0059 adopting the Bay-Delta Plan Amendment directed staff to help complete a "Delta watershed-wide agreement, including potential flow measures for the Tuolumne River" by March 1, 2019, and to incorporate such agreements as an "alternative" for a future amendment to the Bay-Delta Plan to be presented to the SWRCB "as early as possible after December 1, 2019." In accordance with the SWRCB's instruction, on March 1, 2019, SFPUC, in partnership with other key stakeholders, submitted a proposed project description for the Tuolumne River that could be the basis for a voluntary substitute agreement with the SWRCB ("March 1st Proposed Voluntary Agreement"). On March 26, 2019, the Commission adopted Resolution No. 19-0057 to support the SFPUC's participation in the Voluntary Agreement negotiation process. To date, those negotiations are ongoing under the California Natural Resources Agency and the leadership of the Newsom administration.[22]

__Drought Allocation Methodology__

Given the above, as shown in Appendix F, the SFPUC has provided all of the Wholesale Customers with estimates of the RWS reliability in all year types though 2045. The Tier One Plan describes the method for

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

allocating RWS water between Retail and Wholesale Customers during system-wide shortages of 20% or less. The Tier Two Plan allocates the collective Wholesale Customer share from the Tier One Plan among each of SFPUC's 26 Wholesale Customers. For the purposes of 2020 UWMP development, BAWSCA provided a revised methodology to allocate RWS supplies during projected future single dry and multiple dry years in the instance where the supply shortfalls are greater than 20%. These drought allocation methodologies are further described below.

For the purposes of 2020 UWMP development only, SFPUC and BAWSCA have provided revised methodologies to allocate RWS supplies during projected future single dry and multiple dry years in instances where the projected supply shortfalls are greater than 20 percent. SFPUC assumed that Tier One allocations for system-wide shortfalls of 16 percent to 20 percent would apply for shortfalls greater than 20 percent. BAWSCA provided a revised methodology to allocate RWS supplies to the Wholesale Agencies. The inclusion of these revised methodologies, which serve as the basis for UWMP supply reliability analyses, does not imply an agreement by BAWSCA member agencies as to the exact allocation methodologies.

The Tier One and Tier Two Plans and the drought allocation methodologies used in the 2020 UWMP for shortfalls of greater than 20 percent are further described below. The information in gray font below was provided by BAWSCA in coordination with SFPUC and is provided verbatim below.

Tier One Drought Allocations

In July 2009, San Francisco and its Wholesale Customers in Alameda County, Santa Clara County, and San Mateo County (Wholesale Customers) adopted the Water Supply Agreement (WSA), which includes a Water Shortage Allocation Plan (WSAP) that describes the method for allocating water from the RWS between Retail and Wholesale Customers during system-wide shortages of 20 percent or less. The WSAP, also known as the Tier One Plan, was amended in the 2018 Amended and Restated WSA.

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

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

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

As amended in 2018, the Tier One Plan requires Retail Customers to conserve a minimum of 5 percent during droughts. If Retail Customer demands are lower than the Retail Customer allocation (resulting in a "positive allocation" to Retail[23]) then the excess percentage would be re-allocated to the Wholesale Customers' share. The additional water conserved by Retail Customers up to the minimum 5 percent level is deemed to remain in storage for allocation in future successive dry years.

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

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

As discussed above, the Tier One Plan only applies to system-wide shortages of 20 percent or less, and there is currently no methodology for sharing available water between SFPUC and Wholesale Customers for system-wide shortages of greater than 20 percent. As discussed below, the WSAP specifies that SFPUC and the Wholesale agencies "will meet and discuss how to implement incremental reductions above the 20% reduction" before making a final determination of allocations above the 20% reduction. For the purposes of the 2020 UWMP supply reliability analysis, SFPUC and BAWSCA assumed that Tier One allocations for system-wide shortfalls of 16 percent to 20 percent would apply for all shortfalls greater than 20 percent. The analysis included herein does not in any way imply an agreement by BAWSCA member agencies with the assumed application of the Tier One allocations by SFPUC and BAWSCA for shortages of greater than 20 percent.

Tier Two Drought Allocations

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

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

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

[23] See Water Supply Agreement, Water Shortage Allocation Plan (Attachment H), Section 2.1.

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

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

Per WSA Section 3.11, the Tier One and Tier Two Plans will be used to allocate water from the Regional Water System between Retail and Wholesale Customers during system-wide shortages of 20% or less. For Regional Water System shortages in excess of 20%, San Francisco shall (a) follow the Tier 1 Shortage Plan allocations up to the 20% reduction, (b) meet and discuss how to implement incremental reductions above 20% with the Wholesale Customers, and (c) make a final determination of allocations above the 20% reduction. After the SFPUC has made the final allocation decision, the Wholesale Customers shall be free to challenge the allocation on any applicable legal or equitable basis. For purposes of the 2020 UWMPs, for San Francisco Regional Water System (RWS) shortages in excess of 20%, the allocations among the Wholesale Customers is assumed to be equivalent among them and to equal the drought cutback to Wholesale Customer by the SFPUC.

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

Revised Drought Allocation Plan

As detailed by BAWSCA in multiple memos and workshops (Appendix F), both the Tier One and Tier Two Plans were not designed for RWS shortages greater than 20%. In a memorandum dated April 1, 2021, BAWSCA provided a refined methodology to allocate RWS supplies during projected future single dry and multiple dry years in the instance where the supply shortfalls are greater than 20%. The revised methodology developed by BAWSCA allocates the wholesale RWS supplies as follows:

1. When the average Wholesale Customers' RWS shortages are 10 percent or less, an equal percent reduction will be applied across all agencies. This is consistent with the existing Tier Two requirement of a minimum 10 percent cutback in any Tier Two application scenario.
2. When average Wholesale Customers' shortages are between 10 and 20 percent, the Tier Two Plan will be applied.
3. When the average Wholesale Customers' RWS shortages are greater than 20 percent, an equal percent reduction will be applied across all agencies.

The associated allocations based on the updated BAWSCA methodology are included as Appendix F. While this allocation methodology has been used herein, we note that, per its memoranda dated February 18, 2021:

> "BAWSCA recognizes that this is not an ideal situation or method for allocation of available drought supplies. In the event of actual RWS shortages greater than 20 percent, the Member Agencies would have the opportunity to negotiate and agree upon a more nuanced and equitable

> approach. Such an approach would likely consider basic health and safety needs, the water needs to support critical institutions such as hospitals, and minimizing economic impacts on individual communities and the region."

As such, this allocation method is only intended to serve as the preliminary basis for the 2020 UWMP supply reliability analysis. The analysis provided herein does not in any way imply an agreement by BAWSCA member agencies as to the exact allocation methodology (see Section 7.1.4.2). BAWSCA member agencies are in discussions about jointly developing an allocation method that would consider additional equity factors in the event that SFPUC is not able to deliver its contractual supply volume and cutbacks to the RWS supply exceed 20 percent.

7.1.1.2 Recycled Water Supply Availability

As documented in Chapter 6, the City does not use recycled water and do not have plans to implement any recycled water projects.

7.1.1.3 Water Quality

☑ ***CWC § 10634***

The plan shall include information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments as described in subdivision (a) of Section 10631, and the manner in which water quality affects water management strategies and supply reliability.

Impaired water quality also has the potential to affect water supply reliability. As discussed in Chapter 6, the majority of the water supply to the SFPUC RWS is from the Hetch Hetchy Reservoir in the Sierra Nevada Mountains. The Hetch Hetchy Reservoir is considered a very high-quality water source due to low total dissolved solid (TDS) concentrations and other factors. Additional water supplies from the Alameda and Peninsula sources come from areas with restricted access to protect the source water quality.

The SFPUC's Water Quality Division (WQD) regularly collects and tests water samples from reservoirs and designated sampling points throughout the RWS to ensure that the SFPUC's water meets or exceeds federal and state drinking water standards. In 2019, the WQD conducted more than 53,650 drinking water tests in the sources and transmission systems. This is in addition to the extensive treatment process control monitoring performed by the SFPUC's certified operators and online instruments. The SFPUC also has online instruments providing continuous water quality monitoring at numerous locations.

Additionally, Burlingame collects water quality samples and monitors water quality within its own distribution system. A copy of the City's most recent Water Quality Report, which contains water quality sampling data from 2019, is included as Appendix G. As can be seen in Appendix G, all of the analyzed constituents were detected at concentrations below the Maximum Contaminant Level.

The results of Burlingame's and SFPUC's water quality assessments show that SFPUC RWS watersheds have very low levels of contaminants, and that those contaminants that are found at low levels are associated with wildlife and, to a limited extent, human recreation. For the purposes of this UWMP, it is anticipated that this high-quality potable water source will continue to be available to Burlingame through the planning horizon ending in the year 2045. Water quality is not expected to impact the reliability of Burlingame's supplies.

7.1.1.4 Climate Change

☑ ***CWC § 10631 (b) (1)***

…For each source of water supply, consider any information pertinent to the reliability analysis conducted pursuant to Section 10635, including changes in supply due to climate change.

Section 6.11.1 provides a summary of the assessments of the applicable climate change on supplies that SFPUC has previously performed and those planned for the near term. The anticipated effects of climate change have been directly factored into Burlingame's assessment of its supply reliability. Burlingame is actively working with SFPUC and BAWSCA to further quantify and consider future climate change impacts as part of its ongoing supply and operations planning.

7.1.2 Service Reliability – Year Type Characterization

☑ ***CWC § 10631 (b)***

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

☑ ***CWC § 10631 (b)(1)***

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

☑ ***CWC § 10635 (a)***

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

Per the UWMP Guidebook 2020, the water service reliability assessment includes three unique year types:

- A normal hydrologic year represents the water supplies available under normal conditions, this could be an averaged range of years or a single representative year,
- A single dry year represents the lowest available water supply, and
- A five-consecutive year drought represents the driest five-year period in the historical record.

Identification of dry year periods consistent with the UWMP Guidebook 2020 methodology is provided in the language and supply projections provided by BAWSCA and the SFPUC in Appendix E and Appendix F and as presented in Table 7-1 and Table 7-2. The data and methods used to develop these dry year supply availabilities are described in the sections, below.

Table 7-1. Basis of Water Year Data (Reliability Assessment) (DWR Table 7-1)

<table>
<tr><th rowspan="4">Year Type</th><th rowspan="4">Base Year</th><th colspan="2">Available Supplies if
Year Type Repeats</th></tr>
<tr><td>X</td><td>Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP.
Location: Appendix F and Table 7-2</td></tr>
<tr><td></td><td>Quantification of available supplies is provided in this table as either volume only, percent only, or both.</td></tr>
<tr><th>Volume Available</th><th>% of Average Supply</th></tr>
<tr><td>Average Year</td><td></td><td></td><td>100%</td></tr>
<tr><td>Single-Dry Year</td><td></td><td></td><td></td></tr>
<tr><td>Consecutive Dry Years 1st Year</td><td></td><td></td><td></td></tr>
<tr><td>Consecutive Dry Years 2nd Year</td><td></td><td></td><td></td></tr>
<tr><td>Consecutive Dry Years 3rd Year</td><td></td><td></td><td></td></tr>
<tr><td>Consecutive Dry Years 4th Year</td><td></td><td></td><td></td></tr>
<tr><td>Consecutive Dry Years 5th Year</td><td></td><td></td><td></td></tr>
<tr><td colspan="4">NOTES:
(a) SFPUC provided this table to its wholesale customers under four scenarios. A description of the scenarios and corresponding tables can be found in Appendix F.</td></tr>
</table>

7.1.2.1 SFPUC Supply Modeled RWS Dry Year Supply Availability

As described in SFPUC's 2020 UWMP (SFPUC, 2021), SFPUC used the Hetch Hetchy and Local Simulation Model (HHLSM) to estimate SFPUC RWS supply availability for water service reliability assessment and the drought risk assessment (DRA; Section 7.2). HHLSM simulates supplies over a historical record of hydrology from 1920 through 2017 with a representation of current and planned SFPUC RWS infrastructure and operations.

Water supply shortfalls presented by SFPUC in Appendix F were estimated using SFPUC's design drought methodology. The SFPUC uses a hypothetical 8.5-year design drought that is more severe than what the RWS has historically experienced as the basis for planning and modeling of future scenarios. The design drought consists of the 1987-92 drought, followed by an additional 2.5 years of dry conditions from the hydrologic record that include the 1976-77 drought. The five-consecutive-year dry sequence used for the UWMP represents years 2 through 6 of the design drought. However, the modeling approach assumes water supply rationing each year that is designed to provide sufficient carry-over water in SFPUC reservoirs to continue delivering water, although at reduced levels, during each year of the five-consecutive year drought and the remaining years of the design drought (SFPUC, 2021).

Because of the uncertainty surrounding implementation of the Bay-Delta Plan Amendment, the SFPUC conducted water service reliability assessment that includes: (1) a scenario in which the Bay-Delta Plan Amendment is fully implemented in 2023, and (2) a scenario that considers the SFPUC system's current situation without the Bay-Delta Plan Amendment. The two scenarios provide a bookend for the possible future scenarios regarding RWS supplies.

The SFPUC decided to present the water reliability analysis with full implementation of the Bay-Delta Plan Amendment in the SFPUC 2020 UWMP Submittal Tables and provided the following rationale for that decision:

> "The adoption of the Bay-Delta Plan Amendment may significantly impact the supply available from the RWS. SFPUC recognizes that the Bay-Delta Plan Amendment has been adopted and that, given that it is now state law, we must plan for a future in which it is fully implemented. SFPUC also acknowledges that the plan is not self-implementing and therefore does not automatically go into effect. SFPUC is currently pursuing a voluntary agreement as well as a lawsuit which would limit implementation of the Plan. With both of these processes occurring on an unknown timeline, SFPUC does not know at this time when the Bay-Delta Plan Amendment is likely to go into effect. As a result, it makes sense to conduct future supply modeling for a scenario that doesn't include implementation of the Bay-Delta Plan Amendment, as that represents a potential supply reliability scenario.
>
> Because of the uncertainty surrounding implementation of the Bay-Delta Plan Amendment, the SFPUC conducted water service reliability assessment that includes: (1) a scenario in which the Bay-Delta Plan Amendment is fully implemented in 2023, and (2) a scenario that considers the SFPUC system's current situation without the Bay-Delta Plan Amendment. The two scenarios provide a bookend for the possible future scenarios regarding RWS supplies. The standardized tables associated with the SFPUC's UWMP contain the future scenario that assumes implementation of the Bay-Delta Plan Amendment starting in 2023.
>
> Although the SWRCB has stated it intends to implement the Bay-Delta Plan Amendment on the Tuolumne River by the year 2022, given the current level of uncertainty, it is assumed for the purposes of the SFPUC's draft UWMP that the Bay-Delta Plan Amendment will be fully implemented starting in 2023."

As shown in Appendix F, SFPUC also provided results for each of the modeling scenarios described above assuming demands on the RWS equal to both: (1) the total of projected retail demands and projected Wholesale Customer purchases, and (2) a constant water demand of 265 MGD from the SFPUC watersheds for retail and Wholesale Customers, consistent with SFPUC's contractual obligation. According to the SFPUC, the modeling based on a demand of 265 MGD was used to "facilitate planning that supports meeting this Level of Service goal and their contractual obligations." Supply modeling results presented in the text of the SFPUC's 2020 UWMP reflect an input of projected retail and Wholesale demands on the RWS.

Consistent with SFPUC's approach and guidance from SFPUC and BAWSCA, the City's UWMP presents results for the water service reliability assessment using projected demands on the RWS for supply scenario with full implementation of the Bay-Delta Plan Amendment in 2023.

SFPUC modeling results for the with Bay-Delta Plan Amendment scenario showing the total RWS supply available to Wholesale Customers during the characteristic year types can be found in Tables 3a-3g of the SFPUC letter dated March 30, 2021. These results show total Wholesale RWS supply shortfalls ranging from 36 percent to 54 percent of projected purchases during dry years after 2023.

For comparison purposes, results for the scenario without the Bay-Delta Plan Amendment can be found in Tables 4a-4g of the same SFPUC letter. These results indicated that the SFPUC would be able to meet 100 percent of Wholesale projected purchases during all year types except during the fourth and fifth consecutive dry years for base year 2045 when 15 percent Wholesale supply shortages are projected.

7.1.2.2 Burlingame's Year-Type Characterization

As discussed in Section 6.1.2, in accordance with the SFPUC's perpetual obligation to the City's Supply Assurance, the City has an ISG of 5.23 MGD, or 1,909 million gallons (MG) per year. SFPUC is obligated to provide the City with up to 100 percent of the City's ISG during normal years.

Using the SFPUC modeling results presented in the of the SFPUC letter dated March 30, 2021, BAWSCA provided single and five-consecutive dry-year allocations for each agency based on the methodology described in Section 7.1.1.1. As discussed therein, for the purposes for the 2020 UWMP supply reliability analysis only, Wholesale Agency drought allocations assume an equal percent reduction across all agencies when the average Wholesale Customers' RWS shortages are greater than 20 percent.

These percent reductions for the scenario that assumes the implementation of the Bay-Delta Plan Amendment in 2023 are included in Table E of the BAWSCA updated drought allocation memorandum dated April 1, 2021 (Appendix F), which are reproduced for Burlingame in Table 7-2, below, for base year 2025 through 2040. The percent reductions shown in Table 7-2 are applied to Burlingame's projected potable demands listed in Table 4-8 for each respective base year to calculate the projected dry-year RWS supplies shown in Table 7-4 and Table 7-5.

Table 7-2. Burlingame's SFPUC RWS Supply Availability During Normal and Dry Years for Base Years 2025 through 2040 (Responds to DWR Table 7-1)

Base Year	Normal Year	Single Dry Year	Multiple Dry Years				
			Year 1	Year 2	Year 3	Year 4	Year 5
2025	100%	64%	64%	55%	55%	55%	55%
2030	100%	64%	64%	55%	55%	55%	55%
2035	100%	64%	64%	54%	54%	54%	50%
2040	100%	63%	63%	54%	54%	48%	48%
2045	--	--	--	--	--	--	--

NOTES:
(a) Normal-year water supply availability is presented in terms of percentage of Burlingame's ISG (5.23 MGD).
(b) Dry-year water supply availability is presented in terms of percentage of projected RWS demands for each base year (Table 4-8) consistent the revised BAWSCA Drought Methodology that assumes equal percent cutbacks across all Wholesale Agencies.
(c) Results reflect scenario with Bay-Delta Plan Amendment implemented in 2023 and the use projected RWS purchases.

7.1.3 Service Reliability – Supply and Demand Comparison

☑ ***CWC § 10635 (a)***

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

The following sections compare the City's projected water demands, described in Chapter 4, with the City's projected water supply availability during normal, single dry, and multiple dry years to assess the reliability of the City's water supplies.

7.1.3.1 Water Service Reliability - Normal Year

☑ ***CWC § 10631 (b)***

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

☑ ***CWC § 10631 (b)(1)***

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

☑ ***CWC § 10635 (a)***

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

Table 7-2 shows the projected supply and demand totals for a normal year. The supply and demand totals are consistent with those in Table 6-10 and Table 4-8, respectively. Burlingame is expected to have adequate water supplies during normal years to meet its projected demands through 2045.

Table 7-3. Normal Year Supply and Demand Comparison (DWR Table 7-2)

	2025	2030	2035	2040	2045 (*opt*)
Supply totals *From DWR Table 6-9*	1,909	1,909	1,909	1,909	--
Demand totals *From DWR Table 4-3*	1,533	1,571	1,617	1,668	--
Difference	376	338	292	241	--
NOTES: (a) Volumes are in units of MG. To convert from MG to MGD, divide by 365.					

7.1.3.2 Water Supply – Single Dry Year

The reliability of the SFPUC RWS supply is anticipated to vary greatly in the future. As described above and detailed in Appendix F, Burlingame has relied on the supply reliability estimates and the drought allocation structure provided by SFPUC and BAWSCA to estimate available RWS supplies in dry years from 2025 through 2040. Table 7-4 shows the projected supply and demand totals for the single dry year.

Table 7-4. Single Dry Year Supply and Demand Comparison (DWR Table 7-3)

	2025	2030	2035	2040	2045 (*opt*)
Supply totals	981	1,005	1,035	1,051	--
Demand totals	1,533	1,571	1,617	1,668	--
Difference	(552)	(566)	(582)	(617)	--
NOTES: (a) Volumes are in units of MG. To convert from MG to MGD, divide by 365.					

7.1.4 Water Supply - Five Consecutive Dry Years

Based on the supply reliability estimates and allocation structure provided by SFPUC and BAWSCA, Table 7-5 shows the City's projected supply and demand totals for multiple dry year periods extending five years.

Table 7-5. Multiple Dry Years Supply and Demand Comparison (DWR Table 7-4)

		2025	2030	2035	2040	2045 (*opt*)
First year	Supply totals	981	1,005	1,035	1,051	--
	Demand totals	1,533	1,571	1,617	1,668	--
	Difference	(552)	(566)	(582)	(617)	--
Second year	Supply totals	843	864	873	901	--
	Demand totals	1,533	1,571	1,617	1,668	--
	Difference	(690)	(707)	(744)	(767)	--
Third year	Supply totals	843	864	873	901	--
	Demand totals	1,533	1,571	1,617	1,668	--
	Difference	(690)	(707)	(744)	(767)	--
Fourth year	Supply totals	843	864	873	801	--
	Demand totals	1,533	1,571	1,617	1,668	--
	Difference	(690)	(707)	(744)	(867)	--
Fifth year	Supply totals	843	864	809	801	--
	Demand totals	1,533	1,571	1,617	1,668	--
	Difference	(690)	(707)	(809)	(867)	--
NOTES: (a) Volumes are in units of MG. To convert from MG to MGD, divide by 365.						

7.1.4.1 Uncertainties in Dry Year Water Supply Projections

As shown in the above tables, significant water supply shortfalls are currently projected in future single and multiple dry years, directly because of Bay-Delta Plan Amendment implementation. However, numerous uncertainties remain in the implementation of the Bay-Delta Plan Amendment as discussed in Section 7.1.1.1 and below. The water supply projections presented above likely represent a worst-case scenario in which the Bay-Delta Plan Amendment is implemented without the SFPUC and the State Water Resources Control Board (SWRCB) reaching a Voluntary Agreement and do not account for implementation of SFPUC's Alternative Water Supply Program (AWSP), described in more detail below. Under this supply scenario, SFPUC appears not to be able to meet its contractual obligations (i.e., Level of Service goals) and Burlingame's forecasted demands during droughts.

BAWSCA also provided individual agency drought allocations for the without Bay-Delta Plan Amendment scenario in Tables N and O2 of the April 1, 2021 memorandum (Appendix F), which are reproduced for the City in Table 7-6. The water supply reliability projections without the Bay-Delta Plan Amendment likely represents a highly optimistic water supply reliability outcome. These projections indicated that without the Bay-Delta Plan Amendment SFPUC would be able to supply 100% of projected RWS demands in all year types through 2040. The large disparity in projected water supply reliability between these two scenarios demonstrate the current level uncertainty.

Table 7-6. Burlingame's SFPUC RWS Supply Availability During Normal and Dry Years for Base Years 2025 through 2040 without Bay Delta Plan Amendment

Base Year	Normal Year	Single Dry Year	Multiple Dry Years				
			Year 1	Year 2	Year 3	Year 4	Year 5
2025	1,909	1,533	1,533	1,533	1,533	1,533	1,533
2030	1,909	1,571	1,571	1,571	1,571	1,571	1,571
2035	1,909	1,617	1,617	1,617	1,617	1,617	1,617
2040	1,909	1,668	1,668	1,668	1,668	1,668	1,668
2045	--	--	--	--	--	--	--

NOTES:
(a) Volumes are in units of MG. To convert from MG to MGD, divide by 365
(b) Source Tables N and O2 of the BAWSCA updated drought allocation memorandum data April 1, 2021.
(c) Results reflect scenario without Bay-Delta Plan Amendment implemented in 2023 and the use projected RWS purchases.

In addition to these two UWMP scenarios, in a March 26, 2021 Special Commission Meeting, SFPUC staff presented HHLSM modeling results for 10 different scenarios, including scenarios with the implementation of the Tuolumne River Voluntary Agreement (TRVA), with the implementation of the Bay-Delta Plan Amendment and the AWSP, and with the use of a modified rationing policy and a modified design drought (presentation included as Appendix H). Results for the scenarios with the TRVA and with the AWSP (particularly with a modified rationing policy and design drought) showed significantly improved RWS supply availability compared to the Bay-Delta Plan Amendment scenario shown herein.

The current sources of uncertainty in the dry year water supply projections are summarized below:

- *Implementation of the Bay-Delta Plan Amendment is under negotiation.* The SFPUC is continuing negotiations with the SWRCB on implementation of the Bay-Delta Plan Amendment for water supply cutbacks, particularly during droughts. The SFPUC, in partnership with other key stakeholders, has proposed a voluntary substitute agreement to the Bay-Delta Plan Amendment, the TRVA, that provides a collaborative approach to protect the environment and plan for a reliable and high-quality future potable water supply. This is a dynamic situation and the projected drought cutback allocations may need to be revised before the next (i.e., 2025) UWMP depending on the outcome of ongoing negotiations, as the shortages under the TRVA would be less than the with Bay-Delta Plan Amendment scenario (example provided in Appendix H).
- *Benefits of the AWSP are not accounted for in current supply projections.* As discussed in Section 7.1.4.2 and Appendix E, SFPUC is exploring options to increase its supplies through the AWSP. Implementation of feasible projects developed under the AWSP is not yet reflected in the supply reliability scenarios presented herein and is anticipated to reduce the projected RWS supply shortfalls (Appendix F).
- *Methodology for Tier One and Tier Two Wholesale drought allocations have not been established for wholesale shortages greater than 20 percent.* As discussed in Section 7.1.1.1, the current Tier One and Tier Two Plans are not designed for RWS supply shortages of greater than 20 percent. For UWMP planning purposes per BAWSCA guidance, the Tier One Wholesale share for a 16 percent to 20 percent supply reduction (62.5 percent) has been applied for reductions greater

than 20 percent, and an equal percent reduction has been applied across all Wholesale agencies for Tier Two. BAWSCA member agencies have not formally agreed to adopt this shortage allocation methodology and are in discussions about jointly developing an alternative allocation method that would consider additional equity factors if SFPUC is unable to deliver its contractual supply volume and cutbacks to the RWS supply exceed 20 percent.

- *RWS demands are subject to change.* The RWS supply availability is dependent upon the system demands. As discussed in Section 7.1.2, the supply scenarios are based on the total projected Wholesale Customer purchases provided by BAWSCA to SFPUC in January 2021. Many BAWSCA agencies have refined their projected demands during the UWMP process after these estimates were provided to SFPUC. Furthermore, the RWS demand projections are subject to change in the future based upon future housing needs, increased conservation, and development of additional local supplies.
- *Frequency and duration of cutbacks are also uncertain.* While the projected shortfalls presented in the UWMP appear severe in the with Bay-Delta Plan Amendment scenario, the actual frequency and duration of such shortfalls are uncertain. Based on the HHLSM simulations provided by BAWSCA for the with Bay-Delta Plan Amendment scenario (Appendix H), rationing is anticipated to be required 20 percent of years for base year 2025 through 2035, 23 percent of all years for base year 2040, and 25 percent of years for base year 2045. In addition to the supply volumes, the above listed uncertainties would also impact the projected frequency and duration of shortfalls.

As such, Burlingame has placed high priority on working with BAWSCA and SFPUC in the upcoming years to better refine the estimates of RWS supply reliability and may amend this UWMP when new information becomes available.

The above uncertainties notwithstanding, BAWSCA's current drought allocation cutbacks will require the City to apply its Water Shortage Contingency Plan (WSCP) Stage 6 for water use restrictions above 50% (see Appendix I) and will affect Burlingame's short- and long-term water management decisions. As described further below (Section 7.1.4.2), Burlingame is working independently and with the other BAWSCA agencies to identify regional mitigation measures to improve reliability for regional and local water supplies and meet its customers' water needs. If conditions for large drought cutbacks to the RWS persist, Burlingame will need to implement additional demand management practices to invoke strict restrictions on potable water use and accelerate efforts to develop alternate supplies of water.

7.1.4.2 Strategies and Actions to Address Dry Year Supply Shortfalls

Although there remains significant uncertainty in future supply availability, discussed above, the City of Burlingame, SFPUC, and BAWSCA have developed strategies and actions to address the projected dry year supply shortfalls. These efforts are discussed in the following sections.

SFPUC and Other Regional Strategies and Actions

Dry Year Water Supply Projects

The WSIP authorized the SFPUC to undertake a number of water supply projects to meet dry-year demands with no greater than 20% system-wide rationing in any one year. Implementation of these projects is also expected to mitigate impacts of the implementation of the Bay-Delta Plan Amendment. Those projects include the following:

- Calaveras Dam Replacement Project. Calaveras Dam is located near a seismically active fault zone and was determined to be seismically vulnerable. To address this vulnerability, the SFPUC constructed a new dam of equal height downstream of the existing dam. Construction on the project occurred between 2011 and July 2019. The SFPUC began impounding water behind the new dam in accordance with California Division of Safety of Dams (DSOD) guidance in the winter of 2018/2019.
- Alameda Creek Recapture Project. As a part of the regulatory requirements for future operations of Calaveras Reservoir, the SFPUC must implement bypass and instream flow schedules for Alameda Creek. The Alameda Creek Recapture Project will recapture a portion of the water system yield lost due to the instream flow releases at Calaveras Reservoir or bypassed around the Alameda Creek Diversion Dam and return this yield to the RWS through facilities in the Sunol Valley. Water that naturally infiltrates from Alameda Creek will be recaptured into an existing quarry pond known as SMP (Surface Mining Permit)-24 Pond F2. The project will be designed to allow the recaptured water to be pumped to the Sunol Valley Water Treatment Plant or to San Antonio Reservoir. Construction of this project will occur from spring 2021 to fall 2022.
- Lower Crystal Springs Dam Improvements. The Lower Crystal Springs Dam (LCSD) Improvements were substantially completed in November 2011. The joint San Mateo County/SFPUC Bridge Replacement Project to replace the bridge across the dam was completed in January 2019. A WSIP follow up project to modify the LCSD Stilling Basin for fish habitat and upgrade the fish water release and other valves started in April 2019. While the main improvements to the dam have been completed, environmental permitting issues for reservoir operation remain significant. While the reservoir elevation was lowered due to DSOD restrictions, the habitat for the Fountain Thistle, an endangered plant, followed the lowered reservoir elevation. Raising the reservoir elevation now requires that new plant populations be restored incrementally before the reservoir elevation is raised. The result is that it may be several years before pre-project water storage volumes can be restored.
- Regional Groundwater Storage and Recovery Project. The Groundwater Storage and Recovery Project (GSRP) is a strategic partnership between SFPUC and three San Mateo County agencies – Cal Water, the City of Daly City, and the City of San Bruno – to conjunctively operate the south Westside Groundwater Basin. The project sustainably manages groundwater and surface water resources in a way that provides supplies during times of drought. During years of normal or heavy rainfall, the project would provide additional surface water to the partner agencies in San Mateo County in lieu of groundwater pumping. Over time, reduced pumping creates water storage through natural recharge of up to 20 billion gallons of new water supply available during dry years.
- The project's Final Environmental Impact Report was certified in August 2014, and the project also received Commission approval that month. Phase 1 of this project consists of construction of thirteen well sites and is over 99 percent complete. Phase 2 of this project consists of completing construction of the well station at the South San Francisco Main site and some carryover work that has not been completed from Phase 1. Phase 2 design work began in December 2019.
- 2 MGD Dry-year Water Transfer. In 2012, the dry-year transfer was proposed between the Modesto Irrigation District and the SFPUC. Negotiations were terminated because an agreement could not be reached. Subsequently, the SFPUC had discussions with the Oakdale Irrigation District for a one-year transfer agreement with the SFPUC for 2 MGD (2,240 acre-feet). No

progress towards agreement on a transfer was made in 2019, but the irrigation districts recognize SFPUC's continued interest and SFPUC will continue to pursue transfers.

In order to achieve its target of meeting at least 80 percent of its customer demand during droughts with a system demand of 265 MGD, and to mitigate the impacts of the Bay-Delta Plan, the SFPUC must successfully implement the dry-year water supply projects included in the WSIP.

Furthermore, the permitting obligations for the Calaveras Dam Replacement Project and the Lower Crystal Springs Dam Improvements include a combined commitment of 12.8 MGD for instream flows on average. When this is reduced for an assumed Alameda Creek Recapture Project recovery of 9.3 MGD, the net loss of water supply is 3.5 MGD.

Alternative Water Supply Program

As discussed, below, BAWSCA has taken steps to ensure that SFPUC develop alternative water supplies:

With the adoption of the Bay-Delta Plan Phase 1 (Bay-Delta Plan) by the State Water Resources Control Board in December of 2018, coupled with the uncertainties associated with litigation and the development of Voluntary Agreements that, if successful, would provide an alternative to the 40% unimpaired flow requirement that is required by the Bay-Delta Plan, BAWSCA redoubled its efforts to ensure that the SFPUC took necessary action to develop alternative water supplies such that they would be in place to fill any potential gap in supply by implementation of the Bay-Delta Plan and that the SFPUC would be able to meet its legal and contractual obligations to its Wholesale Customers.

In 2019, BAWSCA held numerous meetings with the SFPUC encouraging them to develop a division within their organization whose chief mission was to spearhead alternative water supply development. On June 25, 2019, BAWSCA provided a written and oral statement to the Commissioners urging the SFPUC to focus on developing new sources of supply in a manner similar to how it addressed the implementation of the Water System Improvement Program (WSIP). BAWSCA urged that a new water supply program was called for, with clear objectives, persistent focus, a dedicated team, adequate funding, and a plan for successful execution. The SFPUC Commission supported BAWSCA's recommendation and directed staff to undertake such an approach.

In early 2020, the SFPUC began implementation of the Alternative Water Supply Planning Program (AWSP), a program designed to investigate and plan for new water supplies to address future long-term water supply reliability challenges and vulnerabilities on the RWS.

Included in the AWSP is a suite of diverse, non-traditional supply projects that, to a great degree, leverage regional partnerships and are designed to meet the water supply needs of the SFPUC Retail and Wholesale Customers through 2045. As of the most recent Alternative Water Supply Planning Quarterly Update, SFPUC has budgeted $264 million over the next ten years to fund water supply projects. BAWSCA is heavily engaged with the SFPUC on its AWSP efforts.

SFPUC's AWSP is described in more detail below:

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

1. Offset instream flow needs and meet regulatory requirements
2. Meet existing obligations to existing permanent customers
3. Make interruptible customers permanent
4. Meet increased demands of existing and interruptible customers

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

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

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

In addition to the Daly City Recycled Water Expansion project[24], which was a potential project identified in the SFPUC's 2015 UWMP and had committed funding at that time, the SFPUC has taken action to fund the study of potential additional water supply projects. Capital projects under consideration to develop additional water supplies include surface water storage expansion, recycled water expansion, water transfers, desalination, and potable reuse. A more detailed list and descriptions of these efforts are provided below.

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

- *Daly City Recycled Water Expansion (Regional, Normal- and Dry-Year Supply)*. This project can produce up to 3 MGD of tertiary recycled water during the irrigation season (~7 months). On an

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[24] While this potential project was identified in the 2015 UWMP, it has since been approved by Daly City following environmental review and has a higher likelihood of being implemented.

average annual basis, this is equivalent to 1.25 MGD or 1,400 AFY. The project is envisioned to provide recycled water to 13 cemeteries and other smaller irrigation customers, offsetting existing groundwater pumping from the South Westside Groundwater Basin; this will free up groundwater, enhancing the reliability of the Basin. The project is a regional partnership between the SFPUC and Daly City. The irrigation customers are located largely within California Water Service's (Cal Water's) service area. RWS customers will benefit from the increased reliability of the South Westside Basin for additional drinking water supply during droughts. In this way, this project supports the GSR Project, which is under construction.

- *ACWD-USD Purified Water Partnership (Regional, Normal- and Dry-Year Supply)*. This project could provide a new purified water supply utilizing Union Sanitary District's (USD) treated wastewater. Purified water produced by advanced water treatment at USD could be transmitted to the Quarry Lakes Groundwater Recharge Area to supplement recharge into the Niles Cone Groundwater Basin or put to other uses in Alameda County Water District's (ACWD) service area. With the additional water supply to ACWD, an in-lieu exchange with the SFPUC would result in more water left in the RWS. Additional water supply could also be directly transmitted to the SFPUC through a new intertie between ACWD and the SFPUC.
- *Crystal Springs Purified Water (Regional, Normal- and Dry-Year Supply)*. The Crystal Springs Purified Water (PREP) Project is a purified water project that could provide 6-12 MGD of water supply through reservoir water augmentation at Crystal Springs Reservoir, which is a facility of the RWS. Treated wastewater from Silicon Valley Clean Water (SVCW) and/or the City of San Mateo would go through an advanced water treatment plant to produce purified water that meets state and federal drinking water quality standards. The purified water would then be transmitted 10 to 20 miles (depending on the alignment) to Crystal Springs Reservoir, blended with regional surface water supplies and treated again at Harry Tracy Water Treatment Plant. Project partners include the SFPUC, Bay Area Water Supply and Conservation Agency (BAWSCA), SVCW, CalWater, Redwood City, Foster City, and the City of San Mateo. Partner agencies are contributing financial and staff resources towards the work effort.
- *Los Vaqueros Reservoir Expansion (Regional, Dry Year Supply)*. The Los Vaqueros Reservoir Expansion (LVE) Project is a storage project that will enlarge the existing reservoir located in northeastern Contra Costa County from 160,000 acre-feet to 275,000 acre-feet. While the existing reservoir is owned and operated by the Contra Costa Water District (CCWD), the expansion will have regional benefits and will be managed by a Joint Powers Authority (JPA) that will be set up prior to construction. Meanwhile, CCWD is leading the planning, design and environmental review efforts. CCWD's Board certified the EIS/EIR and approved the LVE Project on May 13, 2020. The additional storage capacity from the LVE Project would provide a dry year water supply benefit to the SFPUC. BAWSCA is working in concert with the SFPUC to support their work effort on the LVE project.
    - Conveyance Alternatives: The SFPUC is considering two main pathways to move water from storage in a prospective LVE Project to the SFPUC's service area, either directly to RWS facilities or indirectly via an exchange with partner agencies. The SFPUC is evaluating potential alignments for conveyance.
    - Bay Area Regional Reliability Shared Water Access Program (BARR SWAP): As part of the BARR Partnership, a consortium of 8 Bay Area water utilities (including ACWD, BAWSCA, CCWD, EBMUD, Marin Municipal Water District (MMWD), SFPUC, Valley Water, and Zone 7 Water Agency) are exploring opportunities to move water across the region as

efficiently as possible, particularly during times of drought and emergencies. The BARR agencies are proposing two separate pilot projects in 2020-2021 through the Shared Water Access Program (SWAP) to test conveyance pathways and identify potential hurdles to better prepare for sharing water during a future drought or emergency. A strategy report identifying opportunities and considerations will accompany these pilot transfers and will be completed in 2021.

- *Bay Area Brackish Water Desalination (Regional, Normal- and Dry-Year Supply)*. The Bay Area Brackish Water Desalination (Regional Desalination) Project is a partnership between CCWD, the SFPUC, Valley Water, and Zone 7 Water Agency. The East Bay Municipal Utilities District (EBMUD) and ACWD may also participate in the project. The project could provide a new drinking water supply to the region by treating brackish water from CCWD's existing Mallard Slough intake in Contra Costa County. While this project has independent utility as a water supply project, for the current planning effort the SFPUC is considering it as a source of supply for storage in LVE. While the allocations remain to be determined among partners, the SFPUC is considering a water supply benefit of between 5 and 15 MGD during drought conditions when combined with storage at LVE.
- *Calaveras Reservoir Expansion (Regional, Dry Year Supply)*. Calaveras Reservoir would be expanded to create 289,000 acre-feet (AF) additional capacity to store excess Regional Water System supplies or other source water in wet and normal years. In addition to reservoir enlargement, the project would involve infrastructure to pump water to the reservoir, such as pump stations and transmission facilities.
- *Groundwater Banking*. Groundwater banking in the Modesto Irrigation District (MID) and Turlock Irrigation District (TID) service areas could be used to provide some additional water supply to meet instream releases in dry years reducing water supply impacts to the SFPUC service area. For example, additional surface water could be provided to irrigators in wet years, which would offset the use of groundwater, thereby allowing the groundwater to remain in the basin rather than be consumptively used. The groundwater that remains in the basin can then be used in a subsequent dry year for irrigation, freeing up surface water that would have otherwise been delivered to irrigators to meet instream flow requirements.
- A feasibility study of this option is included in the proposed Tuolumne River Voluntary Agreement. Progress on this potential water supply option will depend on the negotiations of the Voluntary Agreement.
- *Inter-Basin Collaborations*. Inter-Basin Collaborations could provide net water supply benefits in dry years by sharing responsibility for in-stream flows in the San Joaquin River and Delta more broadly among several tributary reservoir systems. One mechanism by which this could be accomplished would be to establish a partnership between interests on the Tuolumne River and those on the Stanislaus River, which would allow responsibility for streamflow to be assigned variably based on the annual hydrology.
- As is the case with Groundwater Banking, feasibility of this option is included in the proposed Tuolumne River Voluntary Agreement.

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

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

BAWSCA's Long Term Reliability Water Supply Strategy

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

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

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

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

- *Water Transfers*. BAWSCA successfully facilitated two transfers of portions of Individual Supply Guarantee (ISG) between BAWSCA agencies in 2017 and 2018. Such transfers benefit all BAWSCA agencies by maximizing use of existing supplies. BAWSCA is currently working on an amendment to the Water Supply Agreement between the SFPUC and BAWSCA agencies to establish a mechanism by which member agencies that have an ISG may participate in expedited transfers of a portion of ISG and a portion of a Minimum Annual Purchase Requirement. In 2019, BAWSCA participated in a pilot water transfer that, while ultimately unsuccessful, surfaced important lessons learned and produced interagency agreements that will serve as a foundation for future transfers. BAWSCA is currently engaged in the Bay Area Regional Reliability Partnership (BARR)[25], a partnership among eight Bay Area water utilities (including the SFPUC, Alameda County Water District, BAWSCA, Contra Costa Water District, Santa Clara Valley Water District) to identify opportunities to move water across the region as efficiently as possible, particularly during times of drought and emergencies.
- *Regional Projects*. Since 2015, BAWSCA has coordinated with local and State agencies on regional projects with potential dry-year water supply benefits for BAWSCA's agencies. These efforts include storage projects, indirect/direct water reuse projects, and studies to evaluate the capacity and potential for various conveyance systems to bring new supplies to the region.

[25] https://www.bayareareliability.com/

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

City of Burlingame Strategies and Actions

In addition to the management tools and options discussed below, Burlingame has been involved directly and through BAWSCA to advocate for an alternative to the Bay-Delta Plan Amendment, including submitting letters in 2017 and 2018 (see Appendix J) that identify, among other things, the significant impact to local water supply reliability.

7.1.5 Management Tools and Options

☑ ***CWC § 10620 (f)***

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

At a regional level, Burlingame maintains active involvement in the work that SFPUC and BAWSCA are doing with respect to optimizing the use of regional water supplies and pursuing additional supplies. These efforts are detailed in Sections 7.1.4.2.

Burlingame has also been implementing, and plans to continue to implement, the demand management measures described in Section 9. Further, in response to the anticipated future dry-year shortfalls, Burlingame has developed a robust Water Shortage Contingency Plan (WSCP) that systematically identifies ways in which Burlingame can reduce water demands. The Water Shortage Contingency Plan is included in Appendix I.

7.2 Drought Risk Assessment

☑ ***CWC § 10635(b)***

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

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

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

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

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

In addition to the long-term water service reliability assessment presented above, the DRA evaluates the City's supply risks under a severe drought period lasting for the next five consecutive years after the assessment is completed, i.e., from 2021 through 2025. The DRA is intended to inform the demand management measures and water supply projects and programs to be included in the UWMP (see Sections 8 and 9). Suppliers may conduct an interim update or updates to this DRA within the five-year cycle of its urban water management plan update, i.e., before the 2025 UWMP.

7.2.1 Data, Methods, and Basis for Water Shortage Condition

As a first step to the DRA, Burlingame estimate unconstrained water demand for the next five years (2021-2025). Unconstrained water demand is the expected water use in the absence of drought water use restrictions. The characteristic five-year water use, shown in Table 7-7, for year 2021 is a combination of actual water demands and an estimation for the remaining fiscal years. This estimated water use was assumed to have the same percentage decrease as was observed for the first half of FY 2020-21 due to COVID-19. For year 2022, it is assumed that water demands will return to pre-pandemic levels so FY 2019 water demand has been projected below. For years 2023 through 2025, the Tier Two Plan specifies that each agencies' Allocation Factor would be calculated once at the onset of a shortage based on the previous year's use and remains the same until the shortage condition is over. Since this plan assumes that the Bay-Delta Plan Amendment will be in effect in 2023, the water demand is assumed to remain static from 2022 through the drought sequence.

Table 7-7. Characteristic Five-Year Water Use

2021	2022	2023	2024	2025
1,219	1,249	1,249	1,249	1,249
NOTES: (a) Volumes are in units of MG.				

The available potable water supplies assumed in the DRA are based upon the same methodology and assumptions used for the long-term water service reliability assessment (Section 7.1) and relies on information provided by SFPUC and BAWSCA (Appendix F). The available RWS water supplies are estimated based on the following assumptions: (1) The RWS demands are held constant at 132.1 MGD (i.e., 2020 demand levels), (2) implementation of the Bay-Delta Plan Amendment occurs in 2023, and (3) the 2020 infrastructure conditions are maintained (see Table 1 of the January 22, 2021 SFPUC letter in Appendix F).

7.2.2 DRA Individual Water Source Reliability

As described in Chapter 6, Burlingame purchases imported surface water from the SFPUC RWS to meets its potable water demands.

The City's available potable water supplies during the five-consecutive-year drought are based upon information provided by SFPUC and BAWSCA included in Appendix F. Specifically, the percent cutback of supply to Wholesale Customers used as the basis for the analysis can be found in Table F1 included in the April 1, 2021 BAWSCA drought allocation tables, which are based on the March 30, 2021 SFPUC letter (Appendix F).

As discussed in Section 7.2.1, the SFPUC's supply reliability projections assume the Bay-Delta Plan Amendment takes effect in 2023. The April 1, 2021 BAWSCA drought allocations tables and the March 30, 2021 SFPUC letter indicate that prior to the assumed implementation of the Bay-Delta Plan Amendment in 2023, sufficient RWS supplies will be available to meet the Wholesale Customers' purchase requests during the first two consecutive dry years (i.e., 2021 and 2022).

Shortages are projected to begin in 2023 with the implementation of the Bay-Delta Plan Amendment. In the event of a shortage, the current Tier 2 Drought Allocation Plan (Section 7.1.1.1) specifies that each agencies' Allocation Factor would be calculated once at the onset of a shortage based on the previous year's use and remain the same until the shortage condition is over. Therefore, for the purpose of drought allocations for the DRA, the available RWS supply is assumed to remain static in 2023-2025 and equal to the percent cutback of 47% shown in Table F1 in the April 1, 2021 BAWSCA drought allocation tables relative to 2022 Projected Wholesale Purchases.[26]

7.2.3 DRA Total Water Supply and Use Comparison

Table 7-8 provides a comparison of the water supply sources available to Burlingame with the total projected water use for an assumed drought period of 2021 through 2025. The City is expected to experience significant shortfalls in years 2023-2025 of the DRA with unconstrained demands because of the assumed implementation of the Bay-Delta Plan Amendment in 2023.

Burlingame has developed a WSCP (Appendix I) to address water shortage conditions resulting from any cause (e.g., droughts, impacted distribution system infrastructure, regulatory-imposed shortage restrictions, etc.). The WSCP identifies a variety of actions that Burlingame will implement to reduce demands and further ensure supply reliability at various levels of water shortage.

Given the current uncertainty discussed in Section 7.1.4.1, Burlingame could update its DRA prior to the 2025 UWMP update if significant new information becomes available. CWC §10635(b) permits urban water suppliers to conduct an interim update or updates to their DRA within the five-year cycle of its UWMP update. Burlingame anticipates that by the 2025 UWMP update, SFPUC will provide more specific information about the AWSP, with estimated water supply contributions from such projects. Additionally, Burlingame expects that SFPUC will provide more specific information and a refined estimate of the Bay-Delta Plan Amendment impacts to the SFPUC supply. Further, it is anticipated that the Wholesale Customers will negotiate a revised Tier 2 allocation formula that could affect each agency’s share of available supplies in drought years relative to what has been presented herein.

The City of Burlingame recommends that users of its 2020 UWMP contact City staff for potential updates to the DRA presented in the 2020 UWMP for their planning projects.

[26] Note that this DRA is based on the percentages shown in Table F1 of the April 1, 2021 BAWSCA letter assuming equal percent cutbacks between agencies instead of the volumes shown in Table F2. This DRA does not rely on the supply volumes shown in Table F2 because they are based on outdated RWS supply projections for the City of Burlingame. Specifically, the supply available to the City for the consecutive 3rd, 4th, and 5th dry years (i.e., 2023-2025 of the DRA) is estimated to have a 47% reduction to the City’s projected 2022 demand.

Table 7-8. Five-Year Drought Risk Assessment Tables to Address Water Code 10635(b) (DWR Table 7-5)

2021	Total
Total Water Use	1,219
Total Supplies	1,219
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	0
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0%

2022	Total
Total Water Use	1,249
Total Supplies	1,249
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	1,249
Total Supplies	662
Surplus/Shortfall w/o WSCP Action	(587)
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	587
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	47%

2024	Total
Total Water Use	1,249
Total Supplies	662
Surplus/Shortfall w/o WSCP Action	(587)
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	587
Revised Surplus/(shortfall)	0

Table 7-8. Five-Year Drought Risk Assessment Tables to Address Water Code 10635(b) (DWR Table 7-5)

Resulting % Use Reduction from WSCP action	47%

2025	Total
Total Water Use	1,249
Total Supplies	662
Surplus/Shortfall w/o WSCP Action	(587)
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	587
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	47%
NOTES: (a) Volumes are in units of MG.	

8. WATER SHORTAGE CONTINGENCY PLANNING

The City of Burlingame's Water Shortage Contingency Plan (WSCP) is included as Appendix I. The WSCP serves as a standalone document to be engaged in the case of a water shortage event, such as a drought or supply interruption, and defines specific policies and actions that will be implemented at various shortage level scenarios. The primary objective of the WSCP is to ensure that Burlingame has in place the necessary resources and management responses needed to protect health and human safety, minimize economic disruption, and preserve environmental and community assets during water supply shortages and interruptions. Consistent with California Water Code §10632, the WSCP includes six levels to address shortage conditions ranging from up to 10% to greater than 50% shortage, identifies a suite of demand mitigation measures for Burlingame to implement at each level, and identifies procedures for Burlingame to annually assess whether or not a water shortage is likely to occur in the coming year, among other things.

All required WSCP tables (DWR Table 8-1, Table 8-3, and Table 8-3) are included in Appendix I.

9. DEMAND MANAGEMENT MEASURES

☑ ***CWC § 10631 (e)***

Provide a description of the supplier's water demand management measures. This description shall include all of the following:

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

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

(i) Water waste prevention ordinances.

(ii) Metering.

(iii) Conservation pricing.

(iv) Public education and outreach.

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

(vi) Water conservation program coordination and staffing support.

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

This section provides an overview of the City of Burlingame (City or Burlingame)'s current and planned demand management measures (DMMs), which include specific types and groupings of water conservation measures typically implemented by water suppliers; the DMMs are closely aligned with the California Urban Water Conservation Council (CUWCC) Best Management Practices. Burlingame administers several of its DMMs through Bay Area Water Supply and Conservation Agency (BAWSCA)'s Regional Water Conservation Program. The following sections describe BAWSCA's Regional Water Conservation Program and the nature and extent of the specific DMMs implemented by Burlingame.

9.1 Regional Water Conservation Programs

BAWSCA manages a Regional Water Conservation Program comprised of several programs and initiatives that support and augment member agencies' and customers' efforts to use water more efficiently. These efforts extend limited water supplies that are available to meet both current and future water needs; increase drought reliability of the existing water system; and save money for both the member agencies and their customers.

The implementation of the Regional Water Conservation Program builds upon both the Water Conservation Implementation Plan (WCIP, completed in September 2009) and the Regional Demand and Conservation Projections Project (Demand Study, completed in June of 2020). These efforts include both Core Programs (implemented regionally throughout the BAWSCA service area) and Subscription Programs (funded by individual member agencies that elect to participate and implement them within their respective service areas).

BAWSCA's Core Conservation Programs include organizing classes open to the public on topics such as water efficient landscape education and water-wise gardening, assistance related to automated metering infrastructure, and other associated programs that work to promote smart water use and practices. BAWSCA's Subscription Programs include numerous rebate programs, educational programs that can be offered to area schools, technical assistance to member agencies in evaluating water loss, and programs to train and certify contractors employed to install water efficient landscape. In total, BAWSCA offers 22 programs to its member agencies and that number continues to grow over time.

Each fiscal year, BAWSCA prepares an Annual Water Conservation Report that documents how all of BAWSCA's 26 member agencies have benefitted from the Core Conservation Programs. Additionally, the report highlights how all 26 member agencies participate in one or more of the Subscription Programs offered by BAWSCA, such as rebates, water loss management and large landscape audits. The Demand Study indicates that through a combination of active and passive conservation, 37.3 MGD will be conserved by BAWSCA's member agencies by 2045.

The Core Programs provided as a part of the Regional Water Conservation Program include conservation measures that benefit from regional implementation and provide overall regional benefit, and are funded through the annual BAWSCA budget. The Subscription Programs are conservation measures that individual agencies must elect to participate in, and whose benefits are primarily realized within individual water agency service areas. As such, the Subscription Programs are funded by individual member agencies, based on their participation level. As of October 2020, Burlingame participates in the following Subscription Programs:

- EarthCapades Assemblies School Education Program
- Landscape Education Program
- Rain Barrel Rebate Program
- Smart Irrigation Controller Program
- Water Loss Management Program
- WaterWise School Education Program

9.2 Agency Water Conservation

☑ ***CWC § 10631 (e)***

Provide a description of the supplier's water demand management measures. This description shall include all of the following:

(1) (A) For an urban retail water supplier, as defined in Section 10608.12, a narrative description that addresses the nature and extent of each water demand management measure implemented over the past five years.

Burlingame's implementation of, and participation in, the Core and Subscription Programs between 2015 and 2020 are described in detail below, as they relate to Burlingame's implementation of the DMMs.

9.2.1 Water Waste Prevention Ordinances

As discussed in the Water Shortage Contingency Plan (WSCP; Appendix I), Burlingame has the authority within Chapters 15.06 and 15.07 (Ordinance No. 1994) of the City of Burlingame Municipal Code to require water rationing and conservation and to enforce penalties. The City's Water Rationing Plan (Resolution 49-92) includes a subsection that reduces water waste during times of shortage by prohibiting, mandating, and encouraging various actions. An adopted Water Shortage Contingency Plan resolution corresponding to the 2020 WSCP update is included in Appendix I.

In July 2021, the Burlingame City Council adopted a permanent water waste prevention ordinance under Municipal Code Chapter 15.07. The ordinance combines a number of water waste restrictions from Governor Brown's Executive Order B-40-17, which was issued during the 2012-2016 drought, as well as additional restrictions implemented by neighboring cities.

Prohibited Water Use Restrictions:

- Use of a hose for any purpose without a positive shut-off nozzle.
- Use of potable water for cleaning, filling, or operating water features, such as decorative fountains, except where the water is part of a recirculating system.
- The application of potable water to irrigate outdoor plant, lawn, grass, landscaping, or turf areas during and within twenty-four (24) hours after measurable rainfall.
- The application of potable water to street medians containing ornamental turf.
- Use through broken or defective plumbing, sprinkler, watering, or irrigation systems.
- Use in new, added, or altered car wash equipment unless a recirculating water system is incorporated.
- The prohibition enumerated in subsection (d) of this section does not apply to any water treatment features, such as landscaping and green roofs, to meet the requirements of the municipal regional stormwater National Pollutant Discharge Elimination System.
- To promote conservation, hotels and motels shall provide guests with the option of choosing not to have towels and linens laundered daily and display notice of this option in guestrooms.
- No water shall be taken or used from any fire hydrant or any unmetered City water system outlet/fitting/fixture unless specifically authorized by permit from the director, except by legally constituted fire protection agencies for fire suppression purposes.

9.2.2 Metering

☑ ***CWC § 526 (a)***

Notwithstanding any other provision of law, an urban water supplier that, on or after January 1, 2004, receives water from the federal Central Valley Project under a water service contract or subcontract … shall do both of the following:

(1) On or before January 1, 2013, install water meters on all service connections to residential and nonagricultural commercial buildings constructed prior to January 1, 1992, located within its service area.

(2) On and after March 1, 2013, or according to the terms of the Central Valley Project water contract in operation, charge customers for water based on the actual volume of deliveries, as measured by a water meter.

☑ ***CWC § 527 (a)***

(a) An urban water supplier that is not subject to Section 526 shall do both of the following:

(1) Install water meters on all municipal and industrial service connections located within its service area on or before January 1, 2025.

All Burlingame customers are metered and billed by meter size and the quantity of use. Customers with large landscaped areas (i.e., greater than 5,000 square feet) are required to install separate irrigation meters in accordance with the Water Conservation in Landscape Ordinance (Burlingame Municipal Code 18.17) which is modeled after the California Water Conservation in Landscaping Act and enacted in March 2010. Additionally, meters are recommended for landscape areas greater than 2,500 square feet. The installation of such meters is enforced through the City's Community Development Department, Building Division.

Water meters are read by City employees either manually, using "touch-read" meters, or via automatic meter reading (AMR) instrumentation. As of 2016, all of the City's approximately 9,000 meters have been upgraded to AMR meters with radio capabilities. The implementation of AMR meters allows Burlingame to automate meter reading and provide real-time water use data to staff that can be used to aggressively target leaks and atypically high water use during normal years and periods of water shortage. Meters are rechecked frequently when a customer's bill is suspiciously higher than in previous months. If a meter recheck confirms a large increase in water use, the City proceeds with a leak investigation or residential survey. For billing purposes, customer meters are read on a bimonthly basis.

9.2.3 Conservation Pricing

The City's water customers are billed bi-monthly and for every 1,000 gallons of water used. For single-family residences, Burlingame uses a five-tiered rate structure which was enacted January 1, 2013. The rate structure shown below is effective January 1, 2019[27]:

[27] City of Burlingame Water Rates, https://www.burlingame.org/Water%20Rate%20Handout%202019.pdf, accessed 5 October 2020.

Tier	Volume	Rate per 1,000 Gallons
Tier 1	0 to 4,000 gallons	$9.79
Tier 2	4,001 to 8,000 gallons	$10.98
Tier 3	8,001 to 16,000 gallons	$12.18
Tier 4	16,001 gallons to 24,000 gallons	$13.38
Tier 5	24,001 gallons and above	$14.58

All other customer classifications are charged $11.46/1,000 gallons.

A bi-monthly fixed charge is also assessed for customers according to their meter size. This charge is to recover costs not directly related to water consumption, such as meter reading and repair, customer service, insurance, and water testing requirements. For example, customers with a 5/8" meter are charged $84.03 every two months while customers with an 8" meter are charged $4,481.60 every two months.

9.2.4 Public Education and Outreach

Burlingame implements a number of public education and outreach programs with support from the BAWSCA Regional Water Conservation Program. Specific programs include:

- <u>EarthCapades Assemblies School Education Program:</u> EarthCapades coordinates and performs school assemblies at Burlingame public schools. The EarthCapades performances combine age-appropriate state science standards with circus skills, juggling, music, storytelling, comedy, and audience participation to teach environmental awareness, water science, and conservation. The EarthCapades assemblies are designed to include local water source and watershed education and specific information pertaining to the Burlingame service area. Burlingame and BAWSCA provide specific information to EarthCapades regarding the San Francisco Public Utilities Commission Regional Water System (SFPUC RWS) and other topics (e.g., recycled water). EarthCapades integrates this information into the specific scripts used for assemblies conducted within the Burlingame service area. Burlingame sponsored the EarthCapades assemblies from FY 19-20 to FY 20-21. Due to COVID-19, school assemblies were switched to an online format starting spring 2020.
- <u>Landscape Education Program:</u> Burlingame hosts and advertises a series of water-efficient landscape education classes taught by professional instructors that are free to the public and are designed to introduce homeowners and landscape professionals to the concepts of sustainable landscape design. The classes focus on creating beautiful, water-efficient gardens as an alternative to lawns. Examples of previous class topics include "Rainwater Harvesting 101", "Water-Efficient Organic Edible Gardening", and "Design It Yourself Native Plant Landscape", among others. Burlingame regularly offered landscape education classes to the public between FY 15-16 and FY 20-21.

- WaterWise School Education Program: The WaterWise school education program is provided by Franklin Energy Services (a contractor to BAWSCA) to fifth grade students within the Burlingame service area. Franklin Energy Services works directly with teachers and schools to provide them with turn-key, in-classroom water conservation curriculum and indoor and outdoor water conservation kits (i.e., the WaterWise Kits). The WaterWise curriculum has been designed to be easily implemented by teachers, and easily understood and taken back into the home by the students. The WaterWise Kits include water saving devices that can be installed at the student's homes (e.g., low-flow showerheads and faucet aerators) and a water audit that the students can perform with their parents.

  The students are provided with the motivation, information, and tools they need to perform an in-home water audit. The information and material provided to the teachers and students also includes methods that can be used to quantify the water savings as a result of installing the equipment contained in the kit and performing the recommended, water-conserving actions. After the student performs the audit and installs the water and energy saving devices, affidavits signed by the parents are returned to the school, collected by the teacher, and forwarded to Franklin Energy Services for documentation of measure implementation and the estimated water savings. Franklin Energy Services then prepares a final report for distribution to the City. Burlingame has participated in the Water-Wise School Education Program every year between FY 09-10 and FY 20-21.

- Hosting information booths at fairs and public events: City staff set up information booths at large public events in the Burlingame service area (e.g., Art on the Avenue) to distribute information regarding Burlingame's water conservation programs including rebate programs, landscape education programs, and water-efficient device giveaways. Burlingame participated in various public events between FY 09-10 and FY 19-20. Beginning March 2020, large public gatherings have been cancelled to reduce the spread of COVID-19.

- Informative website, online tools, and social media: Burlingame maintains a dedicated Water Conservation webpage, accessible at www.burlingame.org/waterconservation, which includes information on available water conservation programs. The website also provides information regarding water-efficient landscaping, water conservation tips, previous landscape education workshops, and frequently asked questions. The City regularly promotes water conservation messages and programs on its weekly electronic newsletter (i.e., eNews), Facebook, Instagram, and Nextdoor platforms.

- Marketing and communication: Burlingame encourages water conservation and promotes its rebate programs through the water bill inserts, water bill messaging, and garbage utility bill inserts. The City also provides literature, information, and classroom visits upon request.

9.2.5 Programs to Assess and Manage Distribution System Real Loss

The City conducts an annual water loss audit to determine the volume of non-revenue water by comparing the City's purchased potable water supplies with its recorded potable water use. Water purchases are recorded by SFPUC master meters and saved in the City's Fiscal Reports. The total metered consumption is from the Finance Department and unmetered water use (e.g. water main flushing and firefighting activities) is provided by the Water Division and Fire Department. The City will continue to monitor its potable water distribution system efficiency, with a goal to maintain it above 90% efficient.

9.2.6 Water Conservation Program Coordination and Staffing Support

A number of water services and operations staff perform the duties of "Water Conservation Coordinator" for the City. These staff respond to leak investigations, perform residential surveys, maintain water conservation material and kits, provide customer service to low pressure and dirty water reports, and complete the other water conservation activities on behalf of the City. Regional planning and coordination efforts are handled by BAWSCA with input from agency representative.

Contact information for Burlingame's conservation program is listed below:

Phone: 650-558-7612

Email: WaterConservation@burlingame.org

9.2.7 Other DMMs

Other DMMs provided by the Burlingame, in addition to those discussed above, include the following:

- High Efficiency Toilet (HET) Rebates: Burlingame administered an HET Rebate Program for its residential and commercial customers. The program was one of the Subscription Programs available to BAWSCA member agencies. As part of this program, Burlingame offered customers rebates up to $100 for replacing an existing toilet with a qualifying MaP Premium model toilet which uses 1.06 gallons or less per flush. Up to three rebates were allowed per address. Between FY 2015-16 and FY 2019-2020, Burlingame provided a total of 1,867 rebates. This program has been discontinued by BAWSCA as of December 31, 2019.
- High-Efficiency Residential Washing Machine Rebates: Burlingame locally administered a High-Efficiency Residential Washing Machine Rebate program for its residential customers which, through joint participation with Pacific Gas & Electric (PG&E), included a rebate of up to $150 to customers that purchased a qualifying washing machine. The High-Efficiency Residential Washing Machine Rebate program was one of the Subscription Programs available to BAWSCA member agencies. Burlingame offered washing machine rebates to its customers between FY 2015-16 and FY 2016-17, until it was discontinued.
- Smart Irrigation Controller Program: This program helps homeowners to maximize watering efficiency with discounted pricing on the Rachio 3 Smart Irrigation Controller. This controller is compatible with most irrigation systems and can save up to 50% of outdoor water use by calculating when and how long to run sprinklers for and adjusting to local weather conditions. The smart irrigation controller also allows customers to control their irrigation system using a mobile device and can connect to a smart speaker, e.g. Amazon Alexa. This program was first offered to BAWSCA member agencies in FY 19-20 and the City has participated in this program from FY 19-20 to FY 20-21.
- Rain Barrel Rebate Program: In partnership with the San Mateo Countywide Water Pollution Prevention Program (SMCWPPP), BAWSCA and participating member agencies offers rebates up to $200 per rain barrel or cistern for the purchase and installation of qualifying rain barrels. Eligible rain barrels must be at least 50 gallons, designed for the intended purpose of rain capture, equipped with a secure lid, and resistant to algae and UV. Burlingame water customers are eligible for a rebate up to $200 (funded by SMCWPPP and City of Burlingame). Burlingame has participated in this program from FY 18-19 to FY 20-21.

- Residential Surveys: Burlingame's residential surveys are performed on request or when triggered by customer calls regarding high bills or leak investigations. The surveys consist of a personal visit to the residence by the Water Conservation Coordinator, aimed at determining the source of increased water use (e.g. leaks, swimming pools, etc.). This site visit includes checks for leaks in toilets and faucets, showerhead flow rates and replacement recommendations, as well as checks on irrigation and landscape systems. The City offered audits to its residential customers from 2010 through 2020.

- Water-saving Fixtures Giveaway: Burlingame offers the following water-saving fixtures for free at public outreach events:

    - Bathroom aerator - uses 1 gallons per minute (gpm)
    - Kitchen aerator - uses 1.5 gpm
    - Low-flow shower head - uses 1.5 gpm
    - Toilet leak detection tablets (2 tablets per packet)
    - Water conserving hose nozzles (with shut-off valve)

  Burlingame offered fixture kits to its customers regularly over the last five years.

- Residential Retrofits: The City adopted the Indoor Water Conservation Ordinance (Burlingame Municipal Code 18.19) establishing indoor water conservation regulations in March 2010, as required under CALGreen Building Code Standards.[28] The ordinance requires all new construction and applicable remodels to at a minimum, install fixtures that comply with the efficiency standards listed in the ordinance. The ordinance complies with the provisions of the 2007 California Plumbing Code. Compliance with the Ordinance is overseen by the City's Community Development Department, Building Division.

- Leak Identification Program: To minimize water loss within the system, the City conducts leak investigation and repair on a regular basis. Investigations are triggered by abnormally high water bills.[29] When leaks in the system are detected, they are repaired by the City. Leaks on the customer's side of the meter are reported to the customer and the City advises them on repair. Burlingame's leak detection program was implemented regularly over the last five years.

[28] The City requires that all new residential and non-residential construction comply with the mandatory CALGreen Requirements (Chapter 18.30 of the Burlingame Municipal Code, Ordinance 1857-2010, adopted in 2010).

[29] The City defines a water bill as abnormally high if it exceeds water use from the same billing cycle of the previous year by more than 20%. Additionally, the City will respond to customer complaints of high water bills.

9.3 Planned Implementation to Achieve Water Use Targets

☑ ***CWC § 10631 (e)***

Provide a description of the supplier's water demand management measures. This description shall include all of the following:

(1) (A) … The narrative shall describe the water demand management measures that the supplier plans to implement to achieve its water use targets pursuant to Section 10608.20.

Burlingame implemented all of the DMMs described in Section 9.2 to achieve its Senate Bill (SB) X7-7 water use targets. As shown in Chapter 5, Burlingame's water use in 2020 was 107 gallons per capital per day (GPCD), which is substantially lower than its SB X7-7 water use target of 135 GPCD.

9.4 Urban Water Use Objectives (Future Requirement)

CWC § 10609 requires that urban retail water suppliers develop new water use objectives that are based on specific standards for certain water use sectors. These water use objectives will not be developed until 2023. Suppliers are encouraged in this UWMP cycle to consider how they will align their conservation management actions in order to meet these future obligations.

Following the 2014-2016 drought, the State of California (State) developed the "Making Water Conservation a California Way of Life" framework to address the long-term water use efficiency requirements called for in executive orders issued by Governor Brown. In May of 2018, Assembly Bill 1668 and Senate Bill 606 (collectively referred to as the efficiency legislation) went into effect, which built upon the executive orders implementing new urban water use objectives for urban retail water suppliers.

BAWSCA led its member agencies in a multi-year effort to develop and implement a strategy to meet these new legislative requirements. BAWSCA's Making Conservation a Way of Life Strategic Plan (Strategic Plan) provided a detailed roadmap for member agencies to improve water efficiency. BAWSCA implementing the following elements of the Strategic Plan:

- Conducted an assessment of the agencies' current practices and water industry best practices for three components of the efficiency legislation that, based on a preliminary review, present the greatest level of uncertainty and potential risk to the BAWSCA agencies. The three components were:
    1. Development of outdoor water use budgets in a manner that incorporates landscape area, local climate, and new satellite imagery data.
    2. Commercial, Industrial, and Institutional water use performance measures.
    3. Water loss requirements.
- Organized an Advanced Metering Infrastructure symposium to enable information exchange, including case studies, implementation strategies, and data analysis techniques.

- Initiated a regional CII audit pilot program, which BAWSCA aims to complete in 2021.[30]
- Implemented a regional program for water loss control to help BAWSCA agencies comply with regulatory requirements and implement cost-effective water loss interventions.
- Engaged with the SFPUC to audit meter testing and calibration practices for SFPUC's meters at BAWSCA agency turnouts.

Finally, BAWSCA's Demand Study developed water demand and conservation projections through 2045 for each BAWSCA agency. These projects are designed to provide valuable insights on long-term water demand patterns and conservation savings potential to support regional efforts, such as implementation of BAWSCA's Long-Term Reliable Water Supply Strategy.

As described in Section 4.2, Burlingame's 2021 Demand Management Decision Support System Model (DSS Model) estimates projected water demands and quantifies passive and active conservation water savings potential. As discussed in Section 4.6, the DSS Model projections demonstrate that per capita indoor residential potable water use within Burlingame is expected to be below the indoor use standards presented in the efficiency legislation.

[30] Efforts on the CII audit pilot program stalled in March 2020 due to the COVID-19 pandemic and related shelter-in-place orders.

10. PLAN ADOPTION AND SUBMITTAL

Preparation of the Urban Water Management Plan (UWMP) and the Water Shortage Contingency Plan (WSCP) began in June 2020 for completion in July 2021, with notifications and interactions between stakeholders as discussed further below.

10.1 Notification of UWMP Preparation

☑ ***CWC § 10621 (b)***

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

On February 17, 2021, the City of Burlingame (City or Burlingame) sent a letter to 51 recipients from 26 agencies, including the San Francisco Public Utilities Commission (SFPUC), Bay Area Water Supply and Conservation Agency (BAWSCA), each BAWSCA member agency, San Mateo County, and other local agencies informing them that Burlingame was in the process of updating its UWMP and WSCP and soliciting their input in the update process. A listed of the entities contacted is provided in Appendix A. The letter was sent more than 60 days before the public hearing as required by code. A sample outreach letter is included in Appendix A.

10.2 Notification of Public Hearing

☑ ***CWC § 10642***

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

10.2.1 Notice to Cities and Counties

On August 9, 2021, Burlingame sent a letter to each of the above mentioned entities informing them of the locations the Public Review Draft 2020 UWMP and the updated WSCP would be available for review and welcoming their input and comments on the document. The Public Review Draft 2020 UWMP and the WSCP was available for public review at the City Hall and on the City's website. The letter also informed the agencies that the UWMP and WSCP public hearing would be occurring at the City Council meeting on September 7, 2021. A sample copy of the notification letter is included in Appendix A.

10.2.2 Notice to the Public

On August 23, 2021 and August 30, 2021, Burlingame published a notice in the *San Mateo Daily Journal* informing the public that the 2020 UWMP and the WSCP would be available for public review at City Hall and on the City's website, consistent with requirements of California Government Code 6066. The notice also informed the public that the 2020 UWMP and WSCP public hearing would be held at the City Council meeting on September 7, 2021. Copies of the newspaper announcements are included in Appendix B.

10.3 Public Hearing and Adoption

☑ ***CWC § 10608.26***

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

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

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

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

As described above, Burlingame informed the public and the appropriate agencies of (1) its intent to prepare a UWMP and the associated WSCP, (2) where the UWMP and WSCP were available for public review, and (3) when the public hearing regarding the UWMP and WSCP would be held. All notifications were completed in compliance with the stipulations of Section 6066 of the Government Code.

As part of the public hearing, Burlingame provided the audience with information on compliance with the Senate Bill X7-7, including its baseline daily per capita water use, water use targets, implementation plan, and 2020 compliance.

This UWMP was adopted by Resolution No. 112-2021 by the City Council during its September 7, 2021 City Council meeting. The WSCP included as Appendix I was adopted by Resolution No. 113-2021 during the same meeting. Copies of the resolutions are included in Appendix K.

10.4 Plan Submittal

☑ ***CWC § 10621***

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

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

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

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

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

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

☑ ***CWC § 10635 (c)***

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

A copy of the adopted 2020 UWMP and associated WSCP will be provided to the Department of Water Resources (DWR), the California State Library and San Mateo County within 30 days of adoption. An electronic copy of the adopted 2020 UWMP will be submitted electronically to the DWR using the Water Use Efficiency Data online submittal tool.

Due to the City supplier's (San Francisco Public Utilities Commission) forecast for unprecedented multiple dry year water supply reductions, the City determined additional time was necessary to analyze the impacts, conduct public outreach and address concerns for the 2020 UWMP beyond the July 1, 2021 deadline. Notification to DWR was sent on June 28, 2021 of the intent to submit late (see Appendix L).

10.5 Public Availability

☑ ***CWC § 10645***

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

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

A copy of the adopted 2020 UWMP and associated WSCP will be available for public review in the Main Library at 480 Primrose Road during normal business hours and on the City's website within 30 days of filing the plan with DWR.

11. REFERENCES

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APPENDIX A
UWMP AGENCY NOTIFICATION LETTER

NOTIFICATION DISTRIBUTION LIST

Alameda County Water District

Bay Area Water Supply and Conservation Agency

California Water Service Company – Bear Gulch

California Water Service Company – Mid Peninsula District

California Water Service Company – South San Francisco District

City of Brisbane/ Guadalupe Valley Municipal Improvement District

City of Daly City

City of East Palo Alto

City of Foster City

City of Hayward

City of Menlo Park

City of Millbrae

City of Milpitas

City of Mountain View

City of Palo Alto

City of Redwood City

City of San Bruno

City of Santa Clara

City of Sunnyvale

Coastside County Water District

Mid-Peninsula Water District

North Coast County Water District

Purissima Hills Water District

San Francisco Public Utilities Commission

San Jose Municipal Water System

San Mateo County

Stanford University

Town of Hillsborough

Westborough Water District

The City of Burlingame

PUBLIC WORKS DEPARTMENT
TEL: (650) 558-7230
FAX: (650) 685-9310

CITY HALL - 501 PRIMROSE ROAD
BURLINGAME, CALIFORNIA 94010-3997
www.burlingame.org

CORPORATION YARD
TEL: (650) 558-7670
FAX: (650) 696-1598

February 17, 2021

Re: Notice of Preparation of Urban Water Management Plan and Water Shortage Contingency Plan– 2020 Update

Dear Water Suppliers,

The City of Burlingame is currently preparing its 2020 Urban Water Management Plan (UWMP) and associated Water Shortage Contingency Plan (WSCP). The Urban Water Management Planning Act (California Water Code §10608 and §10610–10656) requires the City of Burlingame to update its Urban Water Management Plan (UWMP) and associated Water Shortage Contingency Plan (WSCP) every 5 years. The City is currently reviewing its existing UWMP and associated WSCP, which were updated in 2016, and making revisions to the documents. The updated UWMP and WSCP are due by July 1, 2021. We invite your agency's participation in this revision process.

A draft of the 2020 UWMP and WSCP will be made available for public review and a public hearing will be scheduled in spring 2021. In the meantime, if you would like more information regarding the UWMP and WSCP, the schedule for updating these documents, or if you would like to participate in the preparation of the 2020 UWMP and WSCP, please contact Senior Civil Engineer Kevin Okada at:

City of Burlingame
501 Primrose Road
Burlingame, CA 94010
Phone: (650) 558-7230
Email: kokada@burlingame.org

Sincerely,

Kevin Okada, P.E.
Senior Civil Engineer

From:	PW/ENG-Kevin Okada
To:	leonard.ash@acwd.com; laura.hidas@acwd.com; jflanagan@ci.brisbane.ca.us; rbreault@ci.brisbane.ca.us; kjenkins@calwater.com; dsmithson@calwater.com; rmoilan@calwater.com; cbrennan@coastsidewater.org; mrogren@coastsidewater.org; gkrauss@dalycity.org; wdonnelly@dalycity.org; pheisinger@cityofepa.org; bzaro@cityofepa.org; alex.ameri@hayward-ca.gov; cheryl.munoz@hayward-ca.gov; pwillis@hillsborough.net; phlowe@menlopark.org; TammyR@midpeninsulawater.org; klim@ci.millbrae.ca.us; Bill Giang; tndah@ci.milpitas.ca.gov; Lisa.Au@mountainview.gov; acarr@nccwd.com; philw@purissimawater.org; watermanager@redwoodcity.org; jtan@sanbruno.ca.gov; Jeffrey.provenzano@sanjoseca.gov; gwelling@santaclaraca.gov; JuliaNN@stanford.edu; mnasser@sunnyvale.ca.gov; dbarrow@westboroughwater.com; sritchie@sfwater.org; aakastama@sfwater.org; striolo@sfwater.org; kfallaha@cityofepa.org; asmith@fostercity.org; ecooney@hillsborough.net; ctlamm@menlopark.org; rramirez@midpeninsulawater.org; Elizabeth.flegel@mountainview.gov; samv@purissimawater.org; jchapel@redwoodcity.org; MReinhardt@sanbruno.ca.gov; henry.louie@sanjoseca.gov; smehta@SantaClaraCA.gov; Bmanning@stanford.edu; rchinnakotla@sunnyvale.ca.gov; tfrancis@bawsca.org; nsandkulla@bawsca.org; karla.dailey@cityofpaloalto.org; lisa.bilir@cityofpaloalto.org; Jim Porter
Cc:	Tyler Colyer; PW/WATER-Tim McAuliffe; PW/ENG-Art Morimoto; PW/ENG-Jennifer Lee
Subject:	Rescheduled to September 7, 2021 - City of Burlingame - Notice of Public Hearing - 2020 Urban Water Management Plan & Water Shortage Contingency Plan
Date:	Monday, August 9, 2021 12:55:29 PM

Dear Water Suppliers,

Please find below the City of Burlingame's 2020 UWMP and WSCP Public Hearing Notice.

CITY OF BURLINGAME

PUBLIC HEARING NOTICE

UPDATE TO
2020 URBAN WATER MANAGEMENT PLAN
& WATER SHORTAGE CONTINGENCY PLAN

NOTICE IS HEREBY GIVEN that the City Council of the City of Burlingame will hold a Public Hearing on **September 7, 2021** to adopt an update to the Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) for 2021-2026. The City Council will conduct a public hearing regarding this adoption online at 7:00 p.m. Please visit the City's website at www.burlingame.org for the meeting link and password. Persons interested in this matter may attend the hearing online and comment on the plan or submit written comments prior to the meeting to publiccomment@burlingame.org. After the public hearing, the Council will consider adoption of the update to the UWMP and WSCP.

A draft of the UWMP & WSCP is available for review at the Burlingame Main Library located at 480 Primrose Road, Burlingame California, 94010 at City Hall Public Works Department located at 501 Primrose Road, Burlingame, California and on the City website at www.burlingame.org/water. For additional information, please contact Kevin Okada P.E. at 650 558-7230.

Best regards,

Kevin Okada P.E.
Senior Civil Engineer
City of Burlingame

APPENDIX B
UWMP PUBLIC NOTIFICATION

AFFIDAVIT OF PUBLICATION
SAN MATEO DAILY JOURNAL

STATE OF CALIFORNIA
County of San Mateo

The undersigned declares: That at all times hereinafter mentioned, affiant was a permanent resident of the United States, over the age of eighteen years old, and was at and during all said times. The Office Manager of the San Mateo Daily Journal, a newspaper published daily in the County of San Mateo, State of California. The notice mentioned was set in type no smaller than nonpareil and was preceded with words printed in black face type not smaller than size 6, describing and expressing in general terms, the purpose and character of the notice intended to be given; that the

PUBLIC NOTICE

CITY OF BURLINGAME

Of which the annexed is a printed copy was published and printed in said newspaper on the 23rd Day of August 2021 and on the 30th Day of August 2021.

I declare under penalty of perjury that the foregoing is true and correct.

JP Uganiza

Dated at San Mateo, California,
this 23rd day of AUG. 2021.

CITY OF BURLINGAME

PUBLIC HEARING NOTICE

UPDATE TO 2020 URBAN WATER MANAGEMENT PLAN & WATER SHORTAGE CONTINGENCY PLAN

NOTICE IS HEREBY GIVEN that the City Council of the City of Burlingame will hold a Public Hearing on **September 7, 2021** to adopt an update to the Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) for 2021-2026.

The City Council will receive testimony on the proposed ordinance from all interested persons who attend the Zoom Webinar. Members of the public may view the meeting by logging into the Zoom Webinar with the following information:

To access the meeting by computer:

Go to: www.zoom.us/join
Meeting ID: 833 7510 1008
Passcode: 690745

To access the meeting by phone:

Dial 1-669-900-6833
Meeting ID: 833 7510 1008
Passcode: 690745

The login information will also be included within the Council agenda published on www.burlingame.org.

Members of the public may submit public comment for this item by emailing publiccomment@burlingame.org. The City will also receive public comment live during the meeting.

After the public hearing, the Council will consider adoption of the update to the UWMP and WSCP.

To request accommodations related to participation in the meeting please contact the City Clerk at mhasselshearer@burlingame.org or at (650) 558-7203.

A draft of the UWMP & WSCP will be available for review at the Burlingame Main Library located at 480 Primrose Road, Burlingame California, 94010 and on the City website at www.burlingame.org/water . For additional information, please contact Kevin Okada, Senior Civil Engineer at (650) 558-7230.

Published in the Daily Journal on 08/23/21 and 08/30/21.

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City of Burlingame
City Clerk
501 Primrose Road
BURLINGAME, CA 94010

Customer: 11111463-000
Phone: (650)558-7230
Date: 08/23/21
CITY Project#: N/A

Date	Reference	Project Name	Runs	Total
08/23/21	Inv116338929	NOTICE OF UWMP/WSCP	2	$480
		Published 8/23, 8/30		

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Total Due:	$480.00

Current:	1-30:	31-60:	61-90:	91+

APPENDIX C
COMPLETED UWMP CHECKLIST

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
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	Section 1.6
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 and 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	Section 1.3, Section 2.5.3, Section 10.1,
x	x	Section 2.6.2	10642	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan and contingency plan.	Plan Preparation	Section 2.2.4 and Section 10.2.2

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
x		Section 2.6, Section 6.1	10631(h)	Retail suppliers will include documentation that they have provided their wholesale supplier(s) - if any - with water use projections from that source.	System Supplies	Section 2.2.2 and Table 2-3
	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	Chapter 3
x	x	Section 3.3	10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 3.3 and Table 3-4
x	x	Section 3.4	10631(a)	Provide population projections for 2025, 2030, 2035, 2040 and optionally 2045.	System Description	Section 3.1.1 and 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	Section 3.1, Table 3-2, and Table 3-3
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 3.1.1 and Table 3-4
x	x	Section 3.5	10631(a)	Describe the land uses within the service area.	System Description	Section 3.2

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
x	x	Section 4.2	10631(d)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Section 4.1, Section 4.2, Table 4-2, and Table 4-4
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 4.1.3 and Table 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 4.2.4 and Table 4-7
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 4.2.4
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 4.1.3 and 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 4.2.3 and 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 4.4
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	Chapter 5

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
x		Chapter 5	10608.24(a)	Retail suppliers shall meet their water use target by December 31, 2020.	Baselines and Targets	Section 5.4 and Table 5-3
	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	Section 5.4 and Table 5-3
x		Section 5.5	10608.22	Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5-year baseline. This does not apply if the suppliers base GPCD is at or below 100.	Baselines and Targets	Section 5.3 and Table 5-2
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	Appendix D
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 7.1.1 and Section 7.1.2

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
x	x	Sections 6.1	10631(b)(1)	Provide a discussion of anticipated supply availability under a normal, single dry year, and a drought lasting five years, as well as more frequent and severe periods of drought, *including changes in supply due to climate change.*	System Supplies	Section 6.11.1 and Section 7.1.1.3
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	Section 6.9
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 6.10, Table 6-9 and Table 6-10
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 and Table 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	N/A
x	x	Section 6.2.2	10631(b)(4)(B)	Describe the groundwater basin.	System Supplies	Section 6.2.1

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
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	N/A
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	N/A
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	N/A
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

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
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 6.5.3 and Table 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 6.5.5 and Table 6-7
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 6.5.4, Table 6-5 and Table 6-6
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 6.5.5
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 6.5.5
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 6.5.2 and Table 6-3

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
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 6.9 and Table 6-8
x	x	Section 6.4 and Appendix O	10631.2(a)	The UWMP must include energy information, as stated in the code, that a supplier can readily obtain.	System Suppliers, Energy Intensity	Section 6.12 and Table 6-11
x	x	Section 7.2	10634	Provide information on the quality of existing sources of water available to the supplier and the manner in which water quality affects water management strategies and supply reliability	Water Supply Reliability Assessment	Section 7.1.1.3
x	x	Section 7.2.4	10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water Supply Reliability Assessment	Section 7.1.4
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 7.1.3

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
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 7.2
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 7.2.1
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 7.2.2
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 7.2.3
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 7.2.1
x	x	Chapter 8	10632(a)	Provide a water shortage contingency plan (WSCP) with specified elements below.	Water Shortage Contingency Planning	Appendix I
x	x	Chapter 8	10632(a)(1)	Provide the analysis of water supply reliability (from Chapter 7 of Guidebook) in the WSCP	Water Shortage Contingency Planning	Appendix (Chapter 2)

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
x	x	Section 8.10	10632(a)(10)	Describe reevaluation and improvement procedures for monitoring and evaluation the water shortage contingency plan to ensure risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented.	Water Shortage Contingency Planning	Appendix I (Chapter 4, Chapter 12)
x	x	Section 8.2	10632(a)(2)(A)	Provide the written decision- making process and other methods that the supplier will use each year to determine its water reliability.	Water Shortage Contingency Planning	Appendix I (Chapter 4)
x	x	Section 8.2	10632(a)(2)(B)	Provide data and methodology to evaluate the supplier's water reliability for the current year and one dry year pursuant to factors in the code.	Water Shortage Contingency Planning	Appendix I (Chapter 4)
x	x	Section 8.3	10632(a)(3)(A)	Define six standard water shortage levels of 10, 20, 30, 40, 50 percent shortage and greater than 50 percent shortage. These levels shall be based on supply conditions, including percent reductions in supply, changes in groundwater levels, changes in surface elevation, or other conditions. The shortage levels shall also apply to a catastrophic interruption of supply.	Water Shortage Contingency Planning	Appendix I (Chapter 5)
x	x	Section 8.3	10632(a)(3)(B)	Suppliers with an existing water shortage contingency plan that uses different water shortage levels must cross reference their categories with the six standard categories.	Water Shortage Contingency Planning	Appendix I (Chapter 5)

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
x	x	Section 8.4	10632(a)(4)(A)	Suppliers with water shortage contingency plans that align with the defined shortage levels must specify locally appropriate supply augmentation actions.	Water Shortage Contingency Planning	Appendix I (Section 6.2)
x	x	Section 8.4	10632(a)(4)(B)	Specify locally appropriate demand reduction actions to adequately respond to shortages.	Water Shortage Contingency Planning	Appendix I (Section 6.1)
x	x	Section 8.4	10632(a)(4)(C)	Specify locally appropriate operational changes.	Water Shortage Contingency Planning	Appendix I (Section 6.3)
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	Appendix I (Section 6.4)
x	x	Section 8.4	10632(a)(4)(E)	Estimate the extent to which the gap between supplies and demand will be reduced by implementation of the action.	Water Shortage Contingency Planning	Appendix I (Section 6.6)
x	x	Section 8.4.6	10632.5	The plan shall include a seismic risk assessment and mitigation plan.	Water Shortage Contingency Plan	Appendix I (Section 6.7)
x	x	Section 8.5	10632(a)(5)(A)	Suppliers must describe that they will inform customers, the public and others regarding any current or predicted water shortages.	Water Shortage Contingency Planning	Appendix I (Chapter 7)

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
x	x	Section 8.5 and 8.6	10632(a)(5)(B) 10632(a)(5)(C)	Suppliers must describe that they will inform customers, the public and others regarding any shortage response actions triggered or anticipated to be triggered and other relevant communications.	Water Shortage Contingency Planning	Appendix I (Chapter 7)
x		Section 8.6	10632(a)(6)	Retail supplier must describe how it will ensure compliance with and enforce provisions of the WSCP.	Water Shortage Contingency Planning	Appendix I (Chapter 8)
x	x	Section 8.7	10632(a)(7)(A)	Describe the legal authority that empowers the supplier to enforce shortage response actions.	Water Shortage Contingency Planning	Appendix I (Chapter 9)
x	x	Section 8.7	10632(a)(7)(B)	Provide a statement that the supplier will declare a water shortage emergency Water Code Chapter 3.	Water Shortage Contingency Planning	Appendix I (Section 7.1)
x	x	Section 8.7	10632(a)(7)(C)	Provide a statement that the supplier will coordinate with any city or county within which it provides water for the possible proclamation of a local emergency.	Water Shortage Contingency Planning	Appendix I (Chapter 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	Appendix I (Chapter 10)
x	x	Section 8.8	10632(a)(8)(B)	Provide a description of mitigation actions needed to address revenue reductions and expense increases associated with activated shortage response actions.	Water Shortage Contingency Planning	Appendix I (Chapter 10)
x		Section 8.8	10632(a)(8)(C)	Retail suppliers must describe the cost of compliance with Water Code Chapter 3.3: Excessive Residential Water Use During Drought	Water Shortage Contingency Planning	Appendix I (Chapter 10)

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
x		Section 8.9	10632(a)(9)	Retail suppliers must describe the monitoring and reporting requirements and procedures that ensure appropriate data is collected, tracked, and analyzed for purposes of monitoring customer compliance.	Water Shortage Contingency Planning	Appendix I (Chapter 11)
x		Section 8.11	10632(b)	Analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas.	Water Shortage Contingency Planning	Appendix I (Chapter 13)
x	x	Sections 8.12 and 10.4	10635(c)	Provide supporting documentation that Water Shortage Contingency Plan has been, or will be, provided to any city or county within which it provides water, no later than 30 days after the submission of the plan to DWR.	Plan Adoption, Submittal, and Implementation	Appendix I (Chapter 14)
x	x	Section 8.14	10632(c)	Make available the Water Shortage Contingency Plan to customers and any city or county where it provides water within 30 after adopted the plan.	Water Shortage Contingency Planning	Appendix I (Chapter 14)
	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

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
x		Sections 9.2 and 9.3	10631(e)(1)	Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand Management Measures	Section 9.1, Section 9.2, and Section 9.3
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 10.1
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 10.2.1

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
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 10.4
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	N/A

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
x	x	Section 10.7.2	10644(b)	If revised, submit a copy of the water shortage contingency plan to DWR within 30 days of adoption.	Plan Adoption, Submittal, and Implementation	Section 10.4

APPENDIX D
SBX7-7 COMPLIANCE TABLES

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:	

SB X7-7 Table 3: 2020 Service Area Population	
2020 Compliance Year Population	
2020	32,407
NOTES:	

SB X7-7 Table 4: 2020 Gross Water Use

Compliance Year 2020	2020 Volume Into Distribution System *This column will remain blank until SB X7-7 Table 4-A is completed.*	2020 Deductions					2020 Gross Water Use
		Exported Water *	Change in Dist. System Storage* (+/-)	Indirect Recycled Water *This column will remain blank until SB X7-7 Table 4-B is completed.*	Water Delivered for Agricultural Use*	Process Water *This column will remain blank until SB X7-7 Table 4-D is completed.*	
	1,271			-		-	**1,271**

* **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 5: 2020 Gallons Per Capita Per Day (GPCD)		
2020 Gross Water ***Fm SB X7-7 Table 4***	**2020 Population** ***Fm SB X7-7 Table 3***	**2020 GPCD**
1,271	32,407	**107**

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] *(Adjusted if applicable)*		
	Extraordinary Events[1]	Weather Normalization[1]	Economic Adjustment[1]				
107	-	-	-	-	107	135	**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:

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 *Contact DWR for these tables*
☐	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 GPCD	2020 Target GPCD
169	135
NOTES:	

SB X7-7 Table 7-F: Confirm Minimum Reduction for 2020 Target			
5 Year Baseline GPCD *From SB X7-7 Table 5*	Maximum 2020 Target*	Calculated 2020 Target *Fm Appropriate Target Table*	Confirmed 2020 Target
165	156	135	135
** Maximum 2020 Target is 95% of the 5 Year Baseline GPCD*			
NOTES:			

APPENDIX E
SFPUC AND BAWSCA COMMON LANGUAGE FOR 2020 UWMPS

Draft Common Language for BAWSCA Member Agencies' 2020 UWMPs

Tier One Drought Allocations

In July 2009, San Francisco and its Wholesale Customers in Alameda County, Santa Clara County, and San Mateo County (Wholesale Customers) adopted the Water Supply Agreement (WSA), which includes a Water Shortage Allocation Plan (WSAP) that describes the method for allocating water from the Regional Water System (RWS) between Retail and Wholesale Customers during system-wide shortages of 20 percent or less. The WSAP, also known as the Tier One Plan, was amended in the 2018 Amended and Restated WSA.

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

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

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

As amended in 2018, the Tier One Plan requires Retail Customers to conserve a minimum of 5% during droughts. If Retail Customer demands are lower than the Retail Customer allocation (resulting in a "positive allocation" to Retail[1]) then the excess percentage would be re-allocated to the Wholesale Customers' share. The additional water conserved by Retail Customers up to the minimum 5% level is deemed to remain in storage for allocation in future successive dry years.

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

The Tier One Plan applies only when the SFPUC determines that a system-wide water shortage exists and issues a declaration of a water shortage emergency under California Water Code

[1] See Water Supply Agreement, Water Shortage Allocation Plan (Attachment H), Section 2.1.

Section 350. Separate from a declaration of a water shortage emergency, the SFPUC may opt to request voluntary cutbacks from its Retail and Wholesale Customers to achieve necessary water use reductions during drought periods.

Tier Two Drought Allocations

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

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

The water made available to the Wholesale Customers collectively will be allocated among them in proportion to each Wholesale Customer's Allocation Basis, expressed in millions of gallons per day (mgd), which in turn is the weighted average of two components. The first component is the Wholesale Customer's Individual Supply Guarantee, as stated in the WSA, and is fixed. The second component, the Base/Seasonal Component, is variable and is calculated using the monthly water use for three consecutive years prior to the onset of the drought for each of the Wholesale Customers for all available water supplies. The second component is accorded twice the weight of the first, fixed component in calculating the Allocation Basis. Minor adjustments to the Allocation Basis are then made to ensure a minimum cutback level, a maximum cutback level, and a sufficient supply for certain Wholesale Customers.

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

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

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

Individual Supply Guarantee

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

[Name of Agency's] ISG is _______ mgd.

2028 SFPUC Decisions (formerly 2018 SFPUC Decisions)
[Note: This section is intended to be optional language that individual BAWSCA member agencies may use.]

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

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

Events since 2009 made it difficult for the SFPUC to conduct the necessary water supply planning and CEQA analysis required to make these three decisions before 2018. Therefore, in the 2018 Amended and Restated WSA, the decisions were deferred for 10 years to 2028.

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

Reliability of the Regional Water System

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

The SFPUC's LOS Goals and Objectives related to water supply are:

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

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Factors Impacting Supply Reliability

<u>Adoption of the 2018 Bay-Delta Plan Amendment</u>

In December 2018, the State Water Resources Control Board (SWRCB) adopted amendments to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan Amendment) to establish water quality objectives to maintain the health of the Bay-Delta ecosystem. The SWRCB is required by law to regularly review this plan. The adopted Bay-Delta Plan Amendment was developed with the stated goal of increasing salmonid populations in three San Joaquin River tributaries (the Stanislaus, Merced, and Tuolumne Rivers) and the Bay-Delta. The Bay-Delta Plan Amendment requires the release of 30-50% of the "unimpaired flow"[2] on the three tributaries from February through June in every year type. In SFPUC modeling of the new flow standard, it is assumed that the required release is 40% of unimpaired flow.

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

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

change. As the region faces future challenges – both known and unknown – the SFPUC is considering this suite of diverse non-traditional supplies and leveraging regional partnerships to meet Retail and Wholesale Customer needs through 2045.

The SWRCB has stated that it intends to implement the Bay-Delta Plan Amendment on the Tuolumne River by the year 2022, assuming all required approvals are obtained by that time. But implementation of the Plan Amendment is uncertain for multiple reasons.

First, since adoption of the Bay-Delta Plan Amendment, over a dozen lawsuits have been filed in both state and federal courts, challenging the SWRCB's adoption of the Bay-Delta Plan Amendment, including a legal challenge filed by the federal government, at the request of the U.S. Department of Interior, Bureau of Reclamation. This litigation is in the early stages and there have been no dispositive court rulings as of this date.

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

Third, in recognition of the obstacles to implementation of the Bay-Delta Plan Amendment, the SWRCB Resolution No. 2018-0059 adopting the Bay-Delta Plan Amendment directed staff to help complete a "Delta watershed-wide agreement, including potential flow measures for the Tuolumne River" by March 1, 2019, and to incorporate such agreements as an "alternative" for a future amendment to the Bay-Delta Plan to be presented to the SWRCB "as early as possible after December 1, 2019." In accordance with the SWRCB's instruction, on March 1, 2019, SFPUC, in partnership with other key stakeholders, submitted a proposed project description for the Tuolumne River that could be the basis for a voluntary substitute agreement with the SWRCB ("March 1st Proposed Voluntary Agreement"). On March 26, 2019, the Commission adopted Resolution No. 19-0057 to support the SFPUC's participation in the Voluntary Agreement negotiation process. To date, those negotiations are ongoing under the California Natural Resources Agency and the leadership of the Newsom administration.[3]

Water Supply – All Year Types

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

- Tuolumne River watershed
- Alameda Creek watershed

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

- San Mateo County watersheds

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

WSIP Dry Year Water Supply Projects

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

- **Calaveras Dam Replacement Project**

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

- **Alameda Creek Recapture Project**

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

- **Lower Crystal Springs Dam Improvements**

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

- **Regional Groundwater Storage and Recovery Project**

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

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

- **2 mgd Dry-year Water Transfer**

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

In order to achieve its target of meeting at least 80 percent of its customer demand during droughts with a system demand of 265 mgd, the SFPUC must successfully implement the dry-year water supply projects included in the WSIP.

Furthermore, the permitting obligations for the Calaveras Dam Replacement Project and the Lower Crystal Springs Dam Improvements include a combined commitment of 12.8 mgd for instream flows on average. When this is reduced for an assumed Alameda Creek Recapture Project recovery of 9.3 mgd, the net loss of water supply is 3.5 mgd.

Alternative Water Supply Planning Program

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

1. Offset instream flow needs and meet regulatory requirements
2. Meet existing obligations to existing permanent customers
3. Make interruptible customers permanent
4. Meet increased demands of existing and interruptible customers

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

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

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

In addition to the Daly City Recycled Water Expansion project[4], which was a potential project identified in the 2015 UWMP and had committed funding at that time, the SFPUC has taken action to fund the study of potential additional water supply projects. Capital projects under consideration to develop additional water supplies include surface water storage expansion, recycled water expansion, water transfers, desalination, and potable reuse. A more detailed list and descriptions of these efforts are provided below.

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

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

  This project can produce up to 3 mgd of tertiary recycled water during the irrigation season (~7 months). On an average annual basis, this is equivalent to 1.25 mgd or 1,400 acre-feet per year. The project is envisioned to provide recycled water to 13 cemeteries and other smaller irrigation customers, offsetting existing groundwater pumping from the South Westside Groundwater Basin; this will free up groundwater, enhancing the reliability of the Basin. The project is a regional partnership between the SFPUC and Daly City. The irrigation customers are located largely within California Water Service's (Cal Water's) service area. RWS customers will benefit from the increased reliability of the South Westside Basin for additional drinking water supply during droughts. In this way, this project supports the GSR Project, which is under construction.

[4] While this potential project was identified in the 2015 UWMP, it has since been approved by Daly City following environmental review and has a higher likelihood of being implemented.

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

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

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

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

- **Los Vaqueros Reservoir Expansion** (Regional, Dry Year Supply)

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

  - **Conveyance Alternatives:** The SFPUC is considering two main pathways to move water from storage in a prospective LVE Project to the SFPUC's service area, either directly to RWS facilities or indirectly via an exchange with partner agencies. The SFPUC is evaluating potential alignments for conveyance.
  - **Bay Area Regional Reliability Shared Water Access Program (BARR SWAP):** As part of the BARR Partnership, a consortium of 8 Bay Area water utilities (including ACWD, BAWSCA, CCWD, EBMUD, Marin Municipal Water District (MMWD), SFPUC, Valley Water, and Zone 7 Water Agency) are exploring opportunities to move water across the region as efficiently as possible, particularly during times of drought and emergencies. The BARR agencies are proposing two separate pilot projects in 2020-2021 through the Shared Water Access Program (SWAP) to test conveyance pathways and identify potential hurdles to better prepare for sharing water during a future drought or emergency. A strategy report identifying opportunities and considerations will accompany these pilot transfers and will be completed in 2021.

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

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

- **Calaveras Reservoir Expansion** (Regional, Dry Year Supply)

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

- **Groundwater Banking**

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

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

- **Inter-Basin Collaborations**

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

  As is the case with Groundwater Banking, feasibility of this option is included in the proposed Tuolumne River Voluntary Agreement.

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

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

Projected SFPUC Regional Water System Supply Reliability

The SFPUC will provide tables presenting the projected RWS supply reliability under normal, single dry year, and multiple dry year scenarios.

Climate Change

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

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

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

Bay Area Integrated Regional Water Management Plan

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

Summary of BAIRWMP Climate Change Vulnerability Assessment

Vulnerability Areas	General Overview of Vulnerabilities
Water Demand	**Urban and Agricultural Water Demand** – Changes to hydrology in the Region as a result of climate change could lead to changes in total water demand and use patterns. Increased irrigation (outdoor landscape or agricultural) is anticipated to occur with temperature rise, increased evaporative losses due to warmer temperature, and a longer growing season. Water treatment and distribution systems are most vulnerable to increases in maximum day demand.
Water Supply	**Imported Water** – Imported water derived from the Sierra Nevada sources and Delta diversions provide 66 percent of the water resources available to the Region. Potential impacts on the availability of these sources resulting from climate change directly affect the amount of imported water supply delivered to the Region. **Regional Surface Water** – Although future projections suggest that small changes in total annual precipitation over the Region will not change much, there may be changes to when precipitation occurs with reductions in the spring and more intense rainfall in the winter. **Regional Groundwater** – Changes in local hydrology could affect natural recharge to the local groundwater aquifers and the quantity of groundwater that could be pumped sustainably over the long-term in some areas. Decreased inflow from more flashy or more intense runoff, increased evaporative losses and warmer and shorter winter seasons can alter natural recharge of groundwater. Salinity intrusion into coastal groundwater aquifers due to sea-level rise could interfere with local groundwater uses. Furthermore, additional reductions in imported water supplies would lead to less imported water available for managed recharge of local groundwater basins and potentially more groundwater pumping in lieu of imported water availability.
Water Quality	**Imported Water** – For sources derived from the Delta, sea-level rise could result in increases in chloride and bromide (a disinfection by-product (DBP) precursor that is also a component of sea water),

Vulnerability Areas	General Overview of Vulnerabilities
	potentially requiring changes in treatment for drinking water. Increased temperature could result in an increase in algal blooms, taste and odor events, and a general increase in DBP formation **Regional Surface Water** – Increased temperature could result in lower dissolved oxygen in streams and prolong thermocline stratification in lakes and reservoirs forming anoxic bottom conditions and algal blooms. Decrease in annual precipitation could result in higher concentrations of contaminants in streams during droughts or in association with flushing rain events. Increased wildfire risk and flashier or more intense storms could increase turbidity loads for water treatment. **Regional Groundwater** – Sea-level rise could result in increases in chlorides and bromide for some coastal groundwater basins in the Region. Water quality changes in imported water used for recharge could also impact groundwater quality.
Sea-Level Rise	Sea-level rise is additive to tidal range, storm surges, stream flows, and wind waves, which together will increase the potential for higher total water levels, overtopping, and erosion. Much of the bay shoreline is comprised of low-lying diked baylands which are already vulnerable to flooding. In addition to rising mean sea level, continued subsidence due to tectonic activity will increase the rate of relative sea-level rise. As sea-level rise increases, both the frequency and consequences of coastal storm events, and the cost of damage to the built and natural environment, will increase. Existing coastal armoring (including levees, breakwaters, and other structures) is likely to be insufficient to protect against projected sea-level rise. Crest elevations of structures will have to be raised or structures relocated to reduce hazards from higher total water levels and larger waves.
Flooding	Climate change projections are not sensitive enough to assess localized flooding, but the general expectation is that more intense storms would occur thereby leading to more frequent, longer and deeper flooding. Changes to precipitation regimes may increase flooding. Elevated Bay elevations due to sea-level rise will increase backwater effects exacerbating the effect of fluvial floods and storm drain backwater flooding.

Vulnerability Areas	General Overview of Vulnerabilities
Ecosystem and Habitat	Changes in the seasonal patterns of temperature, precipitation, and fire due to climate change can dramatically alter ecosystems that provide habitats for California's native species. These impacts can result in species loss, increased invasive species ranges, loss of ecosystem functions, and changes in vegetation growing ranges. Reduced rain and changes in the seasonal distribution of rainfall may alter timing of low flows in streams and rivers, which in turn would have consequences for aquatic ecosystems. Changes in rainfall patterns and air temperature may affect water temperatures, potentially affecting coldwater aquatic species. Bay Area ecosystems and habitat provide important ecosystem services, such as: carbon storage, enhanced water supply and quality, flood protection, food and fiber production. Climate change is expected to substantially change several of these services. The region provides substantial aquatic and habitat-related recreational opportunities, including: fishing, wildlife viewing, and wine industry tourism (a significant asset to the region) that may be at risk due to climate change effects.
Hydropower	Currently, several agencies in the Region produce or rely on hydropower produced outside of the Region for a portion of their power needs. As the hydropower is produced in the Sierra, there may be changes in the future in the timing and amount of energy produced due to changes in the timing and amount of runoff as a result of climate change. Some hydropower is also produced within the region and could also be affected by changes in the timing and amount of runoff.

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

SFPUC Climate Change Studies

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

- With differing increases in temperature alone, the median annual runoff at Hetch Hetchy would decrease by 0.7-2.1% from present-day conditions by 2040 and by 2.6-10.2% from present-day by 2100. Adding differing decreases in precipitation on top of temperature increases, the median annual runoff at Hetch Hetchy would decrease by 7.6-8.6% from present-day conditions by 2040 and by 24.7-29.4% from present-day conditions by 2100.

- In critically dry years, these reductions in annual runoff at Hetch Hetchy would be significantly greater, with runoff decreasing up to 46.5% from present day conditions by 2100 utilizing the same climate change scenarios.
- In addition to the total change in runoff, there will be a shift in the annual distribution of runoff. Winter and early spring runoff would increase and late spring and summer runoff would decrease.
- Under all scenarios, snow accumulation would be reduced and snow would melt earlier in the spring, with significant reductions in maximum peak snow water equivalent under most scenarios.

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

Common Language for BAWSCA Member Agencies'

2020 UWMP Updates

BAWSCA

Description of BAWSCA

BAWSCA provides regional water reliability planning and conservation programming for the benefit of its 26 member agencies that purchase wholesale water supplies from the San Francisco Public Utilities Commission (SFPUC). Collectively, the BAWSCA member agencies deliver water to over 1.8 million residents and nearly 40,000 commercial, industrial and institutional accounts in Alameda, San Mateo and Santa Clara Counties.

BAWSCA also represents the collective interests of these wholesale water customers on all significant technical, financial, and policy matters related to the operation and improvement of the SFPUC's Regional Water System (RWS).

BAWSCA's role in the development of the 2020 Urban Water Management Plan (UWMP) updates is to work with its member agencies and the SFPUC to seek consistency among UWMP documents.

Regional Water Demand and Conservation Projections

In June 2020, BAWSCA completed the Regional Water Demand and Conservation Projections Report (Demand Study).[1] The goal of the Demand Study was to develop transparent, defensible, and uniform demand and conservation savings projections for each Wholesale Customer using a common methodology to support both regional and individual agency planning efforts and compliance with the new statewide water efficiency targets required by Assembly Bill (AB) 1668 and Senate Bill (SB) 606.

Through the Demand Study process, BAWSCA and the Wholesale Customers (1) quantified the total average-year water demand for each BAWSCA member agency through 2045, (2) quantified passive and active conservation water savings potential for each individual Wholesale Customer through 2045, and (3) identified 24 conservation programs with high water savings potential and/or member agency interest. Implementation of these conservation measures, along with passive conservation, is anticipated to yield an additional 37.3 MGD of water savings by 2045. Based on the revised water demand projections, the identified water conservation savings, increased development and use of other local supplies by the Wholesale Customers, and other actions, the collective purchases of the BAWSCA member agencies from the SFPUC are projected to stay below 184 MGD through 2045.

As part of the Demand Study, each Wholesale Customer was provided with a demand model that can be used to support ongoing demand and conservation planning efforts, including UWMP preparation.

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[1] Phase III Final Report: http://bawsca.org/uploads/pdf/BAWSCA_Regional_Water_Demand_and_Conservation%20Projections%20Report_Final.pdf

Long-Term Reliable Water Supply Strategy

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

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

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

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

Water Transfers. BAWSCA successfully facilitated two transfers of portions of Individual Supply Guarantee (ISG) between BAWSCA agencies in 2017 and 2018. Such transfers benefit all BAWSCA agencies by maximizing use of existing supplies. BAWSCA is currently working on an amendment to the Water Supply Agreement between the SFPUC and BAWSCA agencies to establish a mechanism by which member agencies that have an ISG may participate in expedited transfers of a portion of ISG and a portion of a Minimum Annual Purchase Requirement. In 2019, BAWSCA participated in a pilot water transfer that, while ultimately unsuccessful, surfaced important lessons learned and produced interagency agreements that will serve as a foundation for future transfers. BAWSCA is currently engaged in the Bay Area Regional Reliability Partnership[2] (BARR), a partnership among eight Bay Area water utilities (including the SFPUC, Alameda County Water District, BAWSCA, Contra Costa Water District, Santa Clara Valley Water District) to identify opportunities to move water across the region as efficiently as possible, particularly during times of drought and emergencies.

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

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

[2] https://www.bayareareliability.com/

Making Conservation a Way of Life Strategic Plan

Following the 2014-2016 drought, the State of California (State) developed the “Making Water Conservation a California Way of Life” framework to address the long-term water use efficiency requirements called for in executive orders issued by Governor Brown. In May of 2018, AB 1668 and SB 606 (collectively referred to as the efficiency legislation) went into effect, which built upon the executive orders implementing new urban water use objectives for urban retail water suppliers.

BAWSCA led its member agencies in a multi-year effort to develop and implement a strategy to meet these new legislative requirements. BAWSCA’s Making Conservation a Way of Life Strategic Plan (Strategic Plan) provided a detailed roadmap for member agencies to improve water efficiency. BAWSCA implementing the following elements of the Strategic Plan:

- Conducted an assessment of the agencies’ current practices and water industry best practices for three components of the efficiency legislation that, based on a preliminary review, present the greatest level of uncertainty and potential risk to the BAWSCA agencies. The three components were:
    1. Development of outdoor water use budgets in a manner that incorporates landscape area, local climate, and new satellite imagery data.
    2. Commercial, Industrial, and Institutional water use performance measures.
    3. Water loss requirements.
- Organized an Advanced Metering Infrastructure symposium to enable information exchange, including case studies, implementation strategies, and data analysis techniques.
- Initiated a regional CII audit pilot program, which BAWSCA aims to complete in 2021.[3]
- Implemented a regional program for water loss control to help BAWSCA agencies comply with regulatory requirements and implement cost-effective water loss interventions.
- Engaged with the SFPUC to audit meter testing and calibration practices for SFPUC’s meters at BAWSCA agency turnouts.

Finally, BAWSCA's Demand Study developed water demand and conservation projections through 2045 for each BAWSCA agency. These projects are designed to provide valuable insights on long-term water demand patterns and conservation savings potential to support regional efforts, such as implementation of BAWSCA’s Long-Term Reliable Water Supply Strategy.

[3] Efforts on the CII audit pilot program stalled in March 2020 due to the COVID 19 pandemic and related shelter-in-place orders.

Tier Two Drought Allocations

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

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

The water made available to the Wholesale Customers collectively will be allocated among them in proportion to each Wholesale Customer's Allocation Basis, expressed in millions of gallons per day (mgd), which in turn is the weighted average of two components. The first component is the Wholesale Customer's Individual Supply Guarantee, as stated in the WSA, and is fixed. The second component, the Base/Seasonal Component, is variable and is calculated using the monthly water use for three consecutive years prior to the onset of the drought for each of the Wholesale Customers for all available water supplies. The second component is accorded twice the weight of the first, fixed component in calculating the Allocation Basis. Minor adjustments to the Allocation Basis are then made to ensure a minimum cutback level, a maximum cutback level, and a sufficient supply for certain Wholesale Customers.

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

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

Per WSA Section 3.11, the Tier One and Tier Two Plans will be used to allocate water from the Regional Water System between Retail and Wholesale Customers during system-wide shortages of 20% or less. For Regional Water System shortages in excess of 20%, San Francisco shall (a) follow the Tier 1 Shortage Plan allocations up to the 20% reduction, (b) meet and discuss how to implement incremental reductions above 20% with the Wholesale Customers, and (c) make a final determination of allocations above the 20% reduction. After the SFPUC has made the final allocation decision, the Wholesale Customers shall be free to challenge the allocation on any applicable legal or equitable basis. For purposes of the 2020 UWMPs, for San Francisco Regional Water System (RWS) shortages in excess of 20%, the allocations among the Wholesale Customers is assumed to be equivalent among them and to equal the drought cutback to Wholesale Customer by the SFPUC.

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

SFPUC's Efforts to Develop of Alternative Water Supplies

With the adoption of the Bay-Delta Plan Phase 1 (Bay-Delta Plan) by the State Water Resources Control Board in December of 2018, coupled with the uncertainties associated with litigation and the development of Voluntary Agreements that, if successful, would provide an alternative to the 40% unimpaired flow requirement that is required by the Bay-Delta Plan, BAWSCA redoubled its efforts to ensure that the SFPUC took necessary action to develop alternative water supplies such that they would be in place to fill any potential gap in supply by implementation of the Bay-Delta Plan and that the SFPUC would be able to meet its legal and contractual obligations to its Wholesale Customers.

In 2019, BAWSCA held numerous meetings with the SFPUC encouraging them to develop a division within their organization whose chief mission was to spearhead alternative water supply development. On June 25, 2019, BAWSCA provided a written and oral statement to the Commissioners urging the SFPUC to focus on developing new sources of supply in a manner similar to how it addressed the implementation of the Water System Improvement Program (WSIP). BAWSCA urged that a new water supply program was called for, with clear objectives, persistent focus, a dedicated team, adequate funding, and a plan for successful execution. The SFPUC Commission supported BAWSCA's recommendation and directed staff to undertake such an approach.

In early 2020, the SFPUC began implementation of the Alternative Water Supply Planning Program (AWSP), a program designed to investigate and plan for new water supplies to address future long-term water supply reliability challenges and vulnerabilities on the RWS.

Included in the AWSP is a suite of diverse, non-traditional supply projects that, to a great degree, leverage regional partnerships and are designed to meet the water supply needs of the SFPUC Retail and Wholesale Customers through 2045. As of the most recent Alternative Water Supply Planning Quarterly Update, SFPUC has budgeted $264 million over the next ten years to fund water supply projects. BAWSCA is heavily engaged with the SFPUC on its AWSS efforts.

BAWSCA Conservation Programs

BAWSCA manages a Regional Water Conservation Program comprised of several programs and initiatives that support and augment member agencies' and customers' efforts to use water more efficiently. These efforts extend limited water supplies that are available to meet both current and future water needs; increase drought reliability of the existing water system; and save money for both the member agencies and their customers.

The implementation of the Regional Water Conservation Program builds upon both the Water Conservation Implementation Plan (WCIP, completed in September 2009) and the Regional Demand and Conservation Projections Project (Demand Study, completed in June of 2020). These efforts include both Core Programs (implemented regionally throughout the BAWSCA service area) and Subscription Programs (funded by individual member agencies that elect to participate and implement them within their respective service areas).

BAWSCA's Core Conservation Programs include organizing classes open to the public on topics such as water efficient landscape education and water-wise gardening, assistance related to automated metering infrastructure, and other associated programs that work to promote smart water use and practices. BAWSCA's Subscription Programs include numerous rebate programs, educational programs that can be offered to area schools, technical assistance to member agencies in evaluating water loss, and programs to train and certify contractors employed to install water efficient landscape. In total, BAWSCA offers 22 programs to its member agencies and that number continues to grow over time.

Each fiscal year, BAWSCA prepares an Annual Water Conservation Report that documents how all of BAWSCA's 26 member agencies have benefitted from the Core Conservation Programs. Additionally, the report highlights how all 26 member agencies participate in one or more of the Subscription Programs offered by BAWSCA, such as rebates, water loss management and large landscape audits. The Demand Study indicates that through a combination of active and passive conservation, 37.3 MGD will be conserved by BAWSCA's member agencies by 2045.

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7. Additional language requested by the Member Agencies

SFPUC's Decision to use With Bay-Delta Plan Scenario in UWMP Submittal Tables

The adoption of the Bay-Delta Plan Amendment may significantly impact the supply available from the RWS. SFPUC recognizes that the Bay-Delta Plan Amendment has been adopted and that, given that it is now state law, we must plan for a future in which it is fully implemented. SFPUC also acknowledges that the plan is not self-implementing and therefore does not automatically go into effect. SFPUC is currently pursuing a voluntary agreement as well as a lawsuit which would limit implementation of the Plan. With both of these processes occurring on an unknown timeline, SFPUC does not know at this time when the Bay-Delta Plan Amendment is likely to go into effect. As a result, it makes sense to conduct future supply modeling for a scenario that doesn't include implementation of the Bay-Delta Plan Amendment, as that represents a potential supply reliability scenario.

Because of the uncertainty surrounding implementation of the Bay-Delta Plan Amendment, the SFPUC conducted water service reliability assessment that includes: (1) a scenario in which the Bay-Delta Plan Amendment is fully implemented in 2023, and (2) a scenario that considers the SFPUC system's current situation without the Bay-Delta Plan Amendment. The two scenarios provide a bookend for the possible future scenarios regarding RWS supplies. The standardized tables associated with the SFPUC's UWMP contain the future scenario that assumes implementation of the Bay-Delta Plan Amendment starting in 2023.

Bay-Delta Plan Implementation Starting Year

Because of the uncertainty surrounding implementation of the Bay-Delta Plan Amendment, the water service reliability assessment presented in the SFPUC's draft UWMP looks at two future supply scenarios, both with and without implementation of the Bay-Delta Plan Amendment. Although the SWRCB has stated it intends to implement the Bay-Delta Plan Amendment on the Tuolumne River by the year 2022, given the current level of uncertainty, it is assumed for the purposes of the SFPUC's draft UWMP that the Bay-Delta Plan Amendment will be fully implemented starting in 2023.

SFPUC's Decision to Present Both Modeling Results in its UWMP

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

APPENDIX F
SFPUC REGIONAL WATER SYSTEM SUPPLY RELIABILITY AND BAWSCA TIER 2 DROUGHT IMPLEMENTATION SCENARIOS

- Memorandum on Updated Drought Cutbacks, dated February 18, 2021 with Attachment B, dated April 8, 2021
- UWMP 2020 Additional Modeling, dated March 30, 2021
- Updated Drought Allocations, dated April 1, 2021
- Memorandum on Regional Water System Supply Reliability and UWMP 2020, dated June 2, 2021

BAWSCA

Bay Area Water Supply & Conservation Agency

February 18, 2021

TO: BAWSCA Member Agencies

FROM: Danielle McPherson, Senior Water Resources Specialist
Tom Francis, Water Resources Manager

SUBJECT: San Francisco Regional Water System Supply Reliability for 2020 Urban Water Management Plans

The purpose of this memorandum is to provide updated drought allocations among the Member Agencies under the various scenarios provided in the San Francisco Public Utilities Commission (SFPUC) Regional Water System (RWS) Supply Reliability Letter dated January 22, 2021 and transmitted to the Member Agencies via email on January 25th ("Supply Reliability Letter", Attachment A). As presented and discussed at the February 12th BAWSCA Urban Water Management Plan (UWMP) Workshop, the Tier 2 Drought Allocation Plan was not designed for RWS shortages greater than 20 percent. As a result, the Tier 2 allocation tables shared with the Supply Reliability Letter showed unexpected and wide-ranging results between Member Agencies that should not be used for UWMP purposes.

As provided for in the 2018 Amended and Restated Water Supply Agreement (WSA), the SFPUC will honor new Tier 2 allocations agreed upon by all Member Agencies if an RWS shortage greater than 20 percent is declared. However, at this time, there is no method for allocating supplies under such significant cutbacks. Additionally, the time it would take to negotiate a modified Tier 2 plan to address those significant cutbacks would be extensive and greater than the timeline required for BAWSCA to provide your agency with numbers for input into your 2020 UWMP submittals.

For these reasons, BAWSCA is recommending that for the purpose of the 2020 UWMP updates, allocation of wholesale RWS supplies should be as follows:

1. When the average Wholesale Customers' RWS shortages are 10 percent or less, an equal percent reduction will be applied across all agencies. This is consistent with the existing Tier 2 requirement of a minimum 10 percent cutback in any Tier 2 application scenario.
2. When average Wholesale Customers' shortages are between 10 and 20 percent, the Tier 2 Drought Allocation Plan will be applied.
3. When the average Wholesale Customers' RWS shortages are greater than 20 percent, an equal percent reduction will be applied across all agencies.

Attachment B "Updated 2020 UWMP Drought Cutbacks" provides further detail, including recommended wholesale RWS allocation tables, for use in your agency's 2020 UWMP.

BAWSCA recognizes that this is not an ideal situation or method for allocation of available drought supplies. In the event of actual RWS shortages greater than 20 percent, the Member Agencies would have the opportunity to negotiate and agree upon a more nuanced and equitable approach. Such an approach would likely consider basic health and safety needs, the water needs to support critical institutions such as hospitals, and minimizing economic impacts on individual communities and the region.

Enclosed: Attachment A: Supply Reliability Letter
Attachment B: Updated 2020 UWMP Drought Cutbacks

cc: Nicole Sandkulla
Allison Schutte

San Francisco
Water Power Sewer
Services of the San Francisco Public Utilities Commission

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January 22, 2021

Danielle McPherson
Senior Water Resources Specialist
Bay Area Water Supply and Conservation Agency
155 Bovet Road, Suite 650
San Mateo, CA 94402

Dear Ms. McPherson,

Attached please find the information you requested on the Regional Water System's supply reliability for use in the Wholesale Customer's 2020 Urban Water Management Plan (UWMP) updates. The SFPUC has assessed the water supply reliability under the following planning scenarios:

- Projected supply reliability for year 2020 through 2045
- Projected single dry year and multiple dry year reliability for base year 2020, both with and without implementation of the Bay-Delta Plan Amendment
- Projected single dry year and multiple dry year reliability for base year 2025, both with and without implementation of the Bay-Delta Plan Amendment

The tables presented below assume full implementation of the Bay-Delta Plan Amendment will begin in 2023. All tables assume that the wholesale customers will purchase 184 mgd from the RWS through 2045. Assumptions about the status of the dry-year water supply projects included in the Water Supply Improvement Program (WSIP) are provided below in the table 'WSIP Project Assumptions'. The tables reflect instream flow requirements at San Mateo and Alameda Creeks, as described in the common language provided to BAWSCA separately.

Concerning allocation of supply during dry years, the Water Shortage Allocation Plan (WSAP) was utilized to allocate shortages between the SFPUC and the Wholesale Customers collectively. The WSAP implements a method for allocating water between the SFPUC retail customers and wholesale customers collectively which has been adopted by the Wholesale Customers per the July 2009 Water Supply Agreement between the City and County of

San Francisco and Wholesale Customers in Alameda County, San Mateo County, and Santa Clara County. The WSAP, also known as the Tier One Plan, was amended in the 2018 Amended and Restated Water Supply Agreement. The wholesale customers have adopted the Tier Two Plan, the second component of the WSAP, which allocates the collective wholesale customer share among each of the 26 wholesale customers.

Compared to the reliability projections that were provided previously for the 2015 UWMP update, the biggest difference in projected future deliveries is caused by the implementation of the Bay-Delta Plan Amendment. Given the uncertainty about the implementation of the Amendment (described further in the common language provided to BAWSCA), tables are included to show future projected supplies both with and without the Bay-Delta Plan Amendment.

It is our understanding that you will pass this information on to the Wholesale Customers. If you have any questions or need additional information, please do not hesitate to contact Sarah Triolo, at striolo@sfwater.org or (628) 230 0802.

Sincerely,

Paula Kehoe
Director of Water Resources

Table 1: WSIP Project Assumptions

	2020	2025 and Beyond
Calaveras Dam Replacement Project	Calaveras Reservoir partially refilled at spring 2020 level of 63,900 AF	Calaveras Reservoir fully refilled
Lower Crystal Springs Dam Improvements	Crystal Springs storage not restored	
Regional Groundwater Storage and Recovery (GSR) Project	GSR account partially filled at spring 2020 level of 23,500 AF; GSR recovery rate of 6.2 mgd	GSR account fully filled; GSR recovery rate of 6.2 mgd
Alameda Creek Recapture Project	Project not built	Project built
Dry-year Transfers	Not in effect	

Table 2: Projected Wholesale Supply from Regional Water System [For Table 6-9]:

Year	2020	2025	2030	2035	2040	2045
RWS Supply (mgd)	265	265	265	265	265	265
Wholesale Supply (mgd)	184	184	184	184	184	184

Table 3: Basis of Water Supply Data [For Table 7-1], 2020 Infrastructure Conditions With Bay Delta Plan

Year Type	Base Year	RWS Volume Available (mgd)	% of Average Supply	Wholesale Volume Available (mgd)	Notes on Calculation of Wholesale Supply
Average year	2020	265	100%	184	
Single dry year		238.5	90%	157.5	• At 10% shortage, wholesale allocation is 64%, or 152.6 mgd • Retail allocation is 36%, or 85.9 mgd • Retail allocations above 81 mgd are re-allocated to Wholesale Customers, per the 2018 WSA • 4.9 mgd added to wholesale allocation, bringing it to 157.5 mgd
Consecutive 1st Dry year		238.5	90%	157.5	• Same as above
Consecutive 2nd Dry year		212	80%	132.5	• At a 20% shortage, wholesale allocation is 62.5%, or 132.5 mgd • Retail allocation is 37.5%, or 79.5 mgd
Consecutive 3rd Dry year[1]		119.25	45%	74.5	• WSA does not define percentage split above a 20% shortage level • Assume same split as for a 20% shortage level, i.e. Wholesale Customers receive 62.5%
Consecutive 4th Dry year		119.25	45%	74.5	• Same as above
Consecutive 5th Dry year		119.25	45%	74.5	• Same as above

[1] Assuming this year represents 2023, when Bay Delta Plan Amendment would come into effect.

Table 4: Basis of Water Supply Data [For Table 7-1], 2020 Infrastructure Conditions Without Bay Delta Plan

Year Type	Base Year	RWS Volume Available (mgd)	% of Average Supply	Wholesale Volume Available (mgd)	Notes on Calculation of Wholesale Supply
Average year	2020	265	100%	184	
Single dry year		238.5	90%	157.5	• At 10% shortage, wholesale allocation is 64%, or 152.6 mgd • Retail allocation is 36%, or 85.9 mgd • Retail allocations above 81 mgd are re-allocated to Wholesale Customers, per the 2018 WSA • 4.9 mgd added to wholesale allocation, bringing it to 157.5 mgd
Consecutive 1st Dry year		238.5	90%	157.5	• Same as above
Consecutive 2nd Dry year		212	80%	132.5	• At a 20% shortage, wholesale allocation is 62.5%, or 132.5 mgd • Retail allocation is 37.5%, or 79.5 mgd
Consecutive 3rd Dry year		212	80%	132.5	• Same as above
Consecutive 4th Dry year		212	80%	132.5	• Same as above
Consecutive 5th Dry year		212	80%	132.5	• Same as above

Table 5: Basis of Water Supply Data [For Table 7-1], 2025 Infrastructure With Bay Delta Plan

Year Type	Base Year	RWS Volume Available (mgd)	% of Average Supply	Wholesale Volume Available (mgd)	Notes on Calculation of Wholesale Supply
Average year	2025	265	100%	184	
Single dry year		132.5	50%	82.8	• WSA does not define percentage split above a 20% shortage level • Assume same split as for a 20% shortage level, i.e. Wholesale Customers receive 62.5%
Consecutive 1st Dry year		132.5	50%	82.8	• Same as above
Consecutive 2nd Dry year		119.25	45%	74.5	• Same as above
Consecutive 3rd Dry year		119.25	45%	74.5	• Same as above
Consecutive 4th Dry year		119.25	45%	74.5	• Same as above
Consecutive 5th Dry year		119.25	45%	74.5	• Same as above

Table 6: Basis of Water Supply Data [For Table 7-1], 2025 Infrastructure Without Bay Delta Plan

Year Type	Base Year	RWS Volume Available (mgd)	% of Average Supply	Wholesale Volume Available (mgd)	Notes on Calculation of Wholesale Supply
Average year	2025	265	100%	184	
Single dry year		238.5	90%	157.5	• At 10% shortage, wholesale allocation is 64% • Retail allocation is 36%, or 85.9 mgd; retail allocations above 81 mgd are re-allocated to Wholesaler Customers, per the 2018 WSA • 4.9 mgd added to wholesale allocation, bringing it to 157.5 mgd
Consecutive 1st Dry year		238.5	90%	157.5	• Same as above
Consecutive 2nd Dry year		238.5	90%	157.5	• Same as above
Consecutive 3rd Dry year		238.5	90%	157.5	• Same as above
Consecutive 4th Dry year		212	80%	132.5	• At a 20% shortage, wholesale allocation is 62.5%, or 132.5 mgd • Retail allocation is 37.5%, or 79.5 mgd
Consecutive 5th Dry year		212	80%	132.5	• Same as above

Table 7: Projected Multiple Dry Years Wholesale Supply from RWS [For Table 7-4], With Bay Delta Plan

	2025	**2030**	**2035**	**2040**	**2045**
First year	82.8	82.8	82.8	82.8	82.8
Second year	74.5	74.5	74.5	74.5	74.5
Third year	74.5	74.5	74.5	74.5	74.5
Fourth year	74.5	74.5	74.5	74.5	74.5
Fifth year	74.5	74.5	74.5	74.5	74.5

Table 8: Projected Multiple Dry Years Wholesale Supply from RWS [For Table 7-4], Without Bay Delta Plan

	2025	**2030**	**2035**	**2040**	**2045**
First year	157.5	157.5	157.5	157.5	157.5
Second year	157.5	157.5	157.5	157.5	157.5
Third year	157.5	157.5	157.5	157.5	157.5
Fourth year	132.5	132.5	132.5	132.5	132.5
Fifth year	132.5	132.5	132.5	132.5	132.5

Table 9: Projected Regional Water System Supply for 5-Year Drought Risk Assessment [For Table 7-5], With Bay Delta Plan. This table assumes Bay Delta Plan comes into effect in 2023.

Year	**2021**	**2022**	**2023**	**2024**	**2025**
RWS Supply (mgd)	238.5	212	119.25	119.25	119.25
Wholesale Supply (mgd)	157.5	132.5	74.5	74.5	74.5

Table 10: Projected Regional Water System Supply for 5-Year Drought Risk Assessment [For Table 7-5], Without Bay Delta Plan

Year	**2021**	**2022**	**2023**	**2024**	**2025**
RWS Supply (mgd)	238.5	212	212	212	212
Wholesale Supply (mgd)	157.5	132.5	132.5	132.5	132.5

Attachment B: Updated 2020 UWMP Drought Cutbacks

The January 22, 2021, SFPUC Regional Water System (RWS) Supply Reliability Letter (Supply Reliability Letter) provides RWS supplies available to the Wholesale Customers under two scenarios: (1) With Bay-Delta Plan, and (2) Without Bay-Delta Plan. Your agency must choose which scenario to use for your agency's 2020 UWMP submittal tables. However, you may discuss both scenarios in the body of your agency's UWMP. The purpose of this attachment is to provide further detail about your agency's allocation of total RWS supplies available to the Wholesale Customers under both scenarios.

Data Sources for Projected RWS Purchases

Supply allocations are based on projected RWS purchases provided to BAWSCA by the Member Agencies. Following the completion of the Demand Study in June 2020, BAWSCA used the results to develop a table for each Member Agency listing possible supplies and total demand for 2025, 2030, 2035, 2040, and 2045. BAWSCA populated the tables with total demand after passive conservation and entered active conservation, as calculated in the agencies' DSS Model, as a source of supply. Multi-source agencies were asked to complete the table with supply projections, including from the RWS, to meet total demand. Single-source agencies were offered the opportunity to review the tables upon request. Because active conservation was treated as a source of supply, projected RWS purchases are after passive and active conservation.[1]

Water Management Representatives (WMRs) received a draft copy of all projected wholesale RWS purchase requests as part of the January 7, 2021 WMR meeting agenda packet and meeting slides. Agencies were asked to notify BAWSCA if changes were necessary regarding their purchase requests prior to BAWSCA sending those purchase requests to the SFPUC. Purchase requests were transmitted to the SFPUC via a letter dated January 15, 2021 for use in their 2020 UWMP efforts.

Note that the projected RWS purchases used by BAWSCA for fiscal years 2020-21 and for 2021-22 were provided to Christina Tang, BAWSCA's Finance Manager, by each Member Agency in January 2021. This annual reporting is part of the SFPUC's wholesale rate setting process. Member Agencies have provided BAWSCA with these projected purchases annually for the past 10 years.

UWMP Tables 7-1 and 7-5

UWMP Table 7-1 requests supply reliability for a normal year, a single dry year, and multiple (five) dry years. Tables 3, 4, 5, and 6 provided in the Supply Reliability Letter will help your agency complete UWMP Table 7-1. The Drought Risk Assessment (DRA) in UWMP Table 7-5 also requests a five-year drought sequence but specifies years 2021 through 2025. Supply Reliability Letter Tables 9 and 10 will help your agency complete UWMP Table 7-5.

The Supply Reliability Letter provides four scenarios to select from for completing UWMP Table 7-1. The Supply Reliability Letter Tables 3 (with Bay-Delta Plan) and 4 (without Bay-Delta Plan) use 2020 as the base year. Depending on which scenario you choose, these will be the basis for your agency's five-year DRA (UWMP Table 7-5). The Supply Reliability Letter Tables 5 (with Bay-Delta Plan) and 6 (without Bay-Delta Plan) use 2025 as the base year. Depending on which scenario you choose, these will be the basis for UWMP Tables 7-2 through 7-4.

[1] Projected RWS purchases are after conservation, except for Mountain View.

Attachment B: Updated 2020 UWMP Drought Cutbacks

Total RWS supplies available to the Wholesale Customers in the first through fifth consecutive dry years in Supply Reliability Letter Table 3 align with those in Table 9 of the same letter. Similarly, Supply Reliability Letter Table 4 aligns with Table 10 of the same letter.

Table A below provides a summary of the Member Agencies' RWS supply drought cutbacks under each of the four supply availability conditions and is intended to help you complete UWMP Tables 7-1and 7-5.

Table A: Wholesale Customer Drought Cutbacks Based on a Single Dry Year and Multiple Dry Years (Base Year 2020)

	(a)	(b)	(c)	(d)	(e)	(f)	(g)
(1)	Projected SF RWS Wholesale Purchases	132.2 MGD	138.6 MGD	140.8 MGD	142.5 MGD	144.3 MGD	146.0 MGD
(2)	Supply Available to the Wholesale Customers	Percent Cutback on Wholesale RWS Purchases					
		2020	**2021**	**2022**	**2023**	**2024**	**2025**
(3)	157.5 MGD	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(4)	132.5 MGD	0.0%	-4.4%	-5.9%	-7.0%	-8.2%	-9.3%
(5)	82.8 MGD	-37.4%	-40.3%	-41.2%	-41.9%	-42.6%	-43.3%
(6)	74.5 MGD	-43.7%	-46.3%	-47.1%	-47.7%	-48.4%	-49.0%

Table A, column (a), rows 3 through 6 lists total RWS supplies available to the Wholesale Customers as provided in the Supply Reliability Letter tables. Row 1 provides cumulative actual wholesale RWS purchases for 2020 and projected purchases for 2021 through 2025. Projected RWS purchases for years 2021 and 2022 were provided to Christina Tang, BAWSCA's Finance Manager, by the Member Agencies in January. Projected RWS purchases for 2025 were provided to BAWSCA by the Member Agencies as described previously in this memo. Projected wholesale RWS purchases for 2023 and 2024 were derived assuming a linear change between 2022 and 2025.

Table B below provides a summary of the Member Agencies' RWS supply drought cutbacks under each of the four supply availability conditions and is intended to help you complete UWMP Table 7-1.

Table B: Wholesale Customer Drought Cutbacks Based on a Single Dry Year and Multiple Dry Years (Base Year 2025)

	(a)	(b)	(c)	(d)	(e)	(f)	(g)
(1)	Projected SF RWS Wholesale Purchases	146.0 MGD	146.4 MGD	146.8 MGD	147.1 MGD	147.5 MGD	147.9 MGD
(2)	Supply Available to the Wholesale Customers	Percent Cutback on Wholesale RWS Purchases					
		2025	**2026**	**2027**	**2028**	**2029**	**2030**
(3)	157.5 MGD	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(4)	132.5 MGD	-9.2%	-9.5%	-9.7%	-9.9%	-10.2%	-10.4%
(5)	82.8 MGD	-43.3%	-43.4%	-43.6%	-43.7%	-43.9%	-44.0%
(6)	74.5 MGD	-49.0%	-49.1%	-49.3%	-49.4%	-49.5%	-49.6%

Attachment B: Updated 2020 UWMP Drought Cutbacks

Table B, column (a), rows 3 through 6 lists total RWS supplies available to the Wholesale Customers as provided in the Supply Reliability Letter tables. Row 1 provides cumulative projected wholesale RWS purchases for 2025 through 2030. Projected wholesale RWS purchases for years 2025 and 2030 were provided to BAWSCA by the Member Agencies as described previously in this memo. Projected wholesale RWS purchases for 2026 through 2029 were derived assuming a linear change between 2025 and 2030.

To complete UWMP Tables 7-1 and 7-5, reference tables in the Supply Reliability Letter to identify total RWS supplies available to the Wholesale Customers and apply the percent cutback in the corresponding year of the drought sequence using Tables A and B. For example, in Supply Reliability Letter Table 3, in the 5th consecutive year of a drought, the volume available to the Wholesale Customers is 74.5 MGD. To calculate RWS supplies available to your agency in 2025 using table A, locate the row with 74.5 MGD on the table – row 6 – and the column for 2025 – column (g). Then apply the percent cutback to your agency's RWS demand in 2025.

A list of purchase projections by agency are provided in Tables C, D, E, and F. The table also indicates the percent cutback that should be applied based on total RWS supplies available to the Wholesale Customers. Tables C and E use Scenario 1: With Bay-Delta Plan. Tables D and F use Scenario 2: Without Bay-Delta Plan. Tables C and D use 2020 as the base year and Tables E and F use 2025 as the base year.

BAWSCA understands that agencies are updating projected demands for their 2020 UWMPs and that projected RWS purchases may change from what was previously provided. Additionally, BAWSCA recognizes that not all Member Agencies will choose the same scenario for their UWMP supply reliability tables. For both reasons, projected RWS purchases in each Member Agency's 2020 UWMP may not add up to total Wholesale demands in the SFPUC's 2020 UWMP. This is consistent with direction given by the Department of Water Resources, which encourages suppliers use the UWMP tables to represent what they believe to be the most likely supply reliability scenario and to characterize the five-consecutive year drought in a manner that is best suited for understanding and managing their water service reliability and individual agency level of risk tolerance.

Attachment B: Updated 2020 UWMP Drought Cutbacks

Table C: Scenario 1: With Bay-Delta Plan - Projected Wholesale Customer RWS Demand and Percent Cutback for a Single Dry Year and Multiple Dry Years (Base Year 2020)

	2020 (184 MGD)		**2021** (157.5 MGD)		**2022** (132.5 MGD)		**2023** (74.5 MGD)		**2024** (74.5 MGD)		**2025** (74.5 MGD)	
Agency	Actual Purchases	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback
ACWD	7.87	0.0%	9.44	0.0%	9.46	-5.9%	8.87	-47.7%	8.27	-48.4%	7.68	-49.0%
Brisbane/GVMID	0.64	0.0%	0.62	0.0%	0.65	-5.9%	0.73	-47.7%	0.81	-48.4%	0.89	-49.0%
Burlingame	3.48	0.0%	3.34	0.0%	3.35	-5.9%	3.67	-47.7%	4.00	-48.4%	4.33	-49.0%
Coastside	1.02	0.0%	1.54	0.0%	1.23	-5.9%	1.29	-47.7%	1.34	-48.4%	1.40	-49.0%
CalWater Total	29.00	0.0%	29.66	0.0%	29.81	-5.9%	29.87	-47.7%	29.93	-48.4%	29.99	-49.0%
Daly City	3.97	0.0%	4.00	0.0%	4.01	-5.9%	3.86	-47.7%	3.72	-48.4%	3.57	-49.0%
East Palo Alto	1.57	0.0%	1.63	0.0%	1.69	-5.9%	1.75	-47.7%	1.81	-48.4%	1.88	-49.0%
Estero	4.34	0.0%	4.48	0.0%	4.51	-5.9%	4.36	-47.7%	4.22	-48.4%	4.07	-49.0%
Hayward	13.92	0.0%	14.47	0.0%	15.12	-5.9%	16.03	-47.7%	16.94	-48.4%	17.86	-49.0%
Hillsborough	2.62	0.0%	2.95	0.0%	3.05	-5.9%	3.12	-47.7%	3.19	-48.4%	3.26	-49.0%
Menlo Park	2.96	0.0%	2.92	0.0%	2.93	-5.9%	3.14	-47.7%	3.35	-48.4%	3.55	-49.0%
Mid-Peninsula	2.66	0.0%	2.65	0.0%	2.80	-5.9%	2.82	-47.7%	2.84	-48.4%	2.86	-49.0%
Millbrae	1.90	0.0%	1.95	0.0%	2.15	-5.9%	2.19	-47.7%	2.24	-48.4%	2.29	-49.0%
Milpitas	5.92	0.0%	5.88	0.0%	5.34	-5.9%	5.76	-47.7%	6.17	-48.4%	6.59	-49.0%
Mountain View	7.67	0.0%	7.80	0.0%	8.05	-5.9%	8.23	-47.7%	8.42	-48.4%	8.60	-49.0%
North Coast	2.37	0.0%	2.58	0.0%	2.66	-5.9%	2.56	-47.7%	2.45	-48.4%	2.34	-49.0%
Palo Alto	9.75	0.0%	9.44	0.0%	9.66	-5.9%	9.79	-47.7%	9.93	-48.4%	10.06	-49.0%
Purissima Hills	1.75	0.0%	1.97	0.0%	2.02	-5.9%	2.04	-47.7%	2.06	-48.4%	2.09	-49.0%
Redwood City	8.76	0.0%	8.72	0.0%	9.07	-5.9%	8.86	-47.7%	8.66	-48.4%	8.46	-49.0%
San Bruno	0.95	0.0%	3.39	0.0%	3.40	-5.9%	3.35	-47.7%	3.29	-48.4%	3.24	-49.0%
San José	4.26	0.0%	4.31	0.0%	4.51	-5.9%	4.51	-47.7%	4.50	-48.4%	4.50	-49.0%
Santa Clara	3.27	0.0%	3.29	0.0%	3.50	-5.9%	3.83	-47.7%	4.17	-48.4%	4.50	-49.0%
Stanford	1.43	0.0%	1.40	0.0%	1.54	-5.9%	1.70	-47.7%	1.85	-48.4%	2.01	-49.0%
Sunnyvale	9.33	0.0%	9.35	0.0%	9.45	-5.9%	9.35	-47.7%	9.26	-48.4%	9.16	-49.0%
Westborough	0.82	0.0%	0.84	0.0%	0.81	-5.9%	0.83	-47.7%	0.84	-48.4%	0.86	-49.0%
Wholesale Total	**132.2**	**132.2†**	**138.6**	**138.6†**	**140.8**	**132.5†**	**142.5**	**74.5†**	**144.3**	**74.5†**	**146.0**	**74.5†**

† Total supply available to the Wholesale Customers after drought cutback.

Attachment B: Updated 2020 UWMP Drought Cutbacks

Table D: Scenario 2: Without Bay-Delta Plan - Projected Wholesale Customer RWS Demand and Percent Cutback for a Single Dry Year and Multiple Dry Years (Base Year 2020)

	2020 (184 MGD)		**2021** (157.5 MGD)		**2022** (132.5 MGD)		**2023** (132.5 MGD)		**2024** (132.5 MGD)		**2025** (132.5 MGD)	
Agency	Actual Purchases	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback
ACWD	7.87	0.0%	9.44	0.0%	9.46	-5.9%	8.87	-7.0%	8.27	-8.2%	7.68	-9.2%
Brisbane/GVMID	0.64	0.0%	0.62	0.0%	0.65	-5.9%	0.73	-7.0%	0.81	-8.2%	0.89	-9.2%
Burlingame	3.48	0.0%	3.34	0.0%	3.35	-5.9%	3.67	-7.0%	4.00	-8.2%	4.33	-9.2%
Coastside	1.02	0.0%	1.54	0.0%	1.23	-5.9%	1.29	-7.0%	1.34	-8.2%	1.40	-9.2%
CalWater Total	29.00	0.0%	29.66	0.0%	29.81	-5.9%	29.87	-7.0%	29.93	-8.2%	29.99	-9.2%
Daly City	3.97	0.0%	4.00	0.0%	4.01	-5.9%	3.86	-7.0%	3.72	-8.2%	3.57	-9.2%
East Palo Alto	1.57	0.0%	1.63	0.0%	1.69	-5.9%	1.75	-7.0%	1.81	-8.2%	1.88	-9.2%
Estero	4.34	0.0%	4.48	0.0%	4.51	-5.9%	4.36	-7.0%	4.22	-8.2%	4.07	-9.2%
Hayward	13.92	0.0%	14.47	0.0%	15.12	-5.9%	16.03	-7.0%	16.94	-8.2%	17.86	-9.2%
Hillsborough	2.62	0.0%	2.95	0.0%	3.05	-5.9%	3.12	-7.0%	3.19	-8.2%	3.26	-9.2%
Menlo Park	2.96	0.0%	2.92	0.0%	2.93	-5.9%	3.14	-7.0%	3.35	-8.2%	3.55	-9.2%
Mid-Peninsula	2.66	0.0%	2.65	0.0%	2.80	-5.9%	2.82	-7.0%	2.84	-8.2%	2.86	-9.2%
Millbrae	1.90	0.0%	1.95	0.0%	2.15	-5.9%	2.19	-7.0%	2.24	-8.2%	2.29	-9.2%
Milpitas	5.92	0.0%	5.88	0.0%	5.34	-5.9%	5.76	-7.0%	6.17	-8.2%	6.59	-9.2%
Mountain View	7.67	0.0%	7.80	0.0%	8.05	-5.9%	8.23	-7.0%	8.42	-8.2%	8.60	-9.2%
North Coast	2.37	0.0%	2.58	0.0%	2.66	-5.9%	2.56	-7.0%	2.45	-8.2%	2.34	-9.2%
Palo Alto	9.75	0.0%	9.44	0.0%	9.66	-5.9%	9.79	-7.0%	9.93	-8.2%	10.06	-9.2%
Purissima Hills	1.75	0.0%	1.97	0.0%	2.02	-5.9%	2.04	-7.0%	2.06	-8.2%	2.09	-9.2%
Redwood City	8.76	0.0%	8.72	0.0%	9.07	-5.9%	8.86	-7.0%	8.66	-8.2%	8.46	-9.2%
San Bruno	0.95	0.0%	3.39	0.0%	3.40	-5.9%	3.35	-7.0%	3.29	-8.2%	3.24	-9.2%
San José	4.26	0.0%	4.31	0.0%	4.51	-5.9%	4.51	-7.0%	4.50	-8.2%	4.50	-9.2%
Santa Clara	3.27	0.0%	3.29	0.0%	3.50	-5.9%	3.83	-7.0%	4.17	-8.2%	4.50	-9.2%
Stanford	1.43	0.0%	1.40	0.0%	1.54	-5.9%	1.70	-7.0%	1.85	-8.2%	2.01	-9.2%
Sunnyvale	9.33	0.0%	9.35	0.0%	9.45	-5.9%	9.35	-7.0%	9.26	-8.2%	9.16	-9.2%
Westborough	0.82	0.0%	0.84	0.0%	0.81	-5.9%	0.83	-7.0%	0.84	-8.2%	0.86	-9.2%
Wholesale Total	**132.2**	**132.2†**	**138.6**	**138.6†**	**140.8**	**132.5†**	**142.5**	**132.5†**	**144.3**	**132.5†**	**146.0**	**132.5†**

† Total supply available to the Wholesale Customers after drought cutback.

Attachment B: Updated 2020 UWMP Drought Cutbacks

Table E: Scenario 1: <u>With</u> Bay-Delta Plan - Projected Wholesale Customer RWS Demand and Percent Cutback for a Single Dry Year and Multiple Dry Years (Base Year 2025)

	2025 (184 MGD)		**2026** (82.8 MGD)		**2027** (74.5 MGD)		**2028** (74.5 MGD)		**2029** (74.5 MGD)		**2030** (74.5 MGD)	
Agency	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback
ACWD	7.68	0%	7.68	-43.4%	7.68	-49.3%	7.68	-49.4%	7.68	-49.5%	7.68	-49.6%
Brisbane/GVMID	0.89	0%	0.89	-43.4%	0.89	-49.3%	0.89	-49.4%	0.89	-49.5%	0.89	-49.6%
Burlingame	4.33	0%	4.34	-43.4%	4.35	-49.3%	4.37	-49.4%	4.38	-49.5%	4.40	-49.6%
Coastside	1.40	0%	1.40	-43.4%	1.39	-49.3%	1.39	-49.4%	1.38	-49.5%	1.38	-49.6%
CalWater Total	29.99	0%	29.94	-43.4%	29.89	-49.3%	29.84	-49.4%	29.79	-49.5%	29.74	-49.6%
Daly City	3.57	0%	3.56	-43.4%	3.55	-49.3%	3.54	-49.4%	3.53	-49.5%	3.52	-49.6%
East Palo Alto	1.88	0%	1.89	-43.4%	1.91	-49.3%	1.92	-49.4%	1.93	-49.5%	1.95	-49.6%
Estero	4.07	0%	4.08	-43.4%	4.08	-49.3%	4.09	-49.4%	4.10	-49.5%	4.11	-49.6%
Hayward	17.86	0%	18.02	-43.4%	18.19	-49.3%	18.35	-49.4%	18.52	-49.5%	18.68	-49.6%
Hillsborough	3.26	0%	3.26	-43.4%	3.26	-49.3%	3.26	-49.4%	3.26	-49.5%	3.25	-49.6%
Menlo Park	3.55	0%	3.58	-43.4%	3.60	-49.3%	3.63	-49.4%	3.66	-49.5%	3.68	-49.6%
Mid-Peninsula	2.86	0%	2.85	-43.4%	2.85	-49.3%	2.85	-49.4%	2.84	-49.5%	2.84	-49.6%
Millbrae	2.29	0%	2.33	-43.4%	2.37	-49.3%	2.41	-49.4%	2.46	-49.5%	2.50	-49.6%
Milpitas	6.59	0%	6.62	-43.4%	6.65	-49.3%	6.68	-49.4%	6.72	-49.5%	6.75	-49.6%
Mountain View	8.60	0%	8.66	-43.4%	8.72	-49.3%	8.78	-49.4%	8.84	-49.5%	8.90	-49.6%
North Coast	2.34	0%	2.34	-43.4%	2.33	-49.3%	2.33	-49.4%	2.33	-49.5%	2.33	-49.6%
Palo Alto	10.06	0%	10.08	-43.4%	10.10	-49.3%	10.12	-49.4%	10.13	-49.5%	10.15	-49.6%
Purissima Hills	2.09	0%	2.09	-43.4%	2.09	-49.3%	2.09	-49.4%	2.09	-49.5%	2.09	-49.6%
Redwood City	8.46	0%	8.46	-43.4%	8.47	-49.3%	8.48	-49.4%	8.49	-49.5%	8.49	-49.6%
San Bruno	3.24	0%	3.23	-43.4%	3.23	-49.3%	3.22	-49.4%	3.22	-49.5%	3.22	-49.6%
San José	4.50	0%	4.50	-43.4%	4.50	-49.3%	4.50	-49.4%	4.50	-49.5%	4.50	-49.6%
Santa Clara	4.50	0%	4.50	-43.4%	4.50	-49.3%	4.50	-49.4%	4.50	-49.5%	4.50	-49.6%
Stanford	2.01	0%	2.04	-43.4%	2.08	-49.3%	2.11	-49.4%	2.15	-49.5%	2.18	-49.6%
Sunnyvale	9.16	0%	9.19	-43.4%	9.22	-49.3%	9.24	-49.4%	9.27	-49.5%	9.30	-49.6%
Westborough	0.86	0%	0.86	-43.4%	0.86	-49.3%	0.86	-49.4%	0.85	-49.5%	0.85	-49.6%
Wholesale Total	**146.0**	**146.0†**	**146.4**	**82.8†**	**146.8**	**74.5†**	**147.1**	**74.5†**	**147.5**	**74.5†**	**147.9**	**74.5†**

† Total supply available to the Wholesale Customers after drought cutback.

Attachment B: Updated 2020 UWMP Drought Cutbacks

Table F: Scenario 2: Without Bay-Delta Plan - Projected Wholesale Customer RWS Demand and Percent Cutback for a Single Dry Year and Multiple Dry Years (Base Year 2025)

	2025 (184 MGD)		**2026** (157.5 MGD)		**2027** (157.5 MGD)		**2028** (157.5 MGD)		**2029** (132.5 MGD)		**2030** (132.5 MGD)	
Agency	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback
ACWD	7.68	0.0%	7.68	0.0%	7.68	0.0%	7.68	0.0%	7.68	-10.2%	7.68	-10.4%
Brisbane/GVMID	0.89	0.0%	0.89	0.0%	0.89	0.0%	0.89	0.0%	0.89	-10.2%	0.89	-10.4%
Burlingame	4.33	0.0%	4.34	0.0%	4.35	0.0%	4.37	0.0%	4.38	-10.2%	4.40	-10.4%
Coastside	1.40	0.0%	1.40	0.0%	1.39	0.0%	1.39	0.0%	1.38	-10.2%	1.38	-10.4%
CalWater Total	29.99	0.0%	29.94	0.0%	29.89	0.0%	29.84	0.0%	29.79	-10.2%	29.74	-10.4%
Daly City	3.57	0.0%	3.56	0.0%	3.55	0.0%	3.54	0.0%	3.53	-10.2%	3.52	-10.4%
East Palo Alto	1.88	0.0%	1.89	0.0%	1.91	0.0%	1.92	0.0%	1.93	-10.2%	1.95	-10.4%
Estero	4.07	0.0%	4.08	0.0%	4.08	0.0%	4.09	0.0%	4.10	-10.2%	4.11	-10.4%
Hayward	17.86	0.0%	18.02	0.0%	18.19	0.0%	18.35	0.0%	18.52	-10.2%	18.68	-10.4%
Hillsborough	3.26	0.0%	3.26	0.0%	3.26	0.0%	3.26	0.0%	3.26	-10.2%	3.25	-10.4%
Menlo Park	3.55	0.0%	3.58	0.0%	3.60	0.0%	3.63	0.0%	3.66	-10.2%	3.68	-10.4%
Mid-Peninsula	2.86	0.0%	2.85	0.0%	2.85	0.0%	2.85	0.0%	2.84	-10.2%	2.84	-10.4%
Millbrae	2.29	0.0%	2.33	0.0%	2.37	0.0%	2.41	0.0%	2.46	-10.2%	2.50	-10.4%
Milpitas	6.59	0.0%	6.62	0.0%	6.65	0.0%	6.68	0.0%	6.72	-10.2%	6.75	-10.4%
Mountain View	8.60	0.0%	8.66	0.0%	8.72	0.0%	8.78	0.0%	8.84	-10.2%	8.90	-10.4%
North Coast	2.34	0.0%	2.34	0.0%	2.33	0.0%	2.33	0.0%	2.33	-10.2%	2.33	-10.4%
Palo Alto	10.06	0.0%	10.08	0.0%	10.10	0.0%	10.12	0.0%	10.13	-10.2%	10.15	-10.4%
Purissima Hills	2.09	0.0%	2.09	0.0%	2.09	0.0%	2.09	0.0%	2.09	-10.2%	2.09	-10.4%
Redwood City	8.46	0.0%	8.46	0.0%	8.47	0.0%	8.48	0.0%	8.49	-10.2%	8.49	-10.4%
San Bruno	3.24	0.0%	3.23	0.0%	3.23	0.0%	3.22	0.0%	3.22	-10.2%	3.22	-10.4%
San José	4.50	0.0%	4.50	0.0%	4.50	0.0%	4.50	0.0%	4.50	-10.2%	4.50	-10.4%
Santa Clara	4.50	0.0%	4.50	0.0%	4.50	0.0%	4.50	0.0%	4.50	-10.2%	4.50	-10.4%
Stanford	2.01	0.0%	2.04	0.0%	2.08	0.0%	2.11	0.0%	2.15	-10.2%	2.18	-10.4%
Sunnyvale	9.16	0.0%	9.19	0.0%	9.22	0.0%	9.24	0.0%	9.27	-10.2%	9.30	-10.4%
Westborough	0.86	0.0%	0.86	0.0%	0.86	0.0%	0.86	0.0%	0.85	-10.2%	0.85	-10.4%
Wholesale Total	**146.0**	**146.0†**	**146.4**	**146.4†**	**146.8**	**146.8†**	**147.1**	**147.1†**	**147.5**	**132.5†**	**147.9**	**132.5†**

† Total supply available to the Wholesale Customers after drought cutback.

Attachment B: Updated 2020 UWMP Drought Cutbacks

<u>UWMP Table 7-4</u>

Supply Reliability Letter Tables 7 and 8 will help your agency complete UWMP Table 7-4. Table G below provides a summary of the Member Agencies' RWS supply drought cutbacks under each of the four supply availability conditions and is intended to help you complete UWMP Table 7-4. The table assumes (1) the Tier 2 Plan will be used to allocate supplies available to the Wholesale Customers when average Wholesale Customers' RWS shortages are greater than 10 and up to 20 percent, and (2) an equal percent reduction will be shared across all Wholesale Customers when average Wholesale Customers' RWS shortages are 10 percent or less or greater than 20 percent.

Table G: Drought Cutbacks Based on Projected Demands Under All Water Supply Availability Conditions

	(a)	(b)	(c)	(d)	(e)	(f)
(1)	Projected SF RWS Wholesale Purchases	146.0 MGD	147.9 MGD	151.9 MGD	156.3 MGD	162.8 MGD
(2)	Supply Available to the Wholesale Customers	% Cutback on Wholesale RWS Purchases				
		2025	**2030**	**2035**	**2040**	**2045**
(3)	157.5 MGD	0.0%	0.0%	0.0%	0.0%	-3.2%
(4)	132.5 MGD	-9.3%	-10.4%	Tier 2 Avg. -14%*	Tier 2 Avg. -16%*	Tier 2 Avg. -19%*
(5)	82.8 MGD	-43.3%	-44.0%	-45.5%	-47.0%	-49.1%
(6)	74.5 MGD	-49.0%	-49.6%	-51.0%	-52.3%	-54.2%

* Calculated average. Individual agency cutbacks are calculated in Table H.

Table G, column (a) lists total RWS supplies available to the Wholesale Customers as provided in the Supply Reliability Letter tables. Row 1 provides cumulative projected wholesale RWS purchases for 2025, 2030, 2035, 2040, and 2045.

Tables H, I, J and K provide additional detail by agency for each of the four supply availability conditions listed in Table G. To complete UWMP Table 7-4, reference Table 7 or 8 (depending on which Bay-Delta Plan scenario you choose) in the Supply Reliability Letter to identify total RWS supplies available to the Wholesale Customers and apply the percent cutback in the corresponding year using Table G or input the volumetric drought allocation using Tables H, I, J and K below.

Attachment B: Updated 2020 UWMP Drought Cutbacks

Table H: Drought Allocations when Total Supplies Available to the Wholesale Customers are Equal to 157.5 MGD

Projected SF RWS Wholesale Purchases	146.0 MGD	147.9 MGD	151.9 MGD	156.3 MGD	162.8 MGD
	Drought Allocation (MGD)				
Agency	**2025**	**2030**	**2030**	**2040**	**2045**
ACWD	7.68	7.68	7.68	7.68	8.82
Burlingame	0.89	0.89	0.88	0.89	0.87
Burlingame	4.33	4.40	4.47	4.58	4.54
Coastside	1.40	1.38	1.36	1.33	1.28
CalWater Total	29.99	29.74	29.81	30.27	29.71
Daly City	3.57	3.52	3.49	3.46	3.32
East Palo Alto	1.88	1.95	2.10	2.49	2.80
Estero	4.07	4.11	4.18	4.23	4.24
Hayward	17.86	18.68	19.75	20.82	21.43
Hillsborough	3.26	3.25	3.26	3.26	3.15
Menlo Park	3.55	3.68	3.87	4.06	4.15
Mid-Peninsula	2.86	2.84	2.88	2.89	2.83
Millbrae	2.29	2.50	2.45	2.82	3.10
Milpitas	6.59	6.75	7.03	7.27	7.29
Mountain View	8.60	8.90	9.20	9.51	9.61
North Coast	2.34	2.33	2.34	2.34	2.27
Palo Alto	10.06	10.15	10.28	10.51	10.44
Purissima Hills	2.09	2.09	2.12	2.13	2.08
Redwood City	8.46	8.49	8.64	8.74	8.62
San Bruno	3.24	3.22	3.20	3.20	3.11
San José	4.50	4.50	4.50	4.50	4.35
Santa Clara	4.50	4.50	4.50	4.50	4.35
Stanford	2.01	2.18	2.35	2.53	2.61
Sunnyvale	9.16	9.30	10.70	11.44	11.71
Westborough	0.86	0.85	0.85	0.84	0.82
Wholesale Total	**146.0**	**147.9**	**151.9**	**156.3**	**157.5**

Attachment B: Updated 2020 UWMP Drought Cutbacks

Table I: Drought Allocations when Total Supplies Available to the Wholesale Customers are Equal to 132.5 MGD

Projected SF RWS Wholesale Purchases	146.0 MGD	147.9 MGD	151.9 MGD	156.3 MGD	162.8 MGD
	Drought Allocation (MGD)				
Agency	**2025**	**2030**	**2030**	**2040**	**2045**
ACWD	6.97	6.88	6.91	6.91	8.20
Burlingame	0.81	0.79	0.73	0.73	0.72
Burlingame	3.93	3.94	3.96	3.89	3.80
Coastside	1.27	1.24	1.22	1.20	1.19
CalWater Total	27.21	26.65	26.46	25.69	24.69
Daly City	3.24	3.15	3.04	3.01	2.98
East Palo Alto	1.70	1.75	1.97	2.30	2.62
Estero	3.69	3.68	3.76	3.87	3.77
Hayward	16.20	16.74	17.32	17.69	18.07
Hillsborough	2.96	2.92	2.90	2.75	2.56
Menlo Park	3.22	3.30	3.37	3.33	3.26
Mid-Peninsula	2.59	2.54	2.59	2.62	2.54
Millbrae	2.07	2.24	2.16	2.32	2.45
Milpitas	5.98	6.05	6.25	6.31	6.35
Mountain View	7.80	7.97	8.28	8.49	8.34
North Coast	2.12	2.09	2.11	2.11	2.11
Palo Alto	9.13	9.09	9.26	9.46	9.71
Purissima Hills	1.89	1.87	1.42	1.38	1.32
Redwood City	7.67	7.61	7.89	7.70	7.49
San Bruno	2.94	2.88	2.56	2.51	2.45
San José	4.08	4.03	3.03	2.91	2.76
Santa Clara	4.08	4.03	3.03	2.91	2.76
Stanford	1.82	1.95	2.06	2.13	2.16
Sunnyvale	8.31	8.33	9.46	9.51	9.43
Westborough	0.78	0.76	0.76	0.76	0.76
Wholesale Total	**132.5**	**132.5**	**132.5**	**132.5**	**132.5**

Attachment B: Updated 2020 UWMP Drought Cutbacks

Table J: Drought Allocations when Total Supplies Available to the Wholesale Customers are Equal to 82.8 MGD

Projected SF RWS Wholesale Purchases	146.0 MGD	147.9 MGD	151.9 MGD	156.3 MGD	162.8 MGD
	Drought Allocation (MGD)				
Agency	**2025**	**2030**	**2030**	**2040**	**2045**
ACWD	4.36	4.30	4.19	4.07	4.64
Burlingame	0.51	0.50	0.48	0.47	0.45
Burlingame	2.45	2.46	2.44	2.43	2.39
Coastside	0.79	0.77	0.74	0.71	0.68
CalWater Total	17.00	16.65	16.25	16.03	15.62
Daly City	2.02	1.97	1.90	1.83	1.75
East Palo Alto	1.06	1.09	1.14	1.32	1.47
Estero	2.31	2.30	2.28	2.24	2.23
Hayward	10.13	10.46	10.77	11.03	11.26
Hillsborough	1.85	1.82	1.78	1.73	1.66
Menlo Park	2.01	2.06	2.11	2.15	2.18
Mid-Peninsula	1.62	1.59	1.57	1.53	1.49
Millbrae	1.30	1.40	1.34	1.49	1.63
Milpitas	3.74	3.78	3.83	3.85	3.83
Mountain View	4.88	4.98	5.01	5.04	5.05
North Coast	1.33	1.30	1.28	1.24	1.19
Palo Alto	5.71	5.68	5.61	5.57	5.49
Purissima Hills	1.18	1.17	1.15	1.13	1.10
Redwood City	4.80	4.76	4.71	4.63	4.53
San Bruno	1.83	1.80	1.75	1.70	1.63
San José	2.55	2.52	2.45	2.38	2.29
Santa Clara	2.55	2.52	2.45	2.38	2.29
Stanford	1.14	1.22	1.28	1.34	1.37
Sunnyvale	5.19	5.21	5.83	6.06	6.16
Westborough	0.49	0.48	0.46	0.45	0.43
Wholesale Total	**82.8**	**82.8**	**82.8**	**82.8**	**82.8**

Attachment B: Updated 2020 UWMP Drought Cutbacks

Table K: Drought Allocations when Total Supplies Available to the Wholesale Customers are Equal to 74.5 MGD

Projected SF RWS Wholesale Purchases	146.0 MGD	147.9 MGD	151.9 MGD	156.3 MGD	162.8 MGD
	Drought Allocation (MGD)				
Agency	**2025**	**2030**	**2030**	**2040**	**2045**
ACWD	3.92	3.87	3.77	3.66	4.17
Burlingame	0.46	0.45	0.43	0.42	0.41
Burlingame	2.21	2.21	2.19	2.18	2.15
Coastside	0.71	0.70	0.67	0.64	0.61
CalWater Total	15.30	14.98	14.62	14.43	14.05
Daly City	1.82	1.77	1.71	1.65	1.57
East Palo Alto	0.96	0.98	1.03	1.19	1.32
Estero	2.08	2.07	2.05	2.02	2.00
Hayward	9.11	9.41	9.69	9.92	10.14
Hillsborough	1.66	1.64	1.60	1.55	1.49
Menlo Park	1.81	1.86	1.90	1.94	1.96
Mid-Peninsula	1.46	1.43	1.41	1.38	1.34
Millbrae	1.17	1.26	1.20	1.34	1.47
Milpitas	3.36	3.40	3.45	3.47	3.45
Mountain View	4.39	4.48	4.51	4.53	4.54
North Coast	1.19	1.17	1.15	1.12	1.07
Palo Alto	5.14	5.11	5.04	5.01	4.94
Purissima Hills	1.06	1.05	1.04	1.02	0.99
Redwood City	4.31	4.28	4.24	4.17	4.08
San Bruno	1.65	1.62	1.57	1.53	1.47
San José	2.30	2.27	2.21	2.14	2.06
Santa Clara	2.30	2.27	2.21	2.14	2.06
Stanford	1.03	1.10	1.15	1.21	1.24
Sunnyvale	4.67	4.69	5.25	5.45	5.54
Westborough	0.44	0.43	0.41	0.40	0.39
Wholesale Total	**74.5**	**74.5**	**74.5**	**74.5**	**74.5**

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March 30, 2021

Danielle McPherson
Senior Water Resources Specialist
Bay Area Water Supply and Conservation Agency
155 Bovet Road, Suite 650
San Mateo, CA 94402

Dear Ms. McPherson,

Attached please find additional supply reliability modeling results conducted by the SFPUC. The SFPUC has conducted additional supply reliability modeling under the following planning scenarios:

- Projected supply reliability for years 2020 through 2045, assuming that demand is equivalent to the sum of the projected retail demands on the Regional Water System (RWS) and Wholesale Customer purchase request projections provided to SFPUC by BAWSCA on January 21st (see Table 1 below).
- Under the above demand conditions, projected supply reliability for scenarios both with and without implementation of the Bay-Delta Plan Amendment starting in 2023.

The SFPUC will be using this supply modeling in the text of its draft UWMP and moving the original modeling results into an appendix.

Table 1: Retail and Wholesale RWS Demand Assumptions Used for Additional Supply Reliability Modeling (mgd)

	2020	2025	2030	2035	2040	2045
Retail	66.5	67.2	67.5	68.6	70.5	73.7
Wholesale[1, 2]	132.1	146.0	147.9	151.9	156.3	162.8
Total	**198.6**	**213.2**	**215.4**	**220.5**	**226.8**	**236.5**

[1] Wholesale purchase request projections provided to the SFPUC by BAWSCA on January 21st, 2021
[2] Includes demands for Cities of San Jose and Santa Clara

Please note the following about the information presented in the attached tables:

- Assumptions about infrastructure conditions remain the same as what was provided in our January 22nd letter.
- The Tier 1 allocations were applied to the RWS supplies to determine the wholesale supply, as was also described in the January 22nd letter; for any system-wide shortage above 20%, the Tier 1 split for a 20% shortage was applied.
- The SFPUC water supply planning methodology, including simulation of an 8.5-year design drought, is used to develop these estimates of water supply available from the RWS for five dry years. In each demand scenario for 2020 through 2045, the RWS deliveries are estimated using the standard SFPUC procedure, which includes adding increased levels of rationing as needed to balance the demands on the RWS system with available water supply. Some simulations may have increased levels of rationing in the final years of the design drought sequence, which can influence the comparison of results in the first five years of the sequence.
- Tables 7 and 8 in the attached document provide RWS and wholesale supply availability for the five-year drought risk assessment from 2021 to 2025. SFPUC's modeling approach does not allow for varying demands over the course of a dry year sequence. Therefore, the supply projections for 2021 to 2025 are based on meeting 2020 levels of demand. However, in years when the Bay-Delta Plan Amendment is not in effect, sufficient RWS supplies will be available to meet the Wholesale Customers' purchase requests assuming that they are between the 2020 and 2025 projected levels. This is not reflected in Tables 7 and 8 because SFPUC did not want to make assumptions about the growth of purchase requests between 2020 and 2025.

In our draft UWMP, we acknowledge that we have a Level of Service objective of meeting average annual water demand of 265 mgd from the SFPUC watersheds for retail and Wholesale Customers during non-drought years, as well as a contractual obligation to supply 184 mgd to the Wholesale Customers. Therefore, we will still include the results of our modeling based on a demand of 265 mgd in order to facilitate planning that supports meeting this Level of Service objective and our contractual obligations. The results of this modeling will be in an appendix to the draft UWMP. As will be shown in this appendix, in a normal year the SFPUC can provide up to 265 mgd of supply from the RWS. The RWS supply projections shown in the attached tables are more accurately characterized as supplies that will be used to meet projected retail and Wholesale Customer demands.

It is our understanding that you will pass this information on to the Wholesale Customers. If you have any questions or need additional information, please do not hesitate to contact Sarah Triolo, at striolo@sfwater.org or (628) 230 0802.

Sincerely,

Paula Kehoe

Paula Kehoe
Director of Water Resources

Table 2: Projected Total RWS Supply Utilized and Portion of RWS Supply Utilized by Wholesale Customers in Normal Years [For Table 6-9]:

Year	2020	2025	2030	2035	2040	2045
RWS Supply Utilized (mgd)	198.6	213.2	215.4	220.5	226.8	236.5
RWS Supply Utilized by Wholesale Customers[a] (mgd)	132.1	146.0	147.9	151.9	156.3	162.8

[a] RWS supply utilized by Wholesale Customers is equivalent to purchase request projections provided to SFPUC by BAWSCA on January 21, 2021, and includes Cities of San Jose and Santa Clara.

Basis of Water Supply Data: With Bay-Delta Plan Amendment

Table 3a: Basis of Water Supply Data [For Table 7-1], Base Year 2020, With Bay-Delta Plan Amendment

Year Type	Base Year	RWS Volume Available (mgd)	% of Average Supply	Wholesale Volume Available (mgd)	Notes on Calculation of Wholesale Supply
Average year	2020	198.6	100%	132.1	
Single dry year		198.6	100%	132.1	
Consecutive 1st Dry year		198.6	100%	132.1	
Consecutive 2nd Dry year		198.6	100%	132.1	
Consecutive 3rd Dry year[1]		119.2	60%	74.5	• At shortages 20% or greater, wholesale allocation is assumed to be 62.5%
Consecutive 4th Dry year		119.2	60%	74.5	• Same as above
Consecutive 5th Dry year		119.2	60%	74.5	• Same as above

[1] Assuming this year represents 2023, when Bay Delta Plan Amendment would come into effect.

Table 3b: Basis of Water Supply Data [For Table 7-1], Base Year 2025, With Bay-Delta Plan Amendment

Year Type	Base Year	RWS Volume Available (mgd)	% of Average Supply	Wholesale Volume Available (mgd)	Notes on Calculation of Wholesale Supply
Average year	2025	213.2	100%	146.0	
Single dry year		149.2	70%	93.3	• At shortages 20% or greater, wholesale allocation is assumed to be 62.5%
Consecutive 1st Dry year		149.2	70%	93.3	• Same as above
Consecutive 2nd Dry year		127.9	60%	80.0	• Same as above
Consecutive 3rd Dry year		127.9	60%	80.0	• Same as above
Consecutive 4th Dry year		127.9	60%	80.0	• Same as above
Consecutive 5th Dry year		127.9	60%	80.0	• Same as above

Table 3c: Basis of Water Supply Data [For Table 7-1], Base Year 2030, With Bay-Delta Plan Amendment

Year Type	Base Year	RWS Volume Available (mgd)	% of Average Supply	Wholesale Volume Available (mgd)	Notes on Calculation of Wholesale Supply
Average year	2030	215.4	100%	147.9	
Single dry year		150.8	70%	94.2	• At shortages 20% or greater, wholesale allocation is assumed to be 62.5%
Consecutive 1st Dry year		150.8	70%	94.2	• Same as above
Consecutive 2nd Dry year		129.2	60%	80.8	• Same as above
Consecutive 3rd Dry year		129.2	60%	80.8	• Same as above
Consecutive 4th Dry year		129.2	60%	80.8	• Same as above
Consecutive 5th Dry year		129.2	60%	80.8	• Same as above

Table 3d: Basis of Water Supply Data [For Table 7-1], Base Year 2035, With Bay-Delta Plan Amendment

Year Type	Base Year	RWS Volume Available (mgd)	% of Average Supply	Wholesale Volume Available (mgd)	Notes on Calculation of Wholesale Supply
Average year	2035	220.5	100%	151.9	
Single dry year		154.4	70%	96.5	• At shortages 20% or greater, wholesale allocation is assumed to be 62.5%
Consecutive 1st Dry year		154.4	70%	96.5	• Same as above
Consecutive 2nd Dry year		132.3	60%	82.7	• Same as above
Consecutive 3rd Dry year		132.3	60%	82.7	• Same as above
Consecutive 4th Dry year		132.3	60%	82.7	• Same as above
Consecutive 5th Dry year		121.3	55%	75.8	• Same as above

Table 3e: Basis of Water Supply Data [For Table 7-1], Base Year 2040, With Bay-Delta Plan Amendment

Year Type	Base Year	RWS Volume Available (mgd)	% of Average Supply	Wholesale Volume Available (mgd)	Notes on Calculation of Wholesale Supply
Average year	2040	226.8	100%	156.3	
Single dry year		158.8	70%	99.2	• At shortages 20% or greater, wholesale allocation is assumed to be 62.5%
Consecutive 1st Dry year		158.8	70%	99.2	• Same as above
Consecutive 2nd Dry year		136.1	60%	85.1	• Same as above
Consecutive 3rd Dry year		136.1	60%	85.1	• Same as above
Consecutive 4th Dry year		120.2	53%	75.1	• Same as above
Consecutive 5th Dry year		120.2	53%	75.1	• Same as above

Table 3f: Basis of Water Supply Data [For Table 7-1], Base Year 2045, With Bay-Delta Plan Amendment

Year Type	Base Year	RWS Volume Available (mgd)	% of Average Supply	Wholesale Volume Available (mgd)	Notes on Calculation of Wholesale Supply
Average year	2045	236.5	100%	162.8	
Single dry year		141.9	60%	88.7	• At shortages 20% or greater, wholesale allocation is assumed to be 62.5%
Consecutive 1st Dry year		141.9	60%	88.7	• Same as above
Consecutive 2nd Dry year		141.9	60%	88.7	• Same as above
Consecutive 3rd Dry year		141.9	60%	88.7	• Same as above
Consecutive 4th Dry year		120.6	51%	75.4	• Same as above
Consecutive 5th Dry year		120.6	51%	75.4	• Same as above

Table 3g: Projected RWS Supply Availability [Alternative to Table 7-1], Years 2020-2045, With Bay-Delta Plan Amendment

Year	2020	2025	2030	2035	2040	2045
Average year	100%	100%	100%	100%	100%	100%
Single dry year	100%	70%	70%	70%	70%	60%
Consecutive 1st Dry year	100%	70%	70%	70%	70%	60%
Consecutive 2nd Dry year	100%	60%	60%	60%	60%	60%
Consecutive 3rd Dry year[1]	60%	60%	60%	60%	60%	60%
Consecutive 4th Dry year	60%	60%	60%	60%	53%	51%
Consecutive 5th Dry year	60%	60%	60%	55%	53%	51%

[1] Assuming that at base year 2020, this year represents 2023, when Bay Delta Plan Amendment would come into effect.

Basis of Water Supply Data: Without Bay-Delta Plan Amendment

Table 4a: Basis of Water Supply Data [For Table 7-1], Base Year 2020, Without Bay-Delta Plan Amendment

Year Type	Base Year	RWS Volume Available (mgd)	% of Average Supply	Wholesale Volume Available (mgd)	Notes on Calculation of Wholesale Supply
Average year	2020	198.6	100%	132.1	
Single dry year		198.6	100%	132.1	
Consecutive 1st Dry year		198.6	100%	132.1	
Consecutive 2nd Dry year		198.6	100%	132.1	
Consecutive 3rd Dry year		198.6	100%	132.1	
Consecutive 4th Dry year		198.6	100%	132.1	
Consecutive 5th Dry year		198.6	100%	132.1	

Table 4b: Basis of Water Supply Data [For Table 7-1], Base Year 2025, Without Bay-Delta Plan Amendment

Year Type	Base Year	RWS Volume Available (mgd)	% of Average Supply	Wholesale Volume Available (mgd)	Notes on Calculation of Wholesale Supply
Average year	2025	213.2	100%	146.0	
Single dry year		213.2	100%	146.0	
Consecutive 1st Dry year		213.2	100%	146.0	
Consecutive 2nd Dry year		213.2	100%	146.0	
Consecutive 3rd Dry year		213.2	100%	146.0	
Consecutive 4th Dry year		213.2	100%	146.0	
Consecutive 5th Dry year		213.2	100%	146.0	

Table 4c: Basis of Water Supply Data [For Table 7-1], Base Year 2030, Without Bay-Delta Plan Amendment

Year Type	Base Year	RWS Volume Available (mgd)	% of Average Supply	Wholesale Volume Available (mgd)	Notes on Calculation of Wholesale Supply
Average year	2030	215.4	100%	147.9	
Single dry year		215.4	100%	147.9	
Consecutive 1st Dry year		215.4	100%	147.9	
Consecutive 2nd Dry year		215.4	100%	147.9	
Consecutive 3rd Dry year		215.4	100%	147.9	
Consecutive 4th Dry year		215.4	100%	147.9	
Consecutive 5th Dry year		215.4	100%	147.9	

Table 4d: Basis of Water Supply Data [For Table 7-1], Base Year 2035, Without Bay-Delta Plan Amendment

Year Type	Base Year	RWS Volume Available (mgd)	% of Average Supply	Wholesale Volume Available (mgd)	Notes on Calculation of Wholesale Supply
Average year	2035	220.5	100%	151.9	
Single dry year		220.5	100%	151.9	
Consecutive 1st Dry year		220.5	100%	151.9	
Consecutive 2nd Dry year		220.5	100%	151.9	
Consecutive 3rd Dry year		220.5	100%	151.9	
Consecutive 4th Dry year		220.5	100%	151.9	
Consecutive 5th Dry year		220.5	100%	151.9	

Table 4e: Basis of Water Supply Data [For Table 7-1], Base Year 2040, Without Bay-Delta Plan Amendment

Year Type	Base Year	RWS Volume Available (mgd)	% of Average Supply	Wholesale Volume Available (mgd)	Notes on Calculation of Wholesale Supply
Average year	2040	226.8	100%	156.3	
Single dry year		226.8	100%	156.3	
Consecutive 1st Dry year		226.8	100%	156.3	
Consecutive 2nd Dry year		226.8	100%	156.3	
Consecutive 3rd Dry year		226.8	100%	156.3	
Consecutive 4th Dry year		226.8	100%	156.3	
Consecutive 5th Dry year		226.8	100%	156.3	

Table 4f: Basis of Water Supply Data [For Table 7-1], Base Year 2045, Without Bay-Delta Plan Amendment

Year Type	Base Year	RWS Volume Available (mgd)	% of Average Supply	Wholesale Volume Available (mgd)	Notes on Calculation of Wholesale Supply
Average year	2045	236.5	100%	162.8	
Single dry year		236.5	100%	162.8	
Consecutive 1st Dry year		236.5	100%	162.8	
Consecutive 2nd Dry year		236.5	100%	162.8	
Consecutive 3rd Dry year		236.5	100%	162.8	
Consecutive 4th Dry year		212.8	90%	139.1	• At a 10% shortage level, the wholesale allocation is 64% of available supply • The retail allocation is 36% of supply, which resulted in a positive allocation to retail of 2.9 mgd, which was re-allocated to the Wholesale Customers
Consecutive 5th Dry year		212.8	90%	139.1	• Same as above

Table 4g: Projected RWS Supply [Alternative to Table 7-1], Years 2020-2045, Without Bay-Delta Plan Amendment

Year	2020	2025	2030	2035	2040	2045
Average year	100%	100%	100%	100%	100%	100%
Single dry year	100%	100%	100%	100%	100%	100%
Consecutive 1st Dry year	100%	100%	100%	100%	100%	100%
Consecutive 2nd Dry year	100%	100%	100%	100%	100%	100%
Consecutive 3rd Dry year	100%	100%	100%	100%	100%	100%
Consecutive 4th Dry year	100%	100%	100%	100%	100%	90%
Consecutive 5th Dry year	100%	100%	100%	100%	100%	90%

Supply Projections for Consecutive Five Dry Year Sequences

Table 5: Projected Multiple Dry Years Wholesale Supply from RWS [For Table 7-4], With Bay-Delta Plan Amendment

	2025	**2030**	**2035**	**2040**	**2045**
First year	93.3	94.2	96.5	99.2	88.7
Second year	80.0	80.8	82.7	85.1	88.7
Third year	80.0	80.8	82.7	85.1	88.7
Fourth year	80.0	80.8	82.7	75.1	75.4
Fifth year	80.0	80.8	75.8	75.1	75.4

Table 6: Projected Multiple Dry Years Wholesale Supply from RWS [For Table 7-4], <u>Without</u> Bay-Delta Plan Amendment

	2025	**2030**	**2035**	**2040**	**2045**
First year	146.0	147.9	151.9	156.3	162.8
Second year	146.0	147.9	151.9	156.3	162.8
Third year	146.0	147.9	151.9	156.3	162.8
Fourth year	146.0	147.9	151.9	156.3	139.1
Fifth year	146.0	147.9	151.9	156.3	139.1

Table 7: Projected Regional Water System Supply for 5-Year Drought Risk Assessment [For Table 7-5], With Bay-Delta Plan Amendment. This table assumes Bay Delta Plan comes into effect in 2023.

Year	**2021**	**2022**	**2023**	**2024**	**2025**
RWS Supply (mgd)	198.6	198.6	119.2	119.2	119.2
Wholesale Supply (mgd)	132.1	132.1	74.5	74.5	74.5

Table 8: Projected Regional Water System Supply for 5-Year Drought Risk Assessment [For Table 7-5], <u>Without</u> Bay Delta Plan

Year	**2021**	**2022**	**2023**	**2024**	**2025**
RWS Supply (mgd)	198.6	198.6	198.6	198.6	198.6
Wholesale Supply (mgd)	132.1	132.1	132.1	132.1	132.1

Section 1: Basis for Calculations. Projected Wholesale RWS Purchases Through 2045

Table A: Wholesale RWS Actual Purchases in 2020 and Projected Purchases for 2025, 2030, 2035, 2040, and 2045 (mgd)[a]

Agency	2020 Actual	Projected Wholesale RWS Purchases 2025	2030	2035	2040	2045
ACWD	7.87	7.68	7.68	7.68	7.68	9.11
Brisbane/GVMID	0.64	0.89	0.89	0.88	0.89	0.89
Burlingame	3.48	4.33	4.40	4.47	4.58	4.69
Coastside	1.02	1.40	1.38	1.36	1.33	1.33
CalWater Total	29.00	29.99	29.74	29.81	30.27	30.70
Daly City	3.97	3.57	3.52	3.49	3.46	3.43
East Palo Alto	1.57	1.88	1.95	2.10	2.49	2.89
Estero	4.34	4.07	4.11	4.18	4.23	4.38
Hayward	13.92	17.86	18.68	19.75	20.82	22.14
Hillsborough	2.62	3.26	3.25	3.26	3.26	3.26
Menlo Park	2.96	3.55	3.68	3.87	4.06	4.29
Mid-Peninsula	2.66	2.86	2.84	2.88	2.89	2.93
Millbrae	1.90	2.29	2.50	2.45	2.82	3.20
Milpitas	5.92	6.59	6.75	7.03	7.27	7.53
Mountain View	7.67	8.60	8.90	9.20	9.51	9.93
North Coast	2.37	2.34	2.33	2.34	2.34	2.34
Palo Alto	9.75	10.06	10.15	10.28	10.51	10.79
Purissima Hills	1.75	2.09	2.09	2.12	2.13	2.15
Redwood City	8.76	8.46	8.49	8.64	8.74	8.90
San Bruno	0.95	3.24	3.22	3.20	3.20	3.21
San Jose	4.26	4.50	4.50	4.50	4.50	4.50
Santa Clara	3.27	4.50	4.50	4.50	4.50	4.50
Stanford	1.43	2.01	2.18	2.35	2.53	2.70
Sunnyvale	9.33	9.16	9.30	10.70	11.44	12.10
Westborough	0.82	0.86	0.85	0.85	0.84	0.84
Total	**132.22**	**146.01**	**147.87**	**151.90**	**156.31**	**162.76**

[a] Wholesale RWS purchase projections for 2025, 2030, 2035, 2040, and 2045 were provided to BAWSCA between July 2020 and January 2021 by the Member Agencies following the completion of the June 2020 Demand Study.

Table B: Basis for the 5-Year Drought Risk Assessment Wholesale RWS Actual Purchases in 2020 and 2021-2025 Projected Purchases (mgd)

Agency	2020 Actual	Projected and Estimated Wholesale RWS Purchases 2021[b]	2022[b]	2023[c]	2024[c]	2025[c]
ACWD	7.87	9.44	9.46	9.46	9.46	9.46
Brisbane/GVMID	0.64	0.62	0.65	0.65	0.65	0.65
Burlingame	3.48	3.34	3.35	3.35	3.35	3.35
Coastside	1.02	1.54	1.23	1.23	1.23	1.23
CalWater Total	29.00	29.66	29.81	29.81	29.81	29.81
Daly City	3.97	4.00	4.01	4.01	4.01	4.01
East Palo Alto	1.57	1.63	1.69	1.69	1.69	1.69
Estero	4.34	4.48	4.51	4.51	4.51	4.51
Hayward	13.92	14.47	15.12	15.12	15.12	15.12
Hillsborough	2.62	2.95	3.05	3.05	3.05	3.05
Menlo Park	2.96	2.92	2.93	2.93	2.93	2.93
Mid-Peninsula	2.66	2.65	2.80	2.80	2.80	2.80
Millbrae	1.90	1.95	2.15	2.15	2.15	2.15
Milpitas	5.92	5.88	5.34	5.34	5.34	5.34
Mountain View	7.67	7.80	8.05	8.05	8.05	8.05
North Coast	2.37	2.58	2.66	2.66	2.66	2.66
Palo Alto	9.75	9.44	9.66	9.66	9.66	9.66
Purissima Hills	1.75	1.97	2.02	2.02	2.02	2.02
Redwood City	8.76	8.72	9.07	9.07	9.07	9.07
San Bruno	0.95	3.39	3.40	3.40	3.40	3.40
San Jose	4.26	4.31	4.51	4.51	4.51	4.51
Santa Clara	3.27	3.29	3.50	3.50	3.50	3.50
Stanford	1.43	1.40	1.54	1.54	1.54	1.54
Sunnyvale	9.33	9.35	9.45	9.45	9.45	9.45
Westborough	0.82	0.84	0.81	0.81	0.81	0.81
Total	**132.22**	**138.61**	**140.77**	**140.77**	**140.77**	**140.77**

[b] Wholesale RWS purchase projections for 2021 and 2022 were provided to Christina Tang, BAWSCA's Finance Manager, by the Member Agencies in January 2021.

[c] The SFPUC's supply reliability tables assume the Bay-Delta Plan takes effect in 2023. In the event of a shortage, the Tier 2 Plan specifies that each agencies' Allocation Factor would be calculated once at the onset of a shortage based on the previous year's use and remains the same until the shortage condition is over. Therefore, for the purpose of drought allocations for the 5-year Drought Risk Assessment, wholesale RWS demand is assumed to remain static from 2022 through the drought sequence.

Section 2: Drought Allocations ***With*** Bay-Delta Plan

Table C: RWS Supply Available to the Wholesale Customers (Combined Tables 3a-3f from the SFPUC's March 30th letter) *With* Bay-Delta Plan (mgd)

	2020[e]	2025	2030	2035	2040	2045
Projected Purchases[d]	132.2	146.0	147.9	151.9	156.3	162.8
Consecutive 1st Dry Year	138.6	93.3	94.2	96.5	99.2	88.7
Consecutive 2nd Dry Year	140.8	80.0	80.8	82.7	85.1	88.7
Consecutive 3rd Dry Year	74.5	80.0	80.8	82.7	85.1	88.7
Consecutive 4th Dry Year	74.5	80.0	80.8	82.7	75.1	75.4
Consecutive 5th Dry Year	74.5	80.0	80.8	75.8	75.1	75.4

[d] Values for 2020 are actual purchases. This row aligns with what is labeled as an "Average Year" in Tables 3a-3f in the SFPUC's March 30th letter. However, these values do not represent an average year and instead are actual purchases for 2020 or projected purchases for 2025 through 2045.

[e] In years when the Bay-Delta Plan is not in effect, sufficient RWS supplies will be available to meet the Wholesale Customers' purchase requests assuming that they are between the 2020 and 2025 projected levels. As such, RWS supply available to the Wholesale Customers in the 1st and 2nd consecutive dry years under base year 2020 is equal to the cumulative projected wholesale RWS purchases for 2021 and 2022, respectively.

Table D: Wholesale RWS Demand (Combined Totals from Tables A and B) (mgd)[f]

	2020	2025	2030	2035	2040	2045
Projected Purchases[d]	132.2	146.0	147.9	151.9	156.3	162.8
Consecutive 1st Dry Year	138.6	146.0	147.9	151.9	156.3	162.8
Consecutive 2nd Dry Year	140.8	146.0	147.9	151.9	156.3	162.8
Consecutive 3rd Dry Year	140.8	146.0	147.9	151.9	156.3	162.8
Consecutive 4th Dry Year	140.8	146.0	147.9	151.9	156.3	162.8
Consecutive 5th Dry Year	140.8	146.0	147.9	151.9	156.3	162.8

[f] The SFPUC's modeling approach does not allow for varying demands over the course of a dry year sequence. Additionally, the Tier 2 Plan calculates each agencies' Allocation Factor once at the onset of a drought and it remains the same until the shortage condition is over. When system-wide shortages are projected, wholesale RWS demand is assumed to be static for the remainder of the drought sequence.

Table E: Percent Cutback to the Wholesale Customers *With* Bay-Delta Plan[g]

	2020	2025	2030	2035	2040	2045
Projected Purchases[d]	0%	0%	0%	0%	0%	0%
Consecutive 1st Dry Year	0%	36%	36%	36%	37%	46%
Consecutive 2nd Dry Year	0%	45%	45%	46%	46%	46%
Consecutive 3rd Dry Year	47%	45%	45%	46%	46%	46%
Consecutive 4th Dry Year	47%	45%	45%	46%	52%	54%
Consecutive 5th Dry Year	47%	45%	45%	50%	52%	54%

[g] Agencies that wish to use new or different projected RWS purchases may use the percent cutbacks listed in this table to determine their drought allocation.

Table F1: Basis of Water Supply Data [For Tables 7-1 and 7-5], Base Year 2020, *With* Bay-Delta Plan (mgd)

Year Consecutive Dry Year	2020 Actual	2021 1st	2022 2nd	2023 3rd	2024 4th	2025 5th
Wholesale RWS Demand	132.2	138.6	140.8	140.8	140.8	140.8
Wholesale RWS Supply Available	132.2	138.6	140.8	74.5	74.5	74.5
Percent Cutback	0%	0%	0%	47%	47%	47%

Table F2: Individual Agency Drought Allocations [For Tables 7-1 and 7-5], Base Year 2020, *With* Bay-Delta Plan (mgd)

	2020	Wholesale RWS Drought Allocations				
Agency	**Actual**	**2021**	**2022**	**2023**	**2024**	**2025**
ACWD	7.87	9.44	9.46	5.01	5.01	5.01
Brisbane/GVMID	0.64	0.62	0.65	0.34	0.34	0.34
Burlingame	3.48	3.34	3.35	1.77	1.77	1.77
Coastside	1.02	1.54	1.23	0.65	0.65	0.65
CalWater Total	29.00	29.66	29.81	15.78	15.78	15.78
Daly City	3.97	4.00	4.01	2.12	2.12	2.12
East Palo Alto	1.57	1.63	1.69	0.89	0.89	0.89
Estero	4.34	4.48	4.51	2.39	2.39	2.39
Hayward	13.92	14.47	15.12	8.00	8.00	8.00
Hillsborough	2.62	2.95	3.05	1.61	1.61	1.61
Menlo Park	2.96	2.92	2.93	1.55	1.55	1.55
Mid-Peninsula	2.66	2.65	2.80	1.48	1.48	1.48
Millbrae	1.90	1.95	2.15	1.14	1.14	1.14
Milpitas	5.92	5.88	5.34	2.83	2.83	2.83
Mountain View	7.67	7.80	8.05	4.26	4.26	4.26
North Coast	2.37	2.58	2.66	1.41	1.41	1.41
Palo Alto	9.75	9.44	9.66	5.11	5.11	5.11
Purissima Hills	1.75	1.97	2.02	1.07	1.07	1.07
Redwood City	8.76	8.72	9.07	4.80	4.80	4.80
San Bruno	0.95	3.39	3.40	1.80	1.80	1.80
San Jose	4.26	4.31	4.51	2.39	2.39	2.39
Santa Clara	3.27	3.29	3.50	1.85	1.85	1.85
Stanford	1.43	1.40	1.54	0.82	0.82	0.82
Sunnyvale	9.33	9.35	9.45	5.00	5.00	5.00
Westborough	0.82	0.84	0.81	0.43	0.43	0.43
Total	**132.2**	**138.6**	**140.8**	**74.5**	**74.5**	**74.5**

Table G1: Basis of Water Supply Data [For Tables 7-1 and 7-4], Base Year 2025, *With* Bay-Delta Plan (mgd)

Consecutive Dry Year	1st	2nd	3rd	4th	5th
Wholesale RWS Demand	146.0	146.0	146.0	146.0	146.0
Wholesale RWS Supply Available	93.3	80.0	80.0	80.0	80.0
Percent Cutback	36%	45%	45%	45%	45%

Table G2: Individual Agency Drought Allocations [For Tables 7-1 and 7-4], Base Year 2025, *With* Bay-Delta Plan (mgd)

	Wholesale RWS Drought Allocations				
Consecutive Dry Year	1st	2nd	3rd	4th	5th
ACWD	4.91	4.21	4.21	4.21	4.21
Brisbane/GVMID	0.57	0.49	0.49	0.49	0.49
Burlingame	2.76	2.37	2.37	2.37	2.37
Coastside	0.89	0.77	0.77	0.77	0.77
CalWater Total	19.16	16.43	16.43	16.43	16.43
Daly City	2.28	1.96	1.96	1.96	1.96
East Palo Alto	1.20	1.03	1.03	1.03	1.03
Estero	2.60	2.23	2.23	2.23	2.23
Hayward	11.41	9.78	9.78	9.78	9.78
Hillsborough	2.08	1.79	1.79	1.79	1.79
Menlo Park	2.27	1.95	1.95	1.95	1.95
Mid-Peninsula	1.83	1.57	1.57	1.57	1.57
Millbrae	1.46	1.25	1.25	1.25	1.25
Milpitas	4.21	3.61	3.61	3.61	3.61
Mountain View	5.49	4.71	4.71	4.71	4.71
North Coast	1.49	1.28	1.28	1.28	1.28
Palo Alto	6.43	5.51	5.51	5.51	5.51
Purissima Hills	1.33	1.14	1.14	1.14	1.14
Redwood City	5.40	4.63	4.63	4.63	4.63
San Bruno	2.07	1.77	1.77	1.77	1.77
San Jose	2.88	2.47	2.47	2.47	2.47
Santa Clara	2.88	2.47	2.47	2.47	2.47
Stanford	1.28	1.10	1.10	1.10	1.10
Sunnyvale	5.85	5.02	5.02	5.02	5.02
Westborough	0.55	0.47	0.47	0.47	0.47
Total	**93.3**	**80.0**	**80.0**	**80.0**	**80.0**

Table H1: Basis of Water Supply Data [For Tables 7-1 and 7-4], Base Year 2030, *With* Bay-Delta Plan (mgd)

Consecutive Dry Year	1st	2nd	3rd	4th	5th
Wholesale RWS Demand	147.9	147.9	147.9	147.9	147.9
Wholesale RWS Supply Available	94.2	80.8	80.8	80.8	80.8
Percent Cutback	36%	45%	45%	45%	45%

Table H2: Individual Agency Drought Allocations [For Tables 7-1 and 7-4], Base Year 2030, *With* Bay-Delta Plan (mgd)

	Wholesale RWS Drought Allocations				
Consecutive Dry Year	1st	2nd	3rd	4th	5th
ACWD	4.89	4.20	4.20	4.20	4.20
Brisbane/GVMID	0.56	0.48	0.48	0.48	0.48
Burlingame	2.80	2.40	2.40	2.40	2.40
Coastside	0.88	0.75	0.75	0.75	0.75
CalWater Total	18.94	16.25	16.25	16.25	16.25
Daly City	2.24	1.92	1.92	1.92	1.92
East Palo Alto	1.24	1.07	1.07	1.07	1.07
Estero	2.62	2.24	2.24	2.24	2.24
Hayward	11.90	10.21	10.21	10.21	10.21
Hillsborough	2.07	1.78	1.78	1.78	1.78
Menlo Park	2.35	2.01	2.01	2.01	2.01
Mid-Peninsula	1.81	1.55	1.55	1.55	1.55
Millbrae	1.59	1.37	1.37	1.37	1.37
Milpitas	4.30	3.69	3.69	3.69	3.69
Mountain View	5.67	4.86	4.86	4.86	4.86
North Coast	1.48	1.27	1.27	1.27	1.27
Palo Alto	6.47	5.55	5.55	5.55	5.55
Purissima Hills	1.33	1.14	1.14	1.14	1.14
Redwood City	5.41	4.64	4.64	4.64	4.64
San Bruno	2.05	1.76	1.76	1.76	1.76
San Jose	2.87	2.46	2.46	2.46	2.46
Santa Clara	2.87	2.46	2.46	2.46	2.46
Stanford	1.39	1.19	1.19	1.19	1.19
Sunnyvale	5.92	5.08	5.08	5.08	5.08
Westborough	0.54	0.47	0.47	0.47	0.47
Total	**94.2**	**80.8**	**80.8**	**80.8**	**80.8**

Table I1: Basis of Water Supply Data [For Tables 7-1 and 7-4], Base Year 2035, *With* Bay-Delta Plan (mgd)

Consecutive Dry Year	1st	2nd	3rd	4th	5th
Wholesale RWS Demand	151.9	151.9	151.9	151.9	151.9
Wholesale RWS Supply Available	96.5	82.7	82.7	82.7	75.8
Percent Cutback	36%	46%	46%	46%	50%

Table I2: Individual Agency Drought Allocations [For Tables 7-1 and 7-4], Base Year 2035, *With* Bay-Delta Plan (mgd)

	Wholesale RWS Drought Allocations				
Consecutive Dry Year	**1st**	**2nd**	**3rd**	**4th**	**5th**
ACWD	4.88	4.18	4.18	4.18	3.83
Brisbane/GVMID	0.56	0.48	0.48	0.48	0.44
Burlingame	2.84	2.44	2.44	2.44	2.23
Coastside	0.86	0.74	0.74	0.74	0.68
CalWater Total	18.94	16.23	16.23	16.23	14.88
Daly City	2.22	1.90	1.90	1.90	1.74
East Palo Alto	1.33	1.14	1.14	1.14	1.05
Estero	2.66	2.28	2.28	2.28	2.09
Hayward	12.55	10.75	10.75	10.75	9.86
Hillsborough	2.07	1.78	1.78	1.78	1.63
Menlo Park	2.46	2.10	2.10	2.10	1.93
Mid-Peninsula	1.83	1.57	1.57	1.57	1.44
Millbrae	1.56	1.34	1.34	1.34	1.22
Milpitas	4.47	3.83	3.83	3.83	3.51
Mountain View	5.84	5.01	5.01	5.01	4.59
North Coast	1.49	1.27	1.27	1.27	1.17
Palo Alto	6.53	5.60	5.60	5.60	5.13
Purissima Hills	1.34	1.15	1.15	1.15	1.06
Redwood City	5.49	4.70	4.70	4.70	4.31
San Bruno	2.03	1.74	1.74	1.74	1.60
San Jose	2.86	2.45	2.45	2.45	2.25
Santa Clara	2.86	2.45	2.45	2.45	2.25
Stanford	1.49	1.28	1.28	1.28	1.17
Sunnyvale	6.80	5.83	5.83	5.83	5.34
Westborough	0.54	0.46	0.46	0.46	0.42
Total	**96.5**	**82.7**	**82.7**	**82.7**	**75.8**

Table J1: Basis of Water Supply Data [For Table 7-1 and 7-4], Base Year 2040, *With* Bay-Delta Plan (mgd)

Consecutive Dry Year	1st	2nd	3rd	4th	5th
Wholesale RWS Demand	156.3	156.3	156.3	156.3	156.3
Wholesale RWS Supply Available	99.2	85.1	85.1	75.1	75.1
Percent Cutback	37%	46%	46%	52%	52%

Table J2: Individual Agency Drought Allocations [For Tables 7-1 and 7-4], Base Year 2040, *With* Bay-Delta Plan (mgd)

	Wholesale RWS Drought Allocations				
Consecutive Dry Year	1st	2nd	3rd	4th	5th
ACWD	4.87	4.18	4.18	3.69	3.69
Brisbane/GVMID	0.56	0.48	0.48	0.43	0.43
Burlingame	2.91	2.49	2.49	2.20	2.20
Coastside	0.85	0.73	0.73	0.64	0.64
CalWater Total	19.21	16.48	16.48	14.54	14.54
Daly City	2.20	1.88	1.88	1.66	1.66
East Palo Alto	1.58	1.36	1.36	1.20	1.20
Estero	2.69	2.30	2.30	2.03	2.03
Hayward	13.21	11.34	11.34	10.00	10.00
Hillsborough	2.07	1.78	1.78	1.57	1.57
Menlo Park	2.58	2.21	2.21	1.95	1.95
Mid-Peninsula	1.84	1.58	1.58	1.39	1.39
Millbrae	1.79	1.53	1.53	1.35	1.35
Milpitas	4.62	3.96	3.96	3.49	3.49
Mountain View	6.03	5.18	5.18	4.57	4.57
North Coast	1.49	1.27	1.27	1.12	1.12
Palo Alto	6.67	5.72	5.72	5.05	5.05
Purissima Hills	1.35	1.16	1.16	1.03	1.03
Redwood City	5.55	4.76	4.76	4.20	4.20
San Bruno	2.03	1.74	1.74	1.54	1.54
San Jose	2.86	2.45	2.45	2.16	2.16
Santa Clara	2.86	2.45	2.45	2.16	2.16
Stanford	1.61	1.38	1.38	1.22	1.22
Sunnyvale	7.26	6.23	6.23	5.49	5.49
Westborough	0.54	0.46	0.46	0.41	0.41
Total	**99.2**	**85.1**	**85.1**	**75.1**	**75.1**

Table K1: Basis of Water Supply Data [For Tables 7-1 and 7-4], Base Year 2045, *With* Bay-Delta Plan (mgd)

Consecutive Dry Year	1st	2nd	3rd	4th	5th
Wholesale RWS Demand	162.8	162.8	162.8	162.8	162.8
Wholesale RWS Supply Available	88.7	88.7	88.7	75.4	75.4
Percent Cutback	46%	46%	46%	54%	54%

Table K2: Individual Agency Drought Allocations [For Tables 7-1 and 7-4], Base Year 2045, *With* Bay-Delta Plan (mgd)

	Wholesale RWS Drought Allocations				
Consecutive Dry Year	1st	2nd	3rd	4th	5th
ACWD	4.97	4.97	4.97	4.22	4.22
Brisbane/GVMID	0.49	0.49	0.49	0.41	0.41
Burlingame	2.56	2.56	2.56	2.17	2.17
Coastside	0.72	0.72	0.72	0.61	0.61
CalWater Total	16.73	16.73	16.73	14.22	14.22
Daly City	1.87	1.87	1.87	1.59	1.59
East Palo Alto	1.58	1.58	1.58	1.34	1.34
Estero	2.39	2.39	2.39	2.03	2.03
Hayward	12.07	12.07	12.07	10.26	10.26
Hillsborough	1.78	1.78	1.78	1.51	1.51
Menlo Park	2.34	2.34	2.34	1.99	1.99
Mid-Peninsula	1.59	1.59	1.59	1.36	1.36
Millbrae	1.74	1.74	1.74	1.48	1.48
Milpitas	4.11	4.11	4.11	3.49	3.49
Mountain View	5.41	5.41	5.41	4.60	4.60
North Coast	1.28	1.28	1.28	1.09	1.09
Palo Alto	5.88	5.88	5.88	5.00	5.00
Purissima Hills	1.17	1.17	1.17	1.00	1.00
Redwood City	4.85	4.85	4.85	4.12	4.12
San Bruno	1.75	1.75	1.75	1.49	1.49
San Jose	2.45	2.45	2.45	2.08	2.08
Santa Clara	2.45	2.45	2.45	2.08	2.08
Stanford	1.47	1.47	1.47	1.25	1.25
Sunnyvale	6.59	6.59	6.59	5.61	5.61
Westborough	0.46	0.46	0.46	0.39	0.39
Total	**88.7**	**88.7**	**88.7**	**75.4**	**75.4**

Section 3: Drought Allocations ***Without*** Bay-Delta Plan

Table L: RWS Supply Available to the Wholesale Customers (Combined Tables 4a-4f from the SFPUC's March 30th letter) *Without* Bay-Delta Plan (mgd)[h]

	2020	2025	2030	2035	2040	2045
Projected Purchases[i]	132.2	146.0	147.9	151.9	156.3	162.8
Consecutive 1st Dry Year	132.2	146.0	147.9	151.9	156.3	162.8
Consecutive 2nd Dry Year	132.2	146.0	147.9	151.9	156.3	162.8
Consecutive 3rd Dry Year	132.2	146.0	147.9	151.9	156.3	162.8
Consecutive 4th Dry Year	132.2	146.0	147.9	151.9	156.3	139.1
Consecutive 5th Dry Year	132.2	146.0	147.9	151.9	156.3	139.1

[h] The SFPUC's modeling approach does not allow for varying demands over the course of a dry year sequence. However, the SFPUC has indicated that sufficient supplies are available to meet wholesale RWS demand so long as they reasonably stay within 2020 and 2040 levels. The SFPUC's modeling does not indicate cutbacks will be required till the 4th and 5th consecutive dry year at 2045 levels.

[i] Values for 2020 are actual purchases. This row aligns with what is labeled as an "Average Year" in Tables 4a-4f in the SFPUC's March 30th letter. However, these values do not represent an average year and instead are actual purchases for 2020 or projected purchases for 2025 through 2045.

Table M: Wholesale RWS Demand (Combined Totals from Tables A and B) (mgd)

	2020	2025	2030	2035	2040	2045
Projected Purchases[i]	132.2	146.0	147.9	151.9	156.3	162.8
Consecutive 1st Dry Year	132.2	146.0	147.9	151.9	156.3	162.8
Consecutive 2nd Dry Year	132.2	146.0	147.9	151.9	156.3	162.8
Consecutive 3rd Dry Year	132.2	146.0	147.9	151.9	156.3	162.8
Consecutive 4th Dry Year	132.2	146.0	147.9	151.9	156.3	162.8
Consecutive 5th Dry Year	132.2	146.0	147.9	151.9	156.3	162.8

Table N: Percent Cutback to the Wholesale Customers *Without* Bay-Delta Plan

	2020	2025	2030	2035	2040	2045
Projected Purchases[i]	0%	0%	0%	0%	0%	0%
Consecutive 1st Dry Year	0%	0%	0%	0%	0%	0%
Consecutive 2nd Dry Year	0%	0%	0%	0%	0%	0%
Consecutive 3rd Dry Year	0%	0%	0%	0%	0%	0%
Consecutive 4th Dry Year	0%	0%	0%	0%	0%	15%
Consecutive 5th Dry Year	0%	0%	0%	0%	0%	15%

Table O1: Basis of Water Supply Data [For Tables 7-1 and 7-4], Base Year 2045, *Without* Bay-Delta Plan (mgd)

Consecutive Dry Year	1st	2nd	3rd	4th	5th
Wholesale RWS Demand	162.8	162.8	162.8	162.8	162.8
Wholesale RWS Supply Available	162.8	162.8	162.8	139.1	139.1
Percent Cutback	0%	0%	0%	Tier 2 Plan	Tier 2 Plan

Table O2: Individual Agency Drought Allocations [For Tables 7-1 and 7-4], Base Year 2045, *Without* Bay-Delta Plan (mgd)

	Wholesale RWS Drought Allocations					Tier 2 Drought
Consecutive Dry Year	1st	2nd	3rd	4th	5th	Cutback
ACWD	9.11	9.11	9.11	8.20	8.20	10.0%
Brisbane/GVMID	0.89	0.89	0.89	0.74	0.74	16.8%
Burlingame	4.69	4.69	4.69	4.02	4.02	14.3%
Coastside	1.33	1.33	1.33	1.19	1.19	10.0%
CalWater Total	30.70	30.70	30.70	26.73	26.73	12.9%
Daly City	3.43	3.43	3.43	3.01	3.01	12.4%
East Palo Alto	2.89	2.89	2.89	2.68	2.68	7.3%
Estero	4.38	4.38	4.38	3.94	3.94	10.0%
Hayward	22.14	22.14	22.14	18.67	18.67	15.7%
Hillsborough	3.26	3.26	3.26	2.93	2.93	10.2%
Menlo Park	4.29	4.29	4.29	3.58	3.58	16.5%
Mid-Peninsula	2.93	2.93	2.93	2.63	2.63	10.0%
Millbrae	3.20	3.20	3.20	2.54	2.54	20.7%
Milpitas	7.53	7.53	7.53	6.55	6.55	13.1%
Mountain View	9.93	9.93	9.93	8.91	8.91	10.3%
North Coast	2.34	2.34	2.34	2.11	2.11	10.0%
Palo Alto	10.79	10.79	10.79	9.71	9.71	10.0%
Purissima Hills	2.15	2.15	2.15	1.41	1.41	34.5%
Redwood City	8.90	8.90	8.90	7.92	7.92	11.1%
San Bruno	3.21	3.21	3.21	2.60	2.60	19.1%
San Jose	4.50	4.50	4.50	2.95	2.95	34.5%
Santa Clara	4.50	4.50	4.50	2.95	2.95	34.5%
Stanford	2.70	2.70	2.70	2.27	2.27	16.0%
Sunnyvale	12.10	12.10	12.10	10.11	10.11	16.5%
Westborough	0.84	0.84	0.84	0.76	0.76	10.0%
Total	**162.8**	**162.8**	**162.8**	**139.1**	**139.1**	

Attachment B: Updated 2020 UWMP Drought Cutbacks

The January 22, 2021, SFPUC Regional Water System (RWS) Supply Reliability Letter (Supply Reliability Letter) provides RWS supplies available to the Wholesale Customers under two scenarios: (1) With Bay-Delta Plan, and (2) Without Bay-Delta Plan. Your agency must choose which scenario to use for your agency's 2020 UWMP submittal tables. However, you may discuss both scenarios in the body of your agency's UWMP. The purpose of this attachment is to provide further detail about your agency's allocation of total RWS supplies available to the Wholesale Customers under both scenarios.

Data Sources for Projected RWS Purchases

Supply allocations are based on projected RWS purchases provided to BAWSCA by the Member Agencies. Following the completion of the Demand Study in June 2020, BAWSCA used the results to develop a table for each Member Agency listing possible supplies and total demand for 2025, 2030, 2035, 2040, and 2045. BAWSCA populated the tables with total demand after passive conservation and entered active conservation, as calculated in the agencies' DSS Model, as a source of supply. Multi-source agencies were asked to complete the table with supply projections, including from the RWS, to meet total demand. Single-source agencies were offered the opportunity to review the tables upon request. Because active conservation was treated as a source of supply, projected RWS purchases are after passive and active conservation.

Water Management Representatives (WMRs) received a draft copy of all projected wholesale RWS purchase requests as part of the January 7, 2021 WMR meeting agenda packet and meeting slides. Agencies were asked to notify BAWSCA if changes were necessary regarding their purchase requests prior to BAWSCA sending those purchase requests to the SFPUC. Purchase requests were transmitted to the SFPUC via a letter dated January 15, 2021 for use in their 2020 UWMP efforts.

Note that the projected RWS purchases used by BAWSCA for fiscal years 2020-21 and for 2021-22 were provided to Christina Tang, BAWSCA's Finance Manager, by each Member Agency in January 2021. This annual reporting is part of the SFPUC's wholesale rate setting process. Member Agencies have provided BAWSCA with these projected purchases annually for the past 10 years.

UWMP Tables 7-1 and 7-5

UWMP Table 7-1 requests supply reliability for a normal year, a single dry year, and multiple (five) dry years. Tables 3, 4, 5, and 6 provided in the Supply Reliability Letter will help your agency complete UWMP Table 7-1. The Drought Risk Assessment (DRA) in UWMP Table 7-5 also requests a five-year drought sequence but specifies years 2021 through 2025. Supply Reliability Letter Tables 9 and 10 will help your agency complete UWMP Table 7-5.

The Supply Reliability Letter provides four tables for completing UWMP Table 7-1. The Supply Reliability Letter Tables 3 (with Bay-Delta Plan) and 4 (without Bay-Delta Plan) use 2020 as the base year. Depending on which scenario you choose, these will be the basis for your agency's five-year DRA (UWMP Table 7-5). The Supply Reliability Letter Tables 5 (with Bay-Delta Plan) and 6 (without Bay-Delta Plan) use 2025 as the base year. Depending on which scenario you choose, these will be the basis for UWMP Tables 7-2 through 7-4. Your agency may submit multiple UWMP Tables 7-1 with different base years (see Figure 1 below).

Attachment B: Updated 2020 UWMP Drought Cutbacks

Figure 1: Footnote from Draft UWMP Table 7-1

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

Total RWS supplies available to the Wholesale Customers in the first through fifth consecutive dry years in Supply Reliability Letter Table 3 align with those in Table 9 of the same letter. Similarly, Supply Reliability Letter Table 4 aligns with Table 10 of the same letter.

Table A below provides a summary of the Member Agencies' RWS supply drought cutbacks under each of the four supply availability conditions and is intended to help you complete UWMP Tables 7-1and 7-5.

Table A: Wholesale Customer Drought Cutbacks Based on a Single Dry Year and Multiple Dry Years (Base Year 2020)

	(a)	(b)	(c)	(d)	(e)	(f)	(g)
(1)	Projected SF RWS Wholesale Purchases	132.2 MGD	138.6 MGD	140.8 MGD	140.8 MGD	140.8 MGD	140.8 MGD
(2)	Supply Available to the Wholesale Customers	Percent Cutback on Wholesale RWS Purchases					
		2020	**2021**	**2022**	**2023**	**2024**	**2025**
(3)	157.5 MGD	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(4)	132.5 MGD	0.0%	-4.4%	-5.9%	-5.9%	-5.9%	-5.9%
(5)	82.8 MGD	-37.4%	-40.3%	-41.2%	-41.2%	-41.2%	-41.2%
(6)	74.5 MGD	-43.7%	-46.3%	-47.1%	-47.1%	-47.1%	-47.1%

Table A, column (a), rows 3 through 6 lists total RWS supplies available to the Wholesale Customers as provided in the Supply Reliability Letter tables. Row 1 provides cumulative actual wholesale RWS purchases for 2020. In years when the Bay-Delta Plan is not in effect, sufficient RWS supplies will be available to meet the Wholesale Customers' purchase requests assuming that they are between the 2020 and 2025 projected levels. As such, RWS supply available to the Wholesale Customers in the 2021 and 2022 is equal to the cumulative projected wholesale RWS.. Projected RWS purchases for years 2021 and 2022 were provided to Christina Tang, BAWSCA's Finance Manager, by the Member Agencies in January 2021. The SFPUC's modeling approach does not allow for varying demands over the course of a dry year sequence. Additionally, the Tier 2 Plan calculates each agencies' Allocation Factor once at the onset of a drought and it remains the same until the shortage condition is over. Therefore, wholesale RWS demand in 2023 through 2025 is assumed to be static based on the 2022 projected demand.

Table B below provides a summary of the Member Agencies' RWS supply drought cutbacks under each of the four supply availability conditions and is intended to help you complete UWMP Table 7-1.

Attachment B: Updated 2020 UWMP Drought Cutbacks

Table B: Wholesale Customer Drought Cutbacks Based on a Single Dry Year and Multiple Dry Years (Base Year 2025)

	(a)	(b)	(c)	(d)	(e)	(f)
(1)	Projected SF RWS Wholesale Purchases	146.0 MGD	146.0 MGD	146.0 MGD	146.0 MGD	146.0 MGD
(2)	Supply Available to the Wholesale Customers	Percent Cutback on Wholesale RWS Purchases				
		2025	**2026**	**2027**	**2028**	**2029**
(3)	157.5 MGD	0.0%	0.0%	0.0%	0.0%	0.0%
(4)	132.5 MGD	-9.2%	-9.2%	-9.2%	-9.2%	-9.2%
(5)	82.8 MGD	-43.3%	-43.3%	-43.3%	-43.3%	-43.3%
(6)	74.5 MGD	-49.0%	-49.0%	-49.0%	-49.0%	-49.0%

Table B, column (a), rows 3 through 6 lists total RWS supplies available to the Wholesale Customers as provided in the Supply Reliability Letter tables. Row 1 provides cumulative projected wholesale RWS purchases for 2025 through 2029. The SFPUC's modeling approach does not allow for varying demands over the course of a dry year sequence. Additionally, the Tier 2 Plan calculates each agencies' Allocation Factor once at the onset of a drought and it remains the same until the shortage condition is over. Therefore, wholesale RWS demand is assumed to be static between 2025 and 2029 based on the 2025 projected demand.

To complete UWMP Tables 7-1 and 7-5, reference tables in the Supply Reliability Letter to identify total RWS supplies available to the Wholesale Customers and apply the percent cutback in the corresponding year of the drought sequence using Tables A and B. For example, in Supply Reliability Letter Table 3, in the 5th consecutive year of a drought, the volume available to the Wholesale Customers is 74.5 MGD. To calculate RWS supplies available to your agency in 2025 using table A, locate the row with 74.5 MGD on the table – row 6 – and the column for 2025 – column (g). Then apply the percent cutback to your agency's RWS demand in 2025.

A list of purchase projections by agency are provided in Tables C, D, E, and F. The table also indicates the percent cutback that should be applied based on total RWS supplies available to the Wholesale Customers. Tables C and E use Scenario 1: <u>With</u> Bay-Delta Plan. Tables D and F use Scenario 2: <u>Without</u> Bay-Delta Plan. Tables C and D use 2020 as the base year and Tables E and F use 2025 as the base year.

BAWSCA understands that agencies are updating projected demands for their 2020 UWMPs and that projected RWS purchases may change from what was previously provided. Additionally, BAWSCA recognizes that not all Member Agencies will choose the same scenario for their UWMP supply reliability tables. For both reasons, projected RWS purchases in each Member Agency's 2020 UWMP may not add up to total Wholesale demands in the SFPUC's 2020 UWMP. This is consistent with direction given by the Department of Water Resources, which encourages suppliers use the UWMP tables to represent what they believe to be the most likely supply reliability scenario and to characterize the five-consecutive year drought in a manner that is best suited for understanding and managing their water service reliability and individual agency level of risk tolerance.

Attachment B: Updated 2020 UWMP Drought Cutbacks

Table C: Scenario 1: With Bay-Delta Plan - Projected Wholesale Customer RWS Demand and Percent Cutback for a Single Dry Year and Multiple Dry Years (Base Year 2020)

	2020 (184 MGD)		**2021** (157.5 MGD)		**2022** (132.5 MGD)		**2023** (74.5 MGD)		**2024** (74.5 MGD)		**2025** (74.5 MGD)	
Agency	Actual Purchases	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback
ACWD	7.87	0.0%	9.44	0.0%	9.46	-5.9%	9.46	-47%	9.46	-47%	9.46	-47%
Brisbane/GVMID	0.64	0.0%	0.62	0.0%	0.65	-5.9%	0.65	-47%	0.65	-47%	0.65	-47%
Burlingame	3.48	0.0%	3.34	0.0%	3.35	-5.9%	3.35	-47%	3.35	-47%	3.35	-47%
Coastside	1.02	0.0%	1.54	0.0%	1.23	-5.9%	1.23	-47%	1.23	-47%	1.23	-47%
CalWater Total	29.00	0.0%	29.66	0.0%	29.81	-5.9%	29.81	-47%	29.81	-47%	29.81	-47%
Daly City	3.97	0.0%	4.00	0.0%	4.01	-5.9%	4.01	-47%	4.01	-47%	4.01	-47%
East Palo Alto	1.57	0.0%	1.63	0.0%	1.69	-5.9%	1.69	-47%	1.69	-47%	1.69	-47%
Estero	4.34	0.0%	4.48	0.0%	4.51	-5.9%	4.51	-47%	4.51	-47%	4.51	-47%
Hayward	13.92	0.0%	14.47	0.0%	15.12	-5.9%	15.12	-47%	15.12	-47%	15.12	-47%
Hillsborough	2.62	0.0%	2.95	0.0%	3.05	-5.9%	3.05	-47%	3.05	-47%	3.05	-47%
Menlo Park	2.96	0.0%	2.92	0.0%	2.93	-5.9%	2.93	-47%	2.93	-47%	2.93	-47%
Mid-Peninsula	2.66	0.0%	2.65	0.0%	2.80	-5.9%	2.80	-47%	2.80	-47%	2.80	-47%
Millbrae	1.90	0.0%	1.95	0.0%	2.15	-5.9%	2.15	-47%	2.15	-47%	2.15	-47%
Milpitas	5.92	0.0%	5.88	0.0%	5.34	-5.9%	5.34	-47%	5.34	-47%	5.34	-47%
Mountain View	7.67	0.0%	7.80	0.0%	8.05	-5.9%	8.05	-47%	8.05	-47%	8.05	-47%
North Coast	2.37	0.0%	2.58	0.0%	2.66	-5.9%	2.66	-47%	2.66	-47%	2.66	-47%
Palo Alto	9.75	0.0%	9.44	0.0%	9.66	-5.9%	9.66	-47%	9.66	-47%	9.66	-47%
Purissima Hills	1.75	0.0%	1.97	0.0%	2.02	-5.9%	2.02	-47%	2.02	-47%	2.02	-47%
Redwood City	8.76	0.0%	8.72	0.0%	9.07	-5.9%	9.07	-47%	9.07	-47%	9.07	-47%
San Bruno	0.95	0.0%	3.39	0.0%	3.40	-5.9%	3.40	-47%	3.40	-47%	3.40	-47%
San José	4.26	0.0%	4.31	0.0%	4.51	-5.9%	4.51	-47%	4.51	-47%	4.51	-47%
Santa Clara	3.27	0.0%	3.29	0.0%	3.50	-5.9%	3.50	-47%	3.50	-47%	3.50	-47%
Stanford	1.43	0.0%	1.40	0.0%	1.54	-5.9%	1.54	-47%	1.54	-47%	1.54	-47%
Sunnyvale	9.33	0.0%	9.35	0.0%	9.45	-5.9%	9.45	-47%	9.45	-47%	9.45	-47%
Westborough	0.82	0.0%	0.84	0.0%	0.81	-5.9%	0.81	-47%	0.81	-47%	0.81	-47%
Wholesale Total	**132.2**	**132.2†**	**138.6**	**138.6†**	**140.8**	**132.5†**	**140.8**	**74.5†**	**140.8**	**74.5†**	**140.8**	**74.5†**

† Total supply available to the Wholesale Customers after drought cutback.

Attachment B: Updated 2020 UWMP Drought Cutbacks

Table D: Scenario 2: Without Bay-Delta Plan - Projected Wholesale Customer RWS Demand and Percent Cutback for a Single Dry Year and Multiple Dry Years (Base Year 2020)

	2020 (184 MGD)		**2021** (157.5 MGD)		**2022** (132.5 MGD)		**2023** (132.5 MGD)		**2024** (132.5 MGD)		**2025** (132.5 MGD)	
Agency	Actual Purchases	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback
ACWD	7.87	0.0%	9.44	0.0%	9.46	-5.9%	9.46	-5.9%	9.46	-5.9%	9.46	-5.9%
Brisbane/GVMID	0.64	0.0%	0.62	0.0%	0.65	-5.9%	0.65	-5.9%	0.65	-5.9%	0.65	-5.9%
Burlingame	3.48	0.0%	3.34	0.0%	3.35	-5.9%	3.35	-5.9%	3.35	-5.9%	3.35	-5.9%
Coastside	1.02	0.0%	1.54	0.0%	1.23	-5.9%	1.23	-5.9%	1.23	-5.9%	1.23	-5.9%
CalWater Total	29.00	0.0%	29.66	0.0%	29.81	-5.9%	29.81	-5.9%	29.81	-5.9%	29.81	-5.9%
Daly City	3.97	0.0%	4.00	0.0%	4.01	-5.9%	4.01	-5.9%	4.01	-5.9%	4.01	-5.9%
East Palo Alto	1.57	0.0%	1.63	0.0%	1.69	-5.9%	1.69	-5.9%	1.69	-5.9%	1.69	-5.9%
Estero	4.34	0.0%	4.48	0.0%	4.51	-5.9%	4.51	-5.9%	4.51	-5.9%	4.51	-5.9%
Hayward	13.92	0.0%	14.47	0.0%	15.12	-5.9%	15.12	-5.9%	15.12	-5.9%	15.12	-5.9%
Hillsborough	2.62	0.0%	2.95	0.0%	3.05	-5.9%	3.05	-5.9%	3.05	-5.9%	3.05	-5.9%
Menlo Park	2.96	0.0%	2.92	0.0%	2.93	-5.9%	2.93	-5.9%	2.93	-5.9%	2.93	-5.9%
Mid-Peninsula	2.66	0.0%	2.65	0.0%	2.80	-5.9%	2.80	-5.9%	2.80	-5.9%	2.80	-5.9%
Millbrae	1.90	0.0%	1.95	0.0%	2.15	-5.9%	2.15	-5.9%	2.15	-5.9%	2.15	-5.9%
Milpitas	5.92	0.0%	5.88	0.0%	5.34	-5.9%	5.34	-5.9%	5.34	-5.9%	5.34	-5.9%
Mountain View	7.67	0.0%	7.80	0.0%	8.05	-5.9%	8.05	-5.9%	8.05	-5.9%	8.05	-5.9%
North Coast	2.37	0.0%	2.58	0.0%	2.66	-5.9%	2.66	-5.9%	2.66	-5.9%	2.66	-5.9%
Palo Alto	9.75	0.0%	9.44	0.0%	9.66	-5.9%	9.66	-5.9%	9.66	-5.9%	9.66	-5.9%
Purissima Hills	1.75	0.0%	1.97	0.0%	2.02	-5.9%	2.02	-5.9%	2.02	-5.9%	2.02	-5.9%
Redwood City	8.76	0.0%	8.72	0.0%	9.07	-5.9%	9.07	-5.9%	9.07	-5.9%	9.07	-5.9%
San Bruno	0.95	0.0%	3.39	0.0%	3.40	-5.9%	3.40	-5.9%	3.40	-5.9%	3.40	-5.9%
San José	4.26	0.0%	4.31	0.0%	4.51	-5.9%	4.51	-5.9%	4.51	-5.9%	4.51	-5.9%
Santa Clara	3.27	0.0%	3.29	0.0%	3.50	-5.9%	3.50	-5.9%	3.50	-5.9%	3.50	-5.9%
Stanford	1.43	0.0%	1.40	0.0%	1.54	-5.9%	1.54	-5.9%	1.54	-5.9%	1.54	-5.9%
Sunnyvale	9.33	0.0%	9.35	0.0%	9.45	-5.9%	9.45	-5.9%	9.45	-5.9%	9.45	-5.9%
Westborough	0.82	0.0%	0.84	0.0%	0.81	-5.9%	0.81	-5.9%	0.81	-5.9%	0.81	-5.9%
Wholesale Total	**132.2**	**132.2†**	**138.6**	**138.6†**	**140.8**	**132.5†**	**140.8**	**132.5†**	**140.8**	**132.5†**	**140.8**	**132.5†**

† Total supply available to the Wholesale Customers after drought cutback.

Attachment B: Updated 2020 UWMP Drought Cutbacks

Table E: Scenario 1: With Bay-Delta Plan - Projected Wholesale Customer RWS Demand and Percent Cutback for a Single Dry Year and Multiple Dry Years (Base Year 2025)

	2025 (184 MGD)		**2026** (82.8 MGD)		**2027** (74.5 MGD)		**2028** (74.5 MGD)		**2029** (74.5 MGD)	
Agency	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback
ACWD	7.68	0%	7.68	-43.3%	7.68	-49%	7.68	-49%	7.68	-49%
Brisbane/GVMID	0.89	0%	0.89	-43.3%	0.89	-49%	0.89	-49%	0.89	-49%
Burlingame	4.33	0%	4.33	-43.3%	4.33	-49%	4.33	-49%	4.33	-49%
Coastside	1.40	0%	1.40	-43.3%	1.40	-49%	1.40	-49%	1.40	-49%
CalWater Total	29.99	0%	29.99	-43.3%	29.99	-49%	29.99	-49%	29.99	-49%
Daly City	3.57	0%	3.57	-43.3%	3.57	-49%	3.57	-49%	3.57	-49%
East Palo Alto	1.88	0%	1.88	-43.3%	1.88	-49%	1.88	-49%	1.88	-49%
Estero	4.07	0%	4.07	-43.3%	4.07	-49%	4.07	-49%	4.07	-49%
Hayward	17.86	0%	17.86	-43.3%	17.86	-49%	17.86	-49%	17.86	-49%
Hillsborough	3.26	0%	3.26	-43.3%	3.26	-49%	3.26	-49%	3.26	-49%
Menlo Park	3.55	0%	3.55	-43.3%	3.55	-49%	3.55	-49%	3.55	-49%
Mid-Peninsula	2.86	0%	2.86	-43.3%	2.86	-49%	2.86	-49%	2.86	-49%
Millbrae	2.29	0%	2.29	-43.3%	2.29	-49%	2.29	-49%	2.29	-49%
Milpitas	6.59	0%	6.59	-43.3%	6.59	-49%	6.59	-49%	6.59	-49%
Mountain View	8.60	0%	8.60	-43.3%	8.60	-49%	8.60	-49%	8.60	-49%
North Coast	2.34	0%	2.34	-43.3%	2.34	-49%	2.34	-49%	2.34	-49%
Palo Alto	10.06	0%	10.06	-43.3%	10.06	-49%	10.06	-49%	10.06	-49%
Purissima Hills	2.09	0%	2.09	-43.3%	2.09	-49%	2.09	-49%	2.09	-49%
Redwood City	8.46	0%	8.46	-43.3%	8.46	-49%	8.46	-49%	8.46	-49%
San Bruno	3.24	0%	3.24	-43.3%	3.24	-49%	3.24	-49%	3.24	-49%
San José	4.50	0%	4.50	-43.3%	4.50	-49%	4.50	-49%	4.50	-49%
Santa Clara	4.50	0%	4.50	-43.3%	4.50	-49%	4.50	-49%	4.50	-49%
Stanford	2.01	0%	2.01	-43.3%	2.01	-49%	2.01	-49%	2.01	-49%
Sunnyvale	9.16	0%	9.16	-43.3%	9.16	-49%	9.16	-49%	9.16	-49%
Westborough	0.86	0%	0.86	-43.3%	0.86	-49%	0.86	-49%	0.86	-49%
Wholesale Total	**146.0**	**146.0†**	**146.0**	**82.8†**	**146.0**	**74.5†**	**146.0**	**74.5†**	**146.0**	**74.5†**

† Total supply available to the Wholesale Customers after drought cutback.

Attachment B: Updated 2020 UWMP Drought Cutbacks

Table F: Scenario 2: <u>Without</u> Bay-Delta Plan - Projected Wholesale Customer RWS Demand and Percent Cutback for a Single Dry Year and Multiple Dry Years (Base Year 2025)

	2025 (184 MGD)		**2026** (157.5 MGD)		**2027** (157.5 MGD)		**2028** (157.5 MGD)		**2029** (132.5 MGD)	
Agency	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback
ACWD	7.68	0.0%	7.68	0.0%	7.68	0.0%	7.68	0.0%	7.68	-9.2%
Brisbane/GVMID	0.89	0.0%	0.89	0.0%	0.89	0.0%	0.89	0.0%	0.89	-9.2%
Burlingame	4.33	0.0%	4.33	0.0%	4.33	0.0%	4.33	0.0%	4.33	-9.2%
Coastside	1.40	0.0%	1.40	0.0%	1.40	0.0%	1.40	0.0%	1.40	-9.2%
CalWater Total	29.99	0.0%	29.99	0.0%	29.99	0.0%	29.99	0.0%	29.99	-9.2%
Daly City	3.57	0.0%	3.57	0.0%	3.57	0.0%	3.57	0.0%	3.57	-9.2%
East Palo Alto	1.88	0.0%	1.88	0.0%	1.88	0.0%	1.88	0.0%	1.88	-9.2%
Estero	4.07	0.0%	4.07	0.0%	4.07	0.0%	4.07	0.0%	4.07	-9.2%
Hayward	17.86	0.0%	17.86	0.0%	17.86	0.0%	17.86	0.0%	17.86	-9.2%
Hillsborough	3.26	0.0%	3.26	0.0%	3.26	0.0%	3.26	0.0%	3.26	-9.2%
Menlo Park	3.55	0.0%	3.55	0.0%	3.55	0.0%	3.55	0.0%	3.55	-9.2%
Mid-Peninsula	2.86	0.0%	2.86	0.0%	2.86	0.0%	2.86	0.0%	2.86	-9.2%
Millbrae	2.29	0.0%	2.29	0.0%	2.29	0.0%	2.29	0.0%	2.29	-9.2%
Milpitas	6.59	0.0%	6.59	0.0%	6.59	0.0%	6.59	0.0%	6.59	-9.2%
Mountain View	8.60	0.0%	8.60	0.0%	8.60	0.0%	8.60	0.0%	8.60	-9.2%
North Coast	2.34	0.0%	2.34	0.0%	2.34	0.0%	2.34	0.0%	2.34	-9.2%
Palo Alto	10.06	0.0%	10.06	0.0%	10.06	0.0%	10.06	0.0%	10.06	-9.2%
Purissima Hills	2.09	0.0%	2.09	0.0%	2.09	0.0%	2.09	0.0%	2.09	-9.2%
Redwood City	8.46	0.0%	8.46	0.0%	8.46	0.0%	8.46	0.0%	8.46	-9.2%
San Bruno	3.24	0.0%	3.24	0.0%	3.24	0.0%	3.24	0.0%	3.24	-9.2%
San José	4.50	0.0%	4.50	0.0%	4.50	0.0%	4.50	0.0%	4.50	-9.2%
Santa Clara	4.50	0.0%	4.50	0.0%	4.50	0.0%	4.50	0.0%	4.50	-9.2%
Stanford	2.01	0.0%	2.01	0.0%	2.01	0.0%	2.01	0.0%	2.01	-9.2%
Sunnyvale	9.16	0.0%	9.16	0.0%	9.16	0.0%	9.16	0.0%	9.16	-9.2%
Westborough	0.86	0.0%	0.86	0.0%	0.86	0.0%	0.86	0.0%	0.86	-9.2%
Wholesale Total	**146.0**	**146.0†**	**146.0**	**146.4†**	**146.0**	**146.8†**	**146.0**	**147.1†**	**146.0**	**132.5†**

† Total supply available to the Wholesale Customers after drought cutback.

Attachment B: Updated 2020 UWMP Drought Cutbacks

UWMP Table 7-4

Supply Reliability Letter Tables 7 and 8 will help your agency complete UWMP Table 7-4. Table G below provides a summary of the Member Agencies' RWS supply drought cutbacks under each of the four supply availability conditions and is intended to help you complete UWMP Table 7-4. The table assumes (1) the Tier 2 Plan will be used to allocate supplies available to the Wholesale Customers when average Wholesale Customers' RWS shortages are greater than 10 and up to 20 percent, and (2) an equal percent reduction will be shared across all Wholesale Customers when average Wholesale Customers' RWS shortages are 10 percent or less or greater than 20 percent.

Table G: Drought Cutbacks Based on Projected Demands Under All Water Supply Availability Conditions

	(a)	(b)	(c)	(d)	(e)	(f)
(1)	Projected SF RWS Wholesale Purchases	146.0 MGD	147.9 MGD	151.9 MGD	156.3 MGD	162.8 MGD
(2)	Supply Available to the Wholesale Customers	% Cutback on Wholesale RWS Purchases **2025**	**2030**	**2035**	**2040**	**2045**
(3)	157.5 MGD	0.0%	0.0%	0.0%	0.0%	-3.2%
(4)	132.5 MGD	-9.3%	-10.4%	Tier 2 Avg. -14%*	Tier 2 Avg. -16%*	Tier 2 Avg. -19%*
(5)	82.8 MGD	-43.3%	-44.0%	-45.5%	-47.0%	-49.1%
(6)	74.5 MGD	-49.0%	-49.6%	-51.0%	-52.3%	-54.2%

* Calculated average. Individual agency cutbacks are calculated in Table H.

Table G, column (a) lists total RWS supplies available to the Wholesale Customers as provided in the Supply Reliability Letter tables. Row 1 provides cumulative projected wholesale RWS purchases for 2025, 2030, 2035, 2040, and 2045.

Tables H, I, J and K provide additional detail by agency for each of the four supply availability conditions listed in Table G. To complete UWMP Table 7-4, reference Table 7 or 8 (depending on which Bay-Delta Plan scenario you choose) in the Supply Reliability Letter to identify total RWS supplies available to the Wholesale Customers and apply the percent cutback in the corresponding year using Table G or input the volumetric drought allocation using Tables H, I, J and K below.

Attachment B: Updated 2020 UWMP Drought Cutbacks

Table H: Drought Allocations when Total Supplies Available to the Wholesale Customers are Equal to 157.5 MGD

Projected SF RWS Wholesale Purchases	146.0 MGD	147.9 MGD	151.9 MGD	156.3 MGD	162.8 MGD
	Drought Allocation (MGD)				
Agency	**2025**	**2030**	**2035**	**2040**	**2045**
ACWD	7.68	7.68	7.68	7.68	8.82
Brisbane/GVMID	0.89	0.89	0.88	0.89	0.87
Burlingame	4.33	4.40	4.47	4.58	4.54
Coastside	1.40	1.38	1.36	1.33	1.28
CalWater Total	29.99	29.74	29.81	30.27	29.71
Daly City	3.57	3.52	3.49	3.46	3.32
East Palo Alto	1.88	1.95	2.10	2.49	2.80
Estero	4.07	4.11	4.18	4.23	4.24
Hayward	17.86	18.68	19.75	20.82	21.43
Hillsborough	3.26	3.25	3.26	3.26	3.15
Menlo Park	3.55	3.68	3.87	4.06	4.15
Mid-Peninsula	2.86	2.84	2.88	2.89	2.83
Millbrae	2.29	2.50	2.45	2.82	3.10
Milpitas	6.59	6.75	7.03	7.27	7.29
Mountain View	8.60	8.90	9.20	9.51	9.61
North Coast	2.34	2.33	2.34	2.34	2.27
Palo Alto	10.06	10.15	10.28	10.51	10.44
Purissima Hills	2.09	2.09	2.12	2.13	2.08
Redwood City	8.46	8.49	8.64	8.74	8.62
San Bruno	3.24	3.22	3.20	3.20	3.11
San José	4.50	4.50	4.50	4.50	4.35
Santa Clara	4.50	4.50	4.50	4.50	4.35
Stanford	2.01	2.18	2.35	2.53	2.61
Sunnyvale	9.16	9.30	10.70	11.44	11.71
Westborough	0.86	0.85	0.85	0.84	0.82
Wholesale Total	**146.0**	**147.9**	**151.9**	**156.3**	**157.5**

Attachment B: Updated 2020 UWMP Drought Cutbacks

Table I: Drought Allocations when Total Supplies Available to the Wholesale Customers are Equal to 132.5 MGD

Projected SF RWS Wholesale Purchases	146.0 MGD	147.9 MGD	151.9 MGD	156.3 MGD	162.8 MGD
	Drought Allocation (MGD)				
Agency	**2025**	**2030**	**2035**	**2040**	**2045**
ACWD	6.97	6.88	6.91	6.91	8.20
Brisbane/GVMID	0.81	0.79	0.73	0.73	0.72
Burlingame	3.93	3.94	3.96	3.89	3.80
Coastside	1.27	1.24	1.22	1.20	1.19
CalWater Total	27.21	26.65	26.46	25.69	24.69
Daly City	3.24	3.15	3.04	3.01	2.98
East Palo Alto	1.70	1.75	1.97	2.30	2.62
Estero	3.69	3.68	3.76	3.87	3.77
Hayward	16.20	16.74	17.32	17.69	18.07
Hillsborough	2.96	2.92	2.90	2.75	2.56
Menlo Park	3.22	3.30	3.37	3.33	3.26
Mid-Peninsula	2.59	2.54	2.59	2.62	2.54
Millbrae	2.07	2.24	2.16	2.32	2.45
Milpitas	5.98	6.05	6.25	6.31	6.35
Mountain View	7.80	7.97	8.28	8.49	8.34
North Coast	2.12	2.09	2.11	2.11	2.11
Palo Alto	9.13	9.09	9.26	9.46	9.71
Purissima Hills	1.89	1.87	1.42	1.38	1.32
Redwood City	7.67	7.61	7.89	7.70	7.49
San Bruno	2.94	2.88	2.56	2.51	2.45
San José	4.08	4.03	3.03	2.91	2.76
Santa Clara	4.08	4.03	3.03	2.91	2.76
Stanford	1.82	1.95	2.06	2.13	2.16
Sunnyvale	8.31	8.33	9.46	9.51	9.43
Westborough	0.78	0.76	0.76	0.76	0.76
Wholesale Total	**132.5**	**132.5**	**132.5**	**132.5**	**132.5**

Attachment B: Updated 2020 UWMP Drought Cutbacks

Table J: Drought Allocations when Total Supplies Available to the Wholesale Customers are Equal to 82.8 MGD

Projected SF RWS Wholesale Purchases	146.0 MGD	147.9 MGD	151.9 MGD	156.3 MGD	162.8 MGD
	Drought Allocation (MGD)				
Agency	**2025**	**2030**	**2035**	**2040**	**2045**
ACWD	4.36	4.30	4.19	4.07	4.64
Brisbane/GVMID	0.51	0.50	0.48	0.47	0.45
Burlingame	2.45	2.46	2.44	2.43	2.39
Coastside	0.79	0.77	0.74	0.71	0.68
CalWater Total	17.00	16.65	16.25	16.03	15.62
Daly City	2.02	1.97	1.90	1.83	1.75
East Palo Alto	1.06	1.09	1.14	1.32	1.47
Estero	2.31	2.30	2.28	2.24	2.23
Hayward	10.13	10.46	10.77	11.03	11.26
Hillsborough	1.85	1.82	1.78	1.73	1.66
Menlo Park	2.01	2.06	2.11	2.15	2.18
Mid-Peninsula	1.62	1.59	1.57	1.53	1.49
Millbrae	1.30	1.40	1.34	1.49	1.63
Milpitas	3.74	3.78	3.83	3.85	3.83
Mountain View	4.88	4.98	5.01	5.04	5.05
North Coast	1.33	1.30	1.28	1.24	1.19
Palo Alto	5.71	5.68	5.61	5.57	5.49
Purissima Hills	1.18	1.17	1.15	1.13	1.10
Redwood City	4.80	4.76	4.71	4.63	4.53
San Bruno	1.83	1.80	1.75	1.70	1.63
San José	2.55	2.52	2.45	2.38	2.29
Santa Clara	2.55	2.52	2.45	2.38	2.29
Stanford	1.14	1.22	1.28	1.34	1.37
Sunnyvale	5.19	5.21	5.83	6.06	6.16
Westborough	0.49	0.48	0.46	0.45	0.43
Wholesale Total	**82.8**	**82.8**	**82.8**	**82.8**	**82.8**

Attachment B: Updated 2020 UWMP Drought Cutbacks

Table K: Drought Allocations when Total Supplies Available to the Wholesale Customers are Equal to 74.5 MGD

Projected SF RWS Wholesale Purchases	146.0 MGD	147.9 MGD	151.9 MGD	156.3 MGD	162.8 MGD
	Drought Allocation (MGD)				
Agency	**2025**	**2030**	**2035**	**2040**	**2045**
ACWD	3.92	3.87	3.77	3.66	4.17
Brisbane/GVMID	0.46	0.45	0.43	0.42	0.41
Burlingame	2.21	2.21	2.19	2.18	2.15
Coastside	0.71	0.70	0.67	0.64	0.61
CalWater Total	15.30	14.98	14.62	14.43	14.05
Daly City	1.82	1.77	1.71	1.65	1.57
East Palo Alto	0.96	0.98	1.03	1.19	1.32
Estero	2.08	2.07	2.05	2.02	2.00
Hayward	9.11	9.41	9.69	9.92	10.14
Hillsborough	1.66	1.64	1.60	1.55	1.49
Menlo Park	1.81	1.86	1.90	1.94	1.96
Mid-Peninsula	1.46	1.43	1.41	1.38	1.34
Millbrae	1.17	1.26	1.20	1.34	1.47
Milpitas	3.36	3.40	3.45	3.47	3.45
Mountain View	4.39	4.48	4.51	4.53	4.54
North Coast	1.19	1.17	1.15	1.12	1.07
Palo Alto	5.14	5.11	5.04	5.01	4.94
Purissima Hills	1.06	1.05	1.04	1.02	0.99
Redwood City	4.31	4.28	4.24	4.17	4.08
San Bruno	1.65	1.62	1.57	1.53	1.47
San José	2.30	2.27	2.21	2.14	2.06
Santa Clara	2.30	2.27	2.21	2.14	2.06
Stanford	1.03	1.10	1.15	1.21	1.24
Sunnyvale	4.67	4.69	5.25	5.45	5.54
Westborough	0.44	0.43	0.41	0.40	0.39
Wholesale Total	**74.5**	**74.5**	**74.5**	**74.5**	**74.5**

San Francisco
Water Power Sewer
Services of the San Francisco Public Utilities Commission

525 Golden Gate Avenue, 13th Floor
San Francisco, CA 94102
T 415.554.3155
F 415.554.3161
TTY 415.554.3488

TO: SFPUC Wholesale Customers

FROM: Steven R. Ritchie, Assistant General Manager, Water

DATE: June 2, 2021

RE: Regional Water System Supply Reliability and UWMP 2020

This memo is in response to various comments from Wholesale Customers we have received regarding the reliability of the Regional Water System supply and San Francisco's 2020 Urban Water Management Plan (UWMP).

As you are all aware, the UWMP makes clear the potential effect of the amendments to the Bay-Delta Water Quality Control Plan adopted by the State Water Resources Control Board on December 12, 2018 should it be implemented. Regional Water System-wide water supply shortages of 40-50% could occur until alternative water supplies are developed to replace those shortfalls. Those shortages could increase dramatically if the State Water Board's proposed Water Quality Certification of the Don Pedro Federal Energy Regulatory Commission (FERC) relicensing were implemented.

We are pursuing several courses of action to remedy this situation as detailed below.

Pursuing a Tuolumne River Voluntary Agreement

The State Water Board included in its action of December 12, 2018 a provision allowing for the development of Voluntary Agreements as an alternative to the adopted Plan. Together with the Modesto and Turlock Irrigation Districts, we have been actively pursuing a Tuolumne River Voluntary Agreement (TRVA) since January 2017. We believe the TRVA is a superior approach to producing benefits for fish with a much more modest effect on our water supply. Unfortunately, it has been a challenge to work with the State on this, but we continue to persist, and of course we are still interested in early implementation of the TRVA.

Evaluating our Drought Planning Scenario in light of climate change

Ever since the drought of 1987-92, we have been using a Drought Planning Scenario with a duration of 8.5 years as a stress test of our Regional Water System supplies. Some stakeholders have criticized this methodology as being too conservative. This fall we anticipate our Commission convening a workshop regarding our use of the 8.5-year Drought Planning Scenario, particularly in light of climate change resilience assessment work that we have funded through the Water Research Foundation. We look forward to a valuable discussion with our various stakeholders and the Commission.

Pursuing Alternative Water Supplies

The SFPUC continues to aggressively pursue Alternative Water Supplies to address whatever shortfall may ultimately occur pending the outcome of negotiation and/or litigation. The most extreme degree of Regional Water System supply shortfall is modeled to be 93 million gallons per day under implementation of the Bay-Delta Plan amendments. We are actively pursuing more than a dozen projects, including recycled water for irrigation, purified water for potable use, increased reservoir storage and conveyance, brackish water desalination, and partnerships with other agencies, particularly the Turlock and Modesto Irrigation Districts. Our goal is to have a suite of alternative water supply projects ready for CEQA review by July 1, 2023.

In litigation with the State over the Bay-Delta Plan Amendments

On January 10, 2019, we joined in litigation against the State over the adoption of the Bay-Delta Water Quality Control Plan Amendments on substantive and procedural grounds. The lawsuit was necessary because there is a statute of limitations on CEQA cases of 30 days, and we needed to preserve our legal options in the event that we are unsuccessful in reaching a voluntary agreement for the Tuolumne River. Even then, potential settlement of this litigation is a possibility in the future.

In litigation with the State over the proposed Don Pedro FERC Water Quality Certification

The State Water Board staff raised the stakes on these matters by issuing a Water Quality Certification for the Don Pedro FERC relicensing on January 15, 2021 that goes well beyond the Bay-Delta Plan amendments. The potential impact of the conditions included in the Certification appear to virtually double the water supply impact on our Regional Water System of the Bay-Delta Plan amendments. We requested that the State Water Board reconsider the Certification, including conducting hearings on it, but the State Water Board took no action. As a result, we were left with no choice but to once again file suit against the State. Again, the Certification includes a clause that it could be replaced by a Voluntary Agreement, but that is far from a certainty.

I hope this makes it clear that we are actively pursuing all options to resolve this difficult situation. We remain committed to creating benefits for the Tuolumne River while meeting our Water Supply Level of Service Goals and Objectives for our retail and wholesale customers.

cc.: SFPUC Commissioners
Nicole Sandkulla, CEO/General Manager, BAWSCA

APPENDIX G
WATER QUALITY REPORT

Burlingame

2020 WATER QUALITY REPORT

PWSID# CA4110003

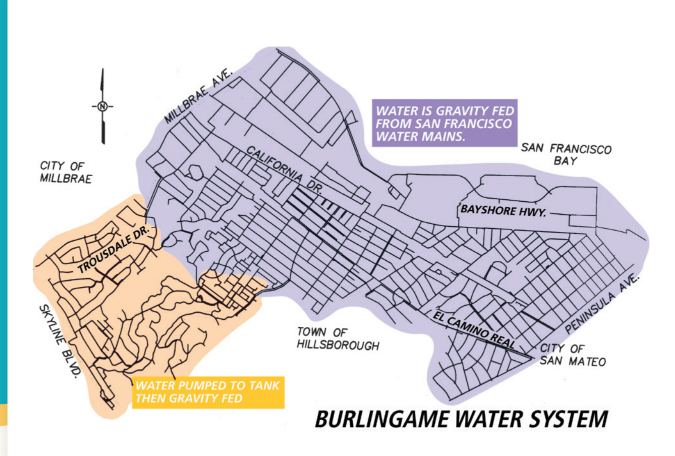
This report contains important information about our drinking water. Translate it, or speak with someone who understands it.
Este informe contiene información muy importante sobre su agua para beber. Tradúzcalo o hable con alguien que lo entienda bien.
此份水質報告，內有重要資訊。請找他人為你翻譯和解說清楚。

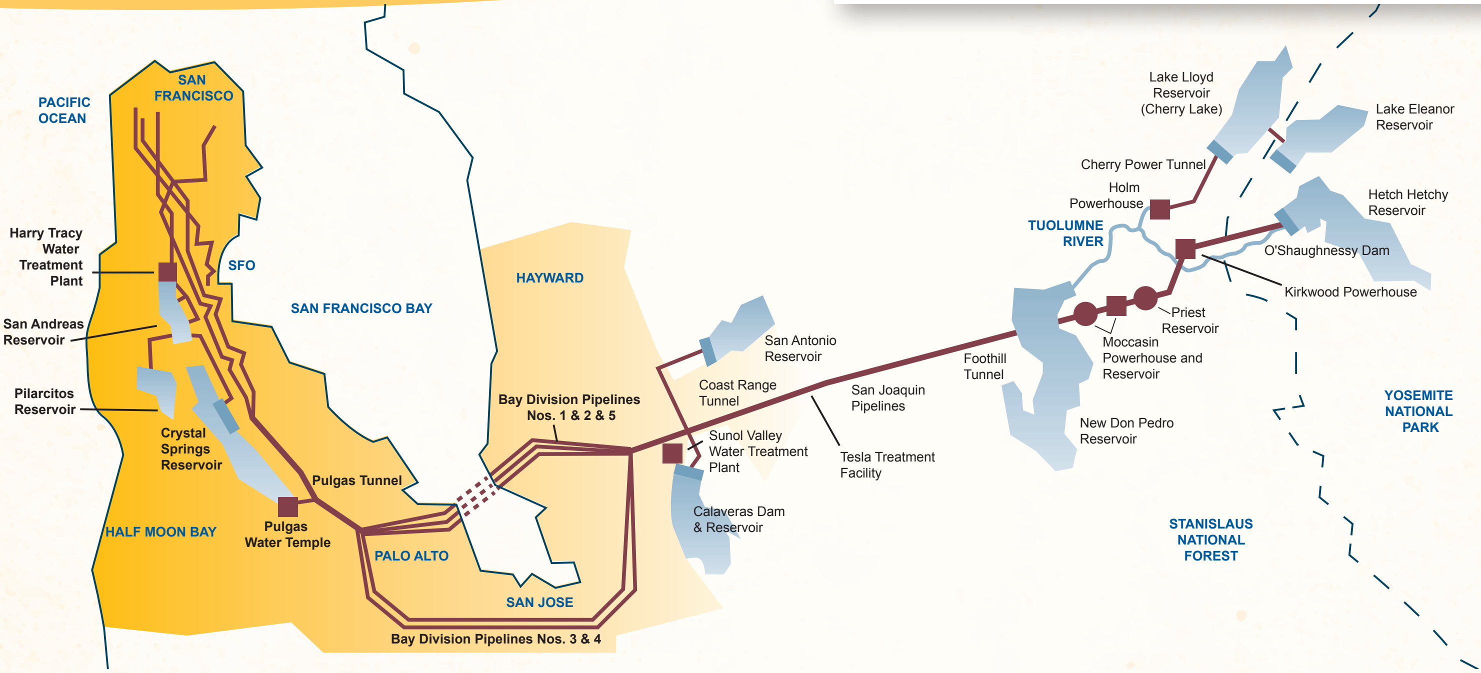
Our Mission:
QUALITY WATER

The City of Burlingame in coordination with the San Francisco Public Utilities Commission (SFPUC) is pleased to present our 2020 Annual Water Quality Consumer Confidence Report. We want our customers to know where their water comes from, how it is treated to ensure it is top quality and the results of water quality monitoring performed by the City of Burlingame and the SFPUC. With this knowledge, consumers can make health decisions concerning their water use. The SFPUC provides high-quality, reliable water service to 2.7 million residents in the Bay Area, rain or shine, as the result of decades of proactive planning. The City of Burlingame and the SFPUC are committed to customer service and providing you with high quality water.

BURLINGAME WATER SYSTEM SERVICE AREA

The City of Burlingame purchases all of its water from San Francisco Public Utilities Commission (SFPUC). The San Francisco Regional Water System (SFRWS) has several large pipelines running through town. We have several metered connections at various locations throughout the city. These connections feed directly into the Aqueduct Zone (purple area on map). Water is pumped to the higher elevations by booster pump stations and to storage reservoirs. The City of Burlingame has several pressure reducing valves to regulate the water pressure in higher elevation areas.





Our Drinking Water Sources and Treatment

The San Francisco Regional Water System (SFRWS)'s major drinking water supply consists of surface water and groundwater that are well protected and carefully managed by the San Francisco Public Utilities Commission (SFPUC). These sources are diverse in both the origin and the location with the surface water stored in reservoirs located in the Sierra Nevada, Alameda County and San Mateo County, and groundwater stored in a deep aquifer located in the northern part of San Mateo County.

To meet drinking water standards for consumption, all surface water supplies from SFRWS undergo treatment before it is delivered to our customers. Water from the Hetch Hetchy Reservoir is exempt from state and federal filtration requirements but receives the following treatment: ultraviolet light and chlorine disinfection, pH adjustment for optimum corrosion control, fluoridation for dental health protection, and chloramination for maintaining disinfectant residual and minimizing the formation of regulated disinfection byproducts. Water from local Bay Area reservoirs in Alameda County and San Mateo County is delivered to Sunol Valley Water Treatment Plant (SVWTP) and Harry Tracy Water Treatment Plant (HTWTP), respectively, and is treated by filtration, disinfection, fluoridation, optimum corrosion control and taste and odor removal processes. In 2020, a small amount of groundwater from five of the eight recently completed wells was intermittently added to the SFRWS's surface water supply.

Watersheds Protection

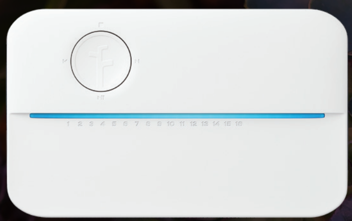
SFRWS conducts watershed sanitary surveys for the Hetch Hetchy source annually and for non-Hetch Hetchy surface water sources every five years. The latest sanitary surveys for the non-Hetch Hetchy watersheds were completed in 2021 for the period of 2016-2020. All these surveys together with our stringent watershed protection management activities were completed with support from partner agencies including National Park Service and US Forest Service. The purposes of the surveys are to evaluate the sanitary conditions and water quality of the watersheds and to review results of watershed management activities conducted in the preceding years. Wildlife, stock, and human activities continue to be the potential contamination sources. You may contact the San Francisco District office of the State Water Resources Control Board's Division of Drinking Water (SWRCB-DDW) at 510-620-3474 for the review of these reports.

● ● ● WATER MAIN FLUSHING PROGRAM

The Burlingame Public Works Water Division routinely flushes water mains throughout the City in order to maintain water quality and remove sediment that may be present. Tuberculation (a form of corrosion inside iron pipes) and sediment can discolor water, and over time, impede the flow of water through the distribution system. The mains are flushed through a systematic opening and closing of valves to force the flow of water in one direction. This technique, known as unidirectional flushing, allows section by section of pipeline to be cleaned, which reduces the amount of water required to effectively clean the pipeline distribution system.

For more information about water main flushing, go to **www.burlingame.org/watermainflushing**

Conservation Programs and Resources



Smart Irrigation Controller Program

The City of Burlingame is partnering with Rachio to offer single-family residential customers a discount on the Rachio 3 Smart Sprinkler Controller. This device helps you monitor and manage watering your lawn from anywhere using a smartphone app. You can create tailored schedules, make automatic weather adjustments, and maintain a water-efficient yard.

Rain Barrel Rebate

Capture rainwater to use later for watering your plants and save up to $200 off a qualifying barrel.

Free Landscape Classes

Learn how to garden beautifully while reducing your water use. Visit **www.bawsca.org/classes** for a list of upcoming workshops.

*Burlingame residents and property owners are eligible for a range of water conservation rebates and resources. For more information on these programs, please visit **www.burlingame.org/waterconservation***

Conservation Tips

Test your toilets for leaks at least once a year.

Use a WaterSense® labeled showerhead.

When upgrading your clothes washing machine, choose an Energy Star model.

Spread a layer of organic mulch on your plants to reduce evaporation.

Replace turf lawns with California native plants since they are adapted to this climate and have lower watering needs.

Monitor your water bill for unusually high water use.

CITY OF BURLINGAME - WATER QUALITY DATA FOR YEAR 2020 [1]

The table below lists all 2020 detected drinking water contaminants and the information about their typical sources. Contaminants below detection limits for reporting are not shown, in accordance with regulatory guidance. SFRWS holds a SWRCB-DDW monitoring waiver for some contaminants in its surface water supply and therefore the associated monitoring frequencies are less than annual.

DETECTED CONTAMINANTS	Unit	MCL	PHG or (MCLG)	Range or Level Found	Average or [Max]	Major Sources in Drinking Water
TURBIDITY						
Unfiltered Hetch Hetchy Water	NTU	5	N/A	0.2 - 0.5 [2]	[1.3]	Soil runoff
Filtered Water from Sunol Valley Water Treatment Plant (SVWTP)	NTU	1 [3]	N/A	-	[1]	Soil runoff
	-	Min 95% of samples ≤ 0.3 NTU [3]	N/A	99.8% - 100%	-	Soil runoff
Filtered Water from Harry Tracy Water Treatment Plant (HTWTP)	NTU	1 [3]	N/A	-	[0.1]	Soil runoff
	-	Min 95% of samples ≤ 0.3 NTU [3]	N/A	100%	-	Soil runoff
DISINFECTION BYPRODUCTS AND PRECURSOR						
Total Trihalomethanes	ppb	80	N/A	26.0 - 44.2	[44.6] [4]	Byproduct of drinking water disinfection
Haloacetic Acids	ppb	60	N/A	17.0 - 26.0	[31.5] [4]	Byproduct of drinking water disinfection
Total Organic Carbon [5]	ppm	TT	N/A	1.7 - 3.4	2.9	Various natural and man-made sources
MICROBIOLOGICAL						
Total Coliform	-	NoP ≤ 5.0% of monthly samples	(0)	-	[0%]	Naturally present in the environment
Giardia lamblia	cyst/L	TT	(0)	0 - 0.05	0.01	Naturally present in the environment
INORGANICS						
Fluoride (source water) [6]	ppm	2.0	1	ND - 0.7	0.3 [7]	Erosion of natural deposits; water additive to promote strong teeth
Chloramine (as chlorine)	ppm	MRDL = 4.0	MRDLG = 4	0.09 - 3.03	[2.53] [8]	Drinking water disinfectant added for treatment
CONSTITUENTS WITH SECONDARY STANDARDS	**Unit**	**SMCL**	**PHG**	**Range**	**Average**	**Major Sources of Contaminant**
Chloride	ppm	500	N/A	<3 - 15	8.7	Runoff / leaching from natural deposits
Specific Conductance	μS/cm	1600	N/A	30 - 260	160	Substances that form ions when in water
Sulfate	ppm	500	N/A	1 - 34	17	Runoff / leaching from natural deposits
Total Dissolved Solids	ppm	1000	N/A	<20 - 137	72	Runoff / leaching from natural deposits
Turbidity	NTU	5	N/A	ND - 0.2	ND	Soil runoff
LEAD AND COPPER	**Unit**	**AL**	**PHG**	**Range**	**90th Percentile**	**Major Sources in Drinking Water**
Copper	ppb	1300	300	1.6 - 57.4 [9]	40	Internal corrosion of household water plumbing systems
Lead	ppb	15	0.2	0 - 2.4 [10]	1.3	Internal corrosion of household water plumbing systems

OTHER WATER QUALITY PARAMETERS	Unit	ORL	Range	Average
Alkalinity (as $CaCO_3$)	ppm	N/A	6.7 - 138	55
Calcium (as Ca)	ppm	N/A	2.9 - 22	12
Chlorate [11]	ppb	800 (NL)	67 - 1200	262
Hardness (as $CaCO_3$)	ppm	N/A	8.0 - 79	45
Magnesium	ppm	N/A	0.2 - 6.8	4.0
pH	-	N/A	8.6 - 9.8	9.3
Potassium	ppm	N/A	0.3 - 1.3	0.8
Silica	ppm	N/A	2.8 - 7	4.8
Sodium	ppm	N/A	2.4 - 22	14
Strontium	ppb	N/A	14 - 242	110

KEY:

- < / ≤ = less than / less than or equal to
- AL = Action Level
- Max = Maximum
- Min = Minimum
- N/A = Not Available
- ND = Non-detect
- NL = Notification Level
- NoP = Number of Coliform-Positive Sample
- NTU = Nephelometric Turbidity Unit
- ORL = Other Regulatory Level
- pCi/L = picocurie per liter
- ppb = part per billion
- ppm = part per million
- μS/cm = microSiemens/centimeter

Footnotes:

(1) All results met State and Federal drinking water health standards.

(2) These are monthly average turbidity values measured every 4 hours daily.

(3) There is no turbidity MCL for filtered water. The limits are based on the TT requirements for filtration systems.

(4) This is the highest locational running annual average value.

(5) Total organic carbon is a precursor for disinfection byproduct formation. The TT requirement applies to the filtered water from the SVWTP only.

(6) The SWRCB recommended an optimal fluoride level of 0.7 ppm be maintained in the treated water. In 2020, the range and average of the fluoride levels were 0.6 ppm - 0.9 ppm and 0.7 ppm, respectively.

(7) The natural fluoride level in the Hetch Hetchy supply was ND. Elevated fluoride levels in the SVWTP and HTWTP raw water were attributed to the transfer of fluoridated Hetch Hetchy water into the local reservoirs.

(8) This is the highest running annual average value.

(9) The most recent Lead and Copper Rule monitoring was in 2019. Zero of the 30 site samples collected at consumer taps had copper concentrations above the AL.

(10) The most recent Lead and Copper Rule monitoring was in 2019. Zero of the 30 site samples collected at consumer taps had lead concentrations above the AL.

(11) The detected chlorate in the treated water is a degradation product of sodium hypochlorite used by the SFRWS for water disinfection.

Note: Data shown in the table on the left are based on Hetch Hetchy water and effluents from both SVWTP and HTWTP. Additional water quality data may be obtained by calling the City of Burlingame at 650-558-7670.

Fluoridation and Dental Fluorosis

Mandated by State law, water fluoridation is a widely accepted practice proven to be safe and effective for preventing and controlling tooth decay. The fluoride target level in the water is 0.7 milligram per liter (mg/L, or part per million, ppm), consistent with the May 2015 State regulatory guidance on optimal fluoride level. Infants fed formula mixed with water containing fluoride at this level may still h ave a chance of developing tiny white lines or streaks in their teeth. These marks are referred to as mild to very mild fluorosis, and are often only visible under a microscope. Even in cases where the marks are visible, they do not pose any health risk. The Centers of Disease Control (CDC) considers it safe to use optimally fluoridated water for preparing infant formula. To lessen this chance of dental fluorosis, you may choose to use low-fluoride bottled water to prepare infant formula. Nevertheless, children may still develop dental fluorosis due to fluoride intake from other sources such as food, toothpaste, and dental products.

Contact your healthcare provider or SWRCB-DDW if you have concerns about dental fluorosis. For additional information about fluoridation or oral health, visit the SWRCB-DDW website **www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/Fluoridation.shtml**, or the CDC website **www.cdc.gov/fluoridation**.

Special Health Needs

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons, such as those with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly people and infants, can be particularly at risk from infections.

These people should seek advice about drinking water from their healthcare providers. USEPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the USEPA's Safe Drinking Water Hotline 800-426-4791 or at **www.epa.gov/safewater**.

Monitoring of Per- and Polyfluoroalkyl Substances (PFAS)

PFAS is a group of approximately 5,000 man-made chemicals used in a variety of industries and consumer products. These chemicals are very persistent in the environment and human body. SFRWS conducted a special round of PFAS monitoring of its surface water sources and transmission system in 2019 and five groundwater wells in September 2020. The monitoring effort was entirely proactive and voluntary with the objective to identify if SFRWS's water supplies are impacted by PFAS. Using the State's stringent sampling procedures and based on the approved/certified method of analysis for 18 PFAS contaminants, SFRWS confirmed no PFAS was detected in its water sources and transmission system. Considering USEPA's recent development of a newer method of analysis for additional PFAS contaminants, SFRWS intends to conduct another round of monitoring when the new analytical method is available at its contract laboratory. For additional information about PFAS, visit SWRCB-DDW website **waterboards.ca.gov/pfas** and/or USEPA website **epa.gov/pfas.**

Contaminants and Regulations

Generally, the sources of drinking water (both tap water and bottled water) include rivers, lakes, oceans, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Such substances are called contaminants, and may be present in source water as:

- **Microbial contaminants**, such as viruses and bacteria that may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife,
- **Inorganic contaminants,** such as salts and metals, that can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming,
- **Pesticides and herbicides** that may come from a variety of sources such as agriculture, urban stormwater runoff and residential uses,
- **Organic chemical contaminants,** including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural application and septic systems,
- **Radioactive contaminants,** which can be naturally occurring or be the result of oil and gas production and mining activities.

More information about contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline 800-426-4791, or at **www.epa.gov/safewater**.

Cryptosporidium is a parasitic microbe found in most surface water. SFRWS regularly tests for this waterborne pathogen and found it at very low levels in source water and treated water in 2020. However, current test methods approved by the USEPA do not distinguish between dead organisms and those capable of causing disease. Ingestion of *Cryptosporidium* may produce symptoms of nausea, abdominal cramps, diarrhea, and associated headaches. *Cryptosporidium* must be ingested to cause disease, and it may be spread through means other than drinking water.

KEY WATER QUALITY TERMS

The following are definitions of key terms referring to standards and goals of water quality noted on the data table.

Public Health Goal (PHG): The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the USEPA.

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs or MCLGs as is economically and technologically feasible. Secondary MCLs (SMCLs) are set to protect the odor, taste, and appearance of drinking water.

Maximum Residual Disinfectant Level (MRDL): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Primary Drinking Water Standard (PDWS): MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

Regulatory Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

Turbidity: A water clarity indicator that measures cloudiness of the water, and is also used to indicate the effectiveness of the filtration system. High turbidity can hinder the effectiveness of disinfectants.

Variances and Exemptions: State Board permission to exceed an MCL or not comply with a treatment technique under certain conditions.

PWSID#: The Public Water System Identification Number

WATER QUALITY

SFRWS regularly collects and tests water samples from reservoirs and designated sampling points throughout the sources and the transmission system to ensure the water delivered to you meets or exceeds federal and State drinking water standards. In 2020, SFRWS conducted more than 47,200 drinking water tests in the sources and the transmission system. This is in addition to the extensive treatment process control monitoring performed by SFRWS's certified operators and online instruments.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. In order to ensure that tap water is safe to drink, the United States Environmental Protection Agency (USEPA) and the SWRCB-DDW prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The U.S. Food and Drug Administration regulations and California law also establish limits for contaminants in bottled water that provide the same protection for public health.

DRINKING WATER AND LEAD

Exposure to lead, if present, can cause serious health effects in all age groups, especially for pregnant women and young children. Infants and children who drink water containing lead could have decreases in IQ and attention span and increases in learning and behavior problems. The children of women who are exposed to lead before or during pregnancy can have increased risk of these adverse health effects. Adults can have increased risks of heart disease, high blood pressure, kidney or nervous system problems.

Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. There are no known lead service lines in our water distribution system. We are responsible for providing high quality drinking water and removing lead pipes, but we cannot control the variety of materials used in plumbing components in your home. You share the responsibility for protecting yourself and your family from the lead in your home plumbing. You can take responsibility by identifying and removing lead materials within your home plumbing and taking steps to reduce your family's risk. Before drinking tap water, flush your pipes for several minutes by running your tap, taking a shower, doing laundry or a load of dishes. You can also use a filter certified by an American National Standards Institute accredited certifier to remove lead from drinking water. Information about lead in drinking water, testing methods, and steps you can take to minimize exposure is available at **www.epa.gov/safewater/lead.**

As previously reported in 2018, we completed an inventory of lead user service lines (LUSL) in our system and there are no known pipelines and connectors between water mains and meters made of lead. Our policy is to remove and replace any LUSL promptly if it is discovered during pipeline repair and/or maintenance.

Lead and Copper Tap Sampling Results

We conducted the triennial Lead and Copper Rule (LCR) monitoring in 2019, and these tap sampling results are accessible at our website at **www.burlingame.org/waterquality.** The next round of LCR monitoring will be conducted in 2022.

FOR MORE INFORMATION

If you would like additional information or if you have any questions concerning the City of Burlingame's testing data or water distribution system, please call the Public Works Corporation Yard at (650) 558-7670, or write to Public Works Corporation Yard, Attn: Water Quality Report, 1361 N. Carolan Avenue, Burlingame, CA 94010. You may also wish to visit **www.burlingame.org/waterquality.**

Decisions about our drinking water are made from time to time in public meetings. The City of Burlingame City Council meets twice a month on the first and third Monday at 7:00 p.m. in the Council Chambers at City Hall. The San Francisco Public Utilities Commission (SFPUC) meets twice a month on the second and fourth Tuesday at 1:30 p.m. Meetings are held at San Francisco City Hall, Room 400. Inquiries about these meetings can be made by calling the office of the Commission Secretary at (415) 554-3165 or visit their website at **www.sfwater.org.**

Do you want to learn more about drinking water regulations?
Visit the State Water Resources Control Board at www.swrcb.ca.gov, or the U.S. Environmental Protection Agency website at **www.epa.gov.**

City of Burlingame
Public Works Corporation Yard, (650) 558-7670
www.burlingame.org

San Francisco Public Utilities Commission
Water Quality Bureau, (650) 872-5950
Customer Service Bureau, (415) 551-3000
www.sfwater.org

State Water Resources Control Board
District 17 - Santa Clara/San Mateo, (510) 620-3474
Home Treatment Device Certification Unit, (916) 327-1140
www.swrcb.ca.gov

Safe Drinking Water Hotline
(800) 426-4791
www.epa.gov

APPENDIX H
MARCH 26, 2021 SFPUC COMISSION SPECIAL MEETING – WATER WORKSHOP NUMBER 3 WATER SUPPLY PLANNING SCENARIOS SFPUC STAFF PRESENTATION MATERIALS

Hetch Hetchy
Regional
Water
System

Operated by the San Francisco Public Utilities Commission

Water Workshop Number 3
Water Supply Planning Scenarios

March 26, 2021

Hetch Hetchy Regional Water System

Introduction

- Ten water supply planning scenarios were run using our HHLSM system modeling tool and the Regional Water System Supply and Demand Worksheet.
- For each scenario the ultimate result is either a surplus or deficit of supply, and each scenario produces different results, demonstrating the effect of the choices that are made.
- The assumptions and results for each scenario will be displayed in this presentation.
- The presentation concludes with a summary table of the bottom-line results for all the scenarios.

The Ten Scenarios

I. Previous Demand Estimates
II. Current Conditions
III. Tuolumne River Voluntary Agreement
IV. Bay-Delta Plan
V. Bay-Delta Plan with Alternative Water Supply Projects
VI. Bay-Delta Plan with Alternative Water Supply Projects and Modified Rationing Policy
VII. Bay-Delta Plan with Alternative Water Supply Projects, Modified Rationing Policy and Modified Design Drought
VIII. Water Quality Certification (401) with Alternative Water Supply Projects, Modified Rationing Policy and Modified Design Drought
IX. NGO scenario 1: Current system, 198 mgd constant demand, Bay-Delta Plan flows
X. NGO Scenario 2: Current system, 223 mgd constant demand, 7 ½ year design drought, Bay-Delta Plan flows

I. Prior Demand Estimates

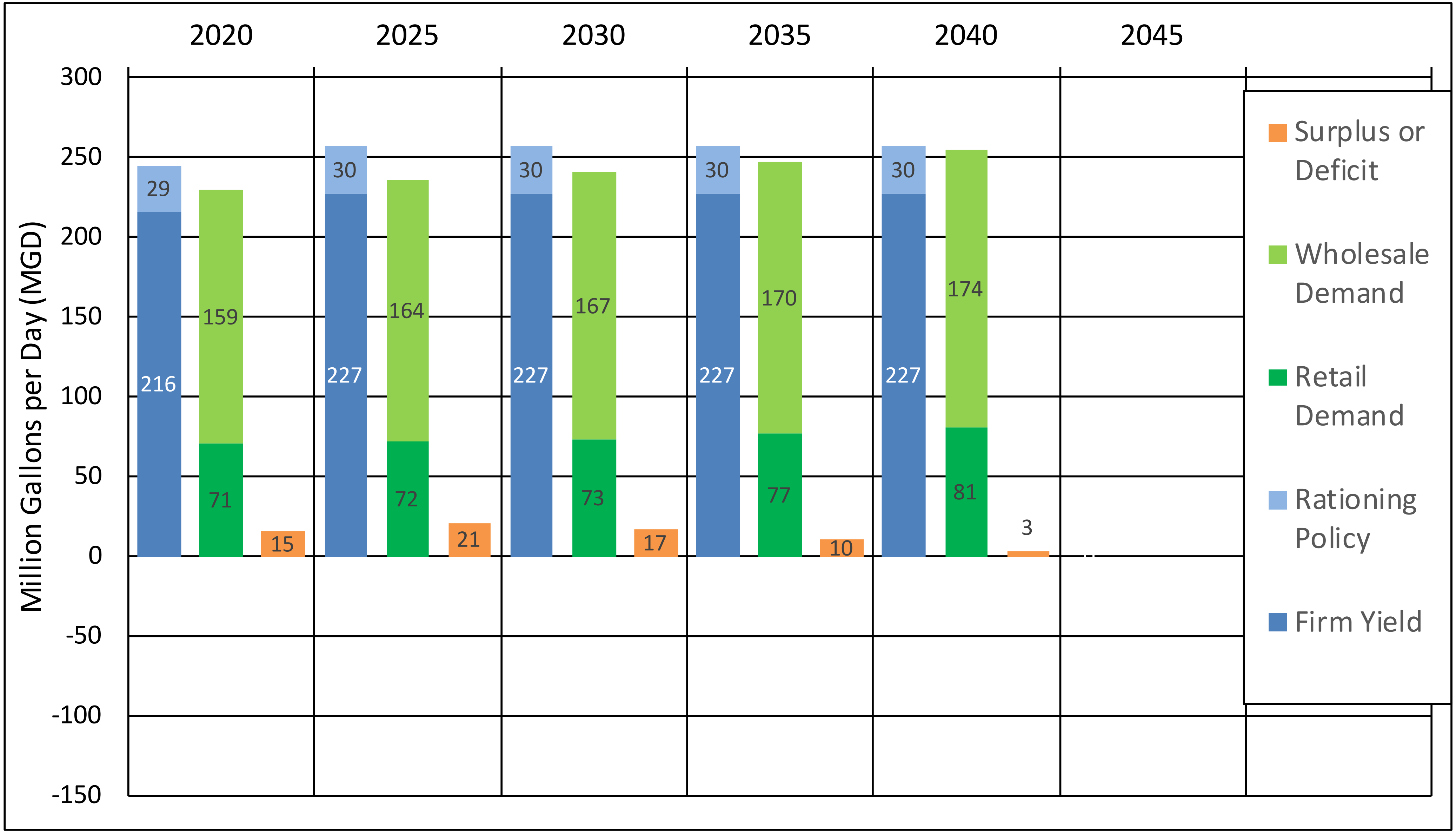
- Includes retail demand projections from the 2015 Urban Water Management Plan
- Includes 2015 purchase projections from wholesale customers
- Includes current side agreement on flows in the lower Tuolumne River
- Yield values are based on the 8.5-year design drought and the adopted WSIP rationing policy

SFPUC Water Supply and Demand Worksheet Results
All values are in million gallons per day (MGD)

	2020	2025	2030	2035	2040	2045
Total Yield:	245	257	257	257	257	NA
RWS Demand:	230	236	241	247	255	NA
Lower Tuolumne Contribution:	NA	NA	NA	NA	NA	NA
Surplus or Deficit:	15	21	17	10	3	NA

Hetch Hetchy Regional Water System

I. Prior Demand Estimates



II. Current Conditions

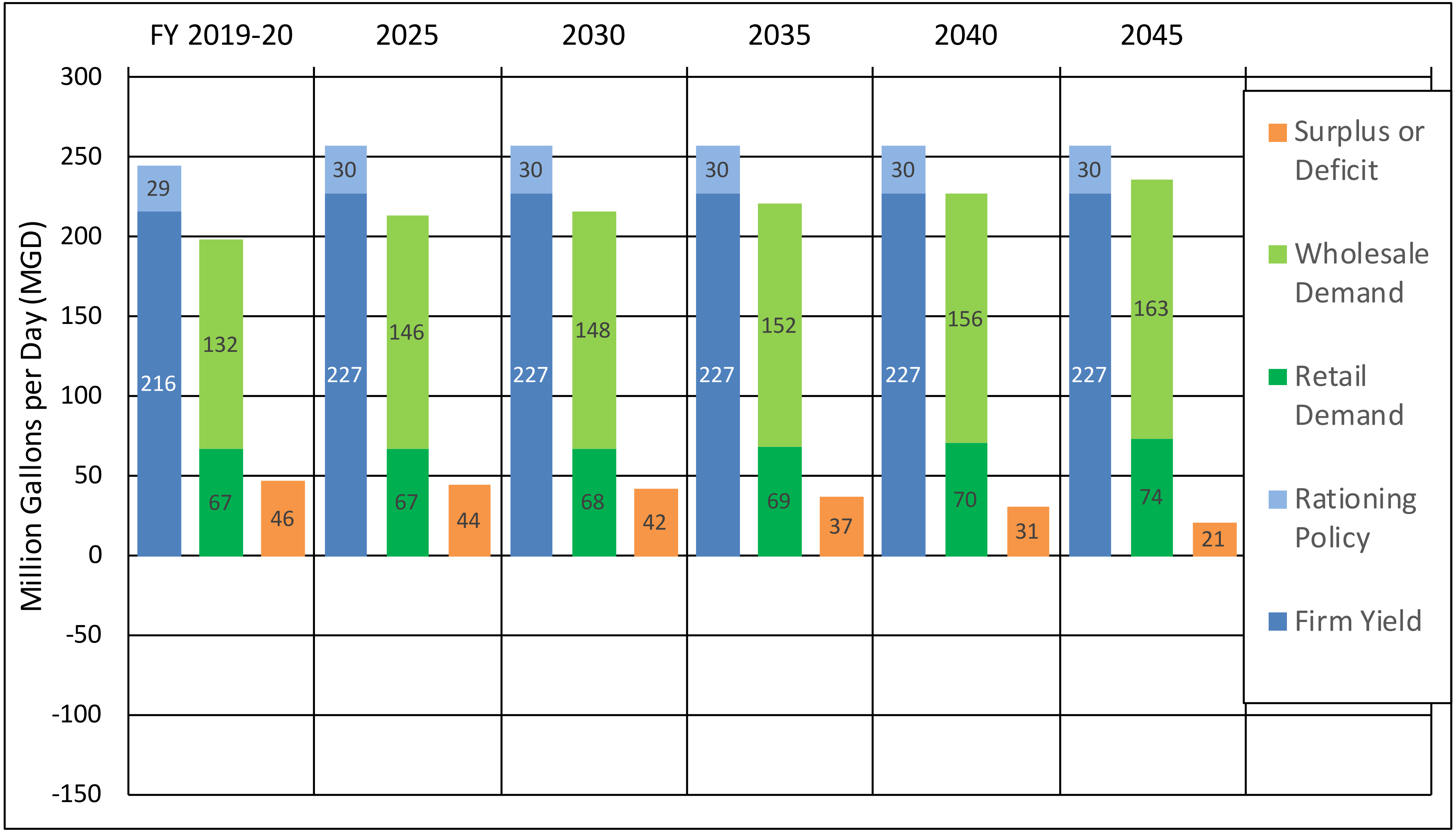
- Includes updated demand projections for anticipated development in retail service area*
- Includes most recent purchase projections from wholesale customers*
- Includes a total of 9 MGD for San Jose and Santa Clara*
- Includes the 1995 side agreement on flows in the lower Tuolumne River
- Yield values are based on the 8.5-year design drought and the adopted WSIP rationing policy

SFPUC Water Supply and Demand Worksheet Results
All values are in million gallons per day (MGD)

	FY 2019-20	2025	2030	2035	2040	2045
Total Yield:	245	257	257	257	257	257
RWS Demand:	198	213	215	220	227	236
Lower Tuolumne Contribution:	NA	NA	NA	NA	NA	NA
Surplus or Deficit:	46	44	42	37	31	21

* Base Conditions in later slides

II. Current Conditions



III. Tuolumne River Voluntary Agreement

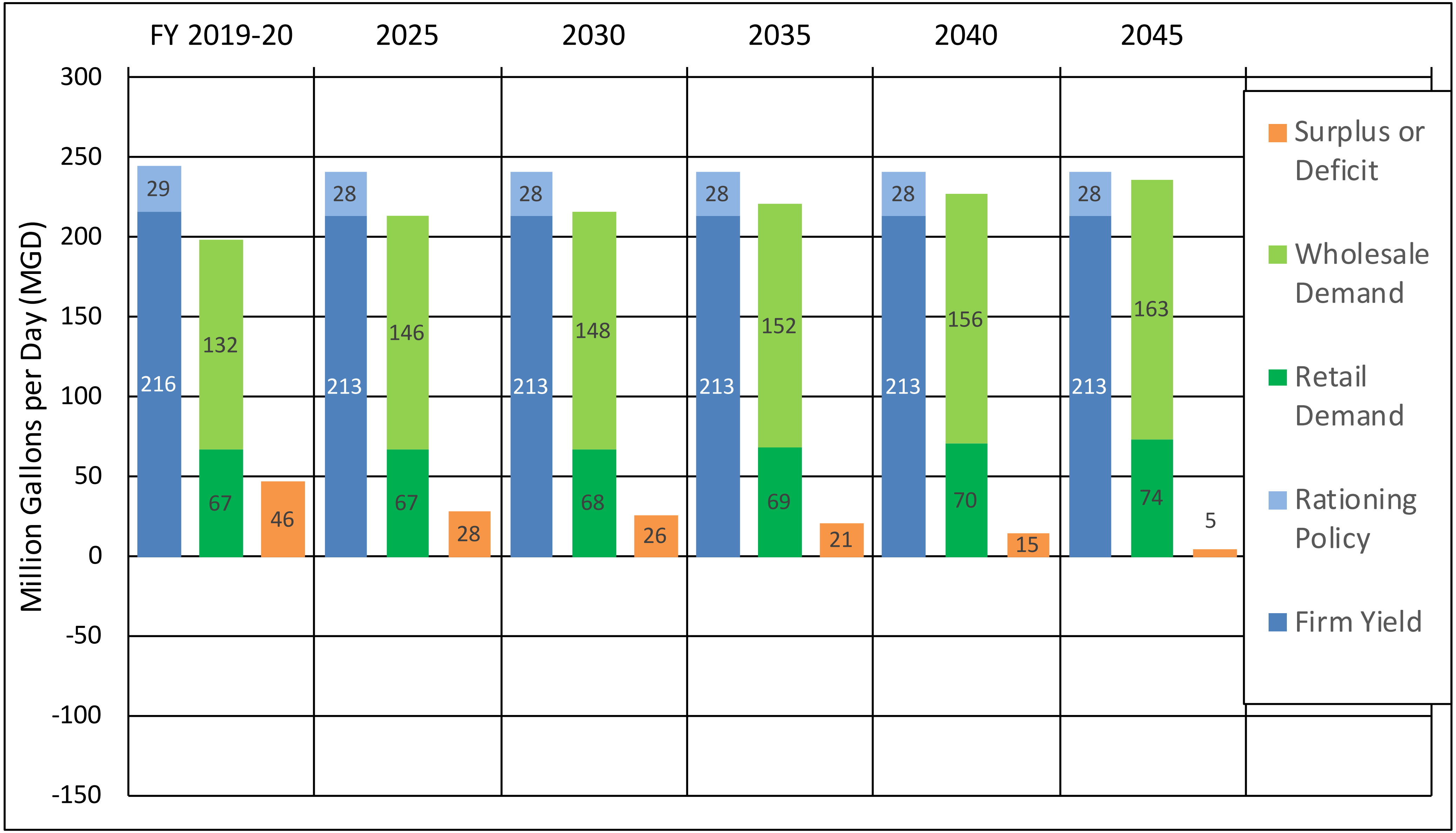
- Base Conditions
- Yield values are based on the 8.5-year design drought and the adopted WSIP rationing policy
- Includes SFPUC contribution to the TRVA, displayed in the graph as a reduction in Firm Yield
- SFPUC contributions are calculated according to the 4th Agreement and assumes continuation of the 1995 side agreement.

SFPUC Water Supply and Demand Worksheet Results
All values are in million gallons per day (MGD)

	FY 2019-20	2025	2030	2035	2040	2045
Total Yield:	245	241	241	241	241	241
RWS Demand:	198	213	215	220	227	236
Lower Tuolumne Contribution:	NA	14	14	14	14	14
Surplus or Deficit:	46	28	26	21	15	5

Hetch Hetchy Regional Water System

III. Tuolumne River Voluntary Agreement



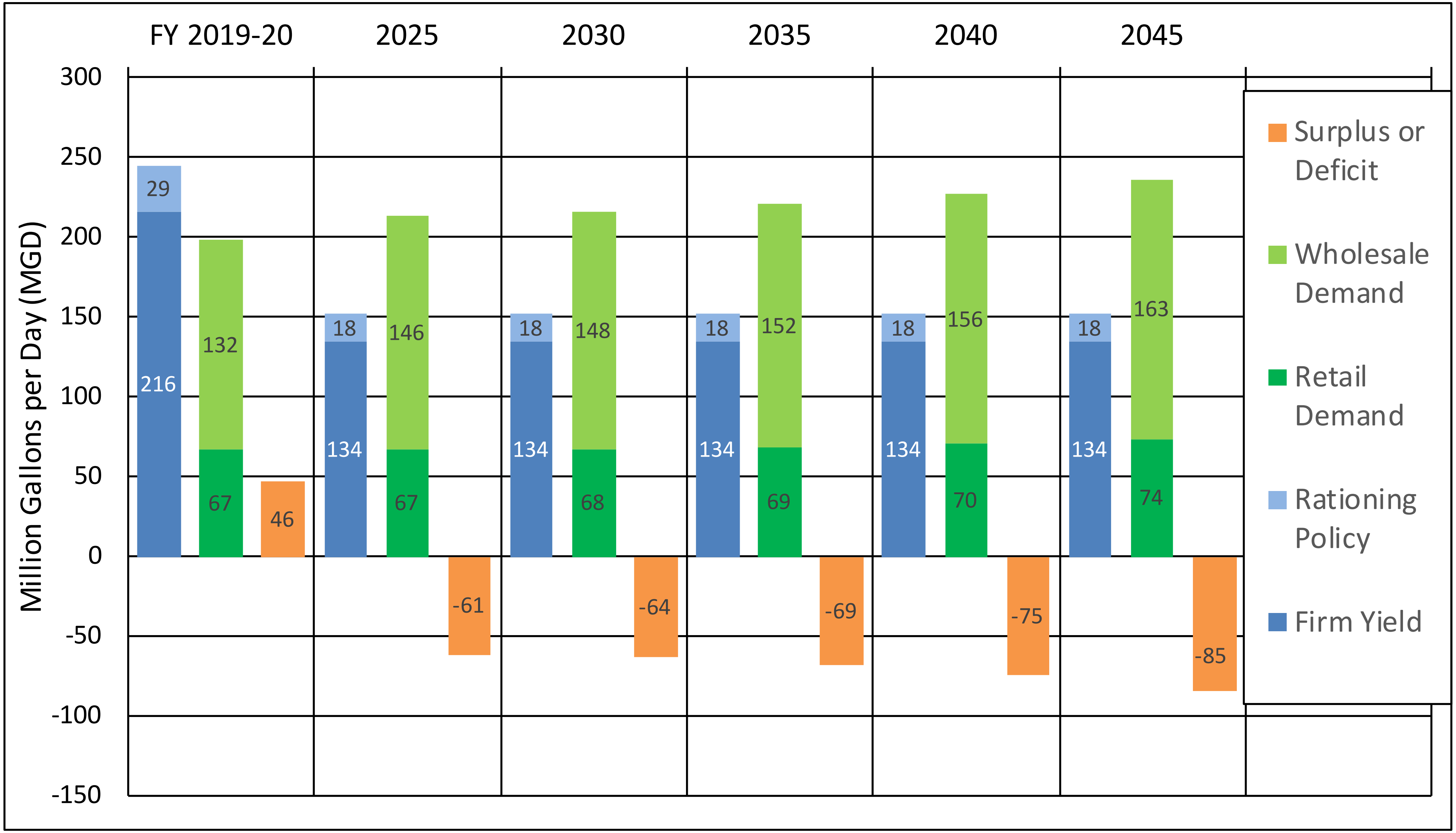
IV. Bay-Delta Plan

- Base Conditions
- Yield values are based on the 8.5-year design drought and the adopted WSIP rationing policy
- Includes SFPUC contribution to the Bay-Delta Plan displayed in the graph as a reduction in Firm Yield, assuming the flow requirement is 40% of unimpaired flow at La Grange from February through June. Current FERC flow requirements are assumed for the rest of the year.
- SFPUC contributions are calculated according to the 4th Agreement and assuming continuation of the 1995 side agreement.

SFPUC Water Supply and Demand Worksheet Results
All values are in million gallons per day (MGD)

	FY 2019-20	2025	2030	2035	2040	2045
Total Yield:	245	152	152	152	152	152
RWS Demand:	198	213	215	220	227	236
Lower Tuolumne Contribution:	NA	93	93	93	93	93
Surplus or Deficit:	46	-61	-64	-69	-75	-85

IV. Bay-Delta Plan



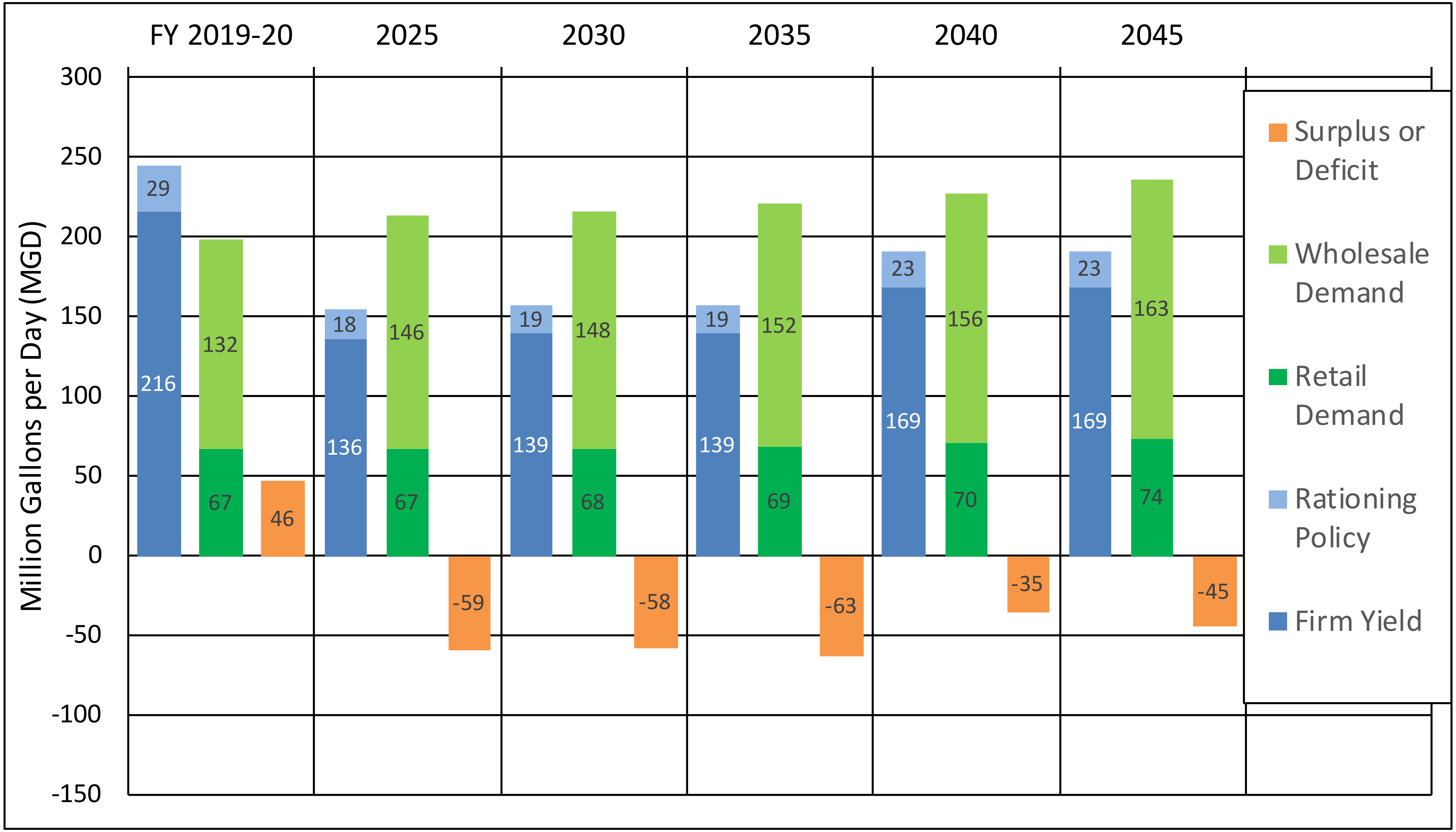
V. Bay-Delta Plan with Alternative Water Supply Projects

- Base Conditions
- Yield values are based on the 8.5-year design drought and the adopted WSIP rationing policy
- Includes SFPUC contribution to the Bay-Delta Plan displayed in the graph as a reduction in Firm Yield, assuming the flow requirement is 40% of unimpaired flow at La Grange from February through June. Current FERC flow requirements are assumed for the rest of the year.
- SFPUC contributions are calculated according to the 4th Agreement and continuation of the 1995 side agreement.
- Includes a total of 35 MGD of new water supply projects, which are assumed to be added between 2025 and 2040. The firm yield from the new projects is shown separately in the table to demonstrate the estimated development of the projects over time. The new project yield is also included in the Total Yield shown in the table.

SFPUC Water Supply and Demand Worksheet Results
All values are in million gallons per day (MGD)

	FY 2019-20	2025	2030	2035	2040	2045
Total Yield:	245	154	158	158	192	192
RWS Demand:	198	213	215	220	227	236
Lower Tuolumne Contribution:	NA	93	93	93	93	93
Alternative Water Supply Projects:	NA	2	5	5	35	35
Surplus or Deficit:	46	-59	-58	-63	-35	-45

V. Bay-Delta Plan with Alternative Water Supply Projects



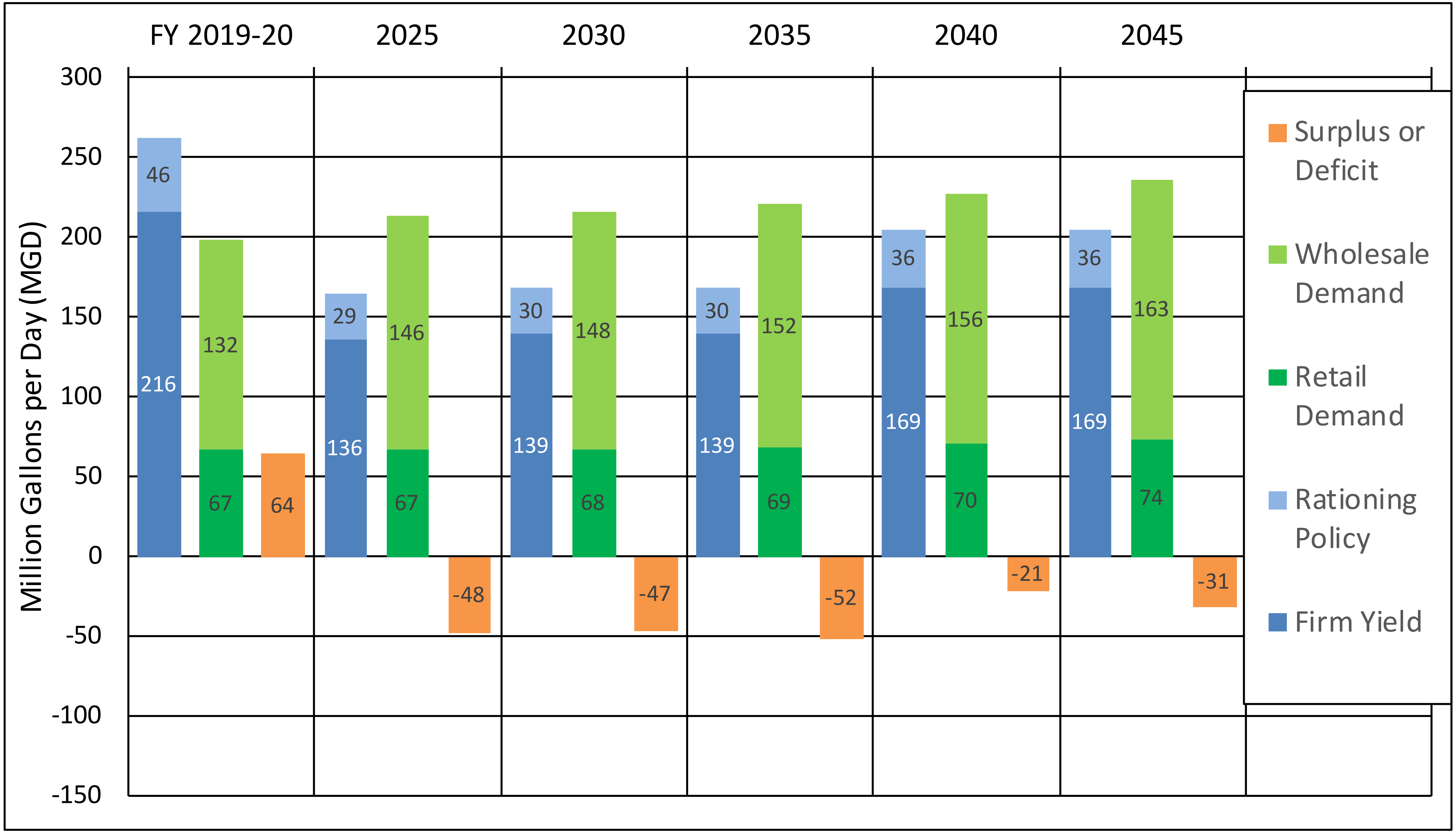
VI. Bay-Delta Plan with Alternative Water Supply Projects and Modified Rationing Policy

- Base Conditions
- Yield values are based on the 8.5-year design drought
- Includes SFPUC contribution to the Bay-Delta Plan displayed in the graph as a reduction in Firm Yield, assuming the flow requirement is 40% of unimpaired flow at La Grange from February through June. Current FERC flow requirements are assumed for the rest of the year.
- SFPUC contributions are calculated according to the 4th Agreement and assuming continuation of the 1995 side agreement.
- Includes a total of 35 MGD of new water supply projects, as described on slide 12 for scenario V
- Includes 7.5 years of rationing at 20% in the 8.5-year design drought sequence

SFPUC Water Supply and Demand Worksheet Results
All values are in million gallons per day (MGD)

	FY 2019-20	2025	2030	2035	2040	2045
Total Yield:	262	165	169	169	205	205
RWS Demand:	198	213	215	220	227	236
Lower Tuolumne Contribution:	NA	93	93	93	93	93
Surplus or Deficit:	64	-48	-47	-52	-21	-31

VI. Bay-Delta Plan with Alternative Water Supply Projects and Modified Rationing Policy



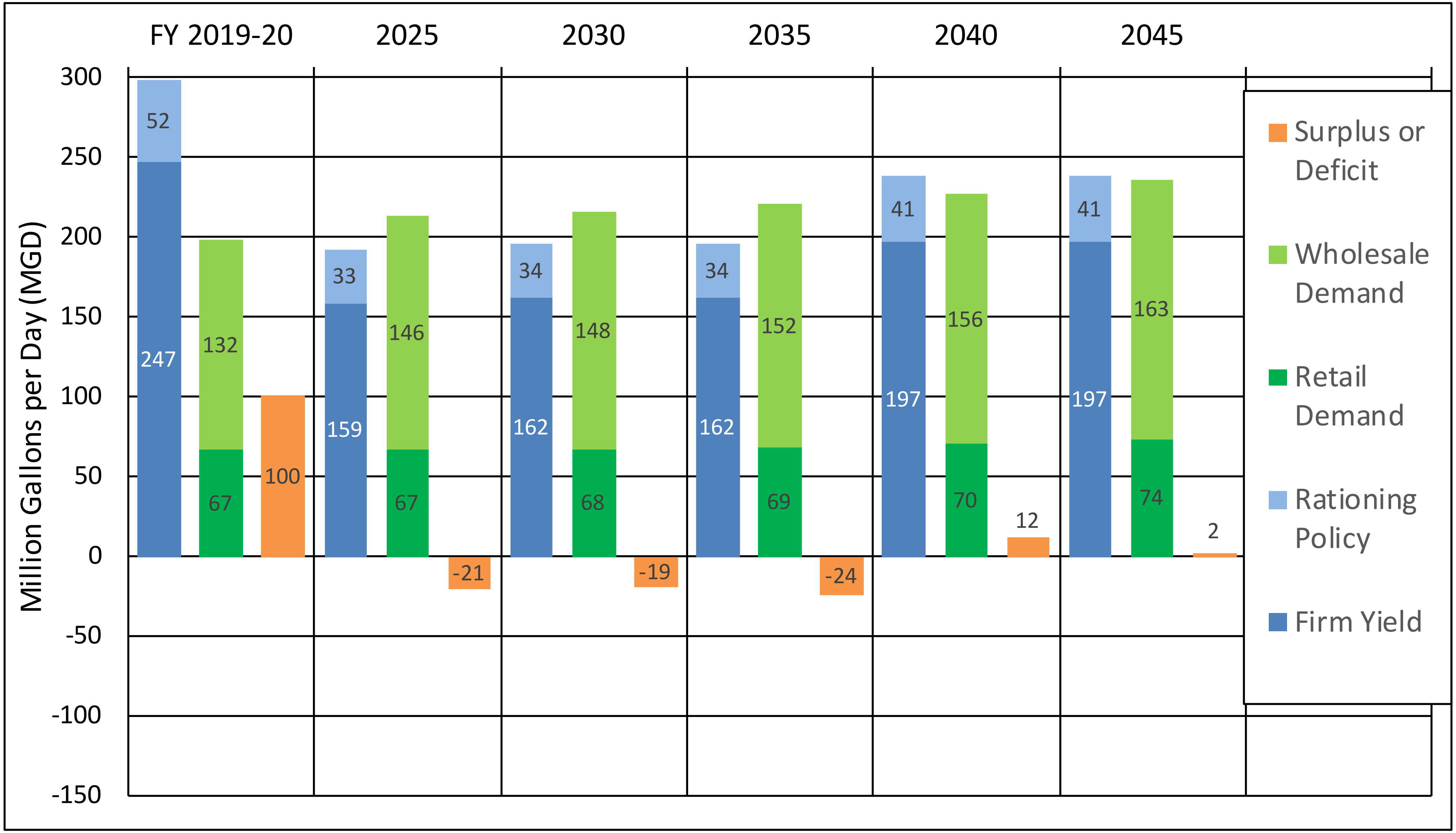
VII. Bay-Delta Plan with Alternative Water Supply Projects, Modified Rationing Policy and Modified Design Drought

- Base Conditions
- Includes SFPUC contribution to the Bay-Delta Plan displayed in the graph as a reduction in Firm Yield, assuming the flow requirement is 40% of unimpaired flow at La Grange from February through June. Current FERC flow requirements are assumed for the rest of the year.
- SFPUC contributions are calculated according to the 4th Agreement and assuming continuation of the 1995 side agreement.
- Includes a total of 35 MGD of new water supply projects, as described on slide 12 for scenario V
- Yield values are estimated using a 7.5-year design drought
- Includes 6.5 years of rationing at 20% in the 7.5-year design drought sequence.

SFPUC Water Supply and Demand Worksheet Results
All values are in million gallons per day (MGD)

	FY 2019-20	2025	2030	2035	2040	2045
Total Yield:	299	192	196	196	238	238
RWS Demand:	198	213	215	220	227	236
Lower Tuolumne Contribution:	NA	101	101	101	101	101
Surplus or Deficit:	100	-21	-19	-24	12	2

VII. Bay-Delta Plan with Alternative Water Supply Projects, Modified Rationing Policy and Modified Design Drought



VIII. Water Quality Certification (401) with Alternative Water Supply Projects, Modified Rationing Policy and Modified Design Drought

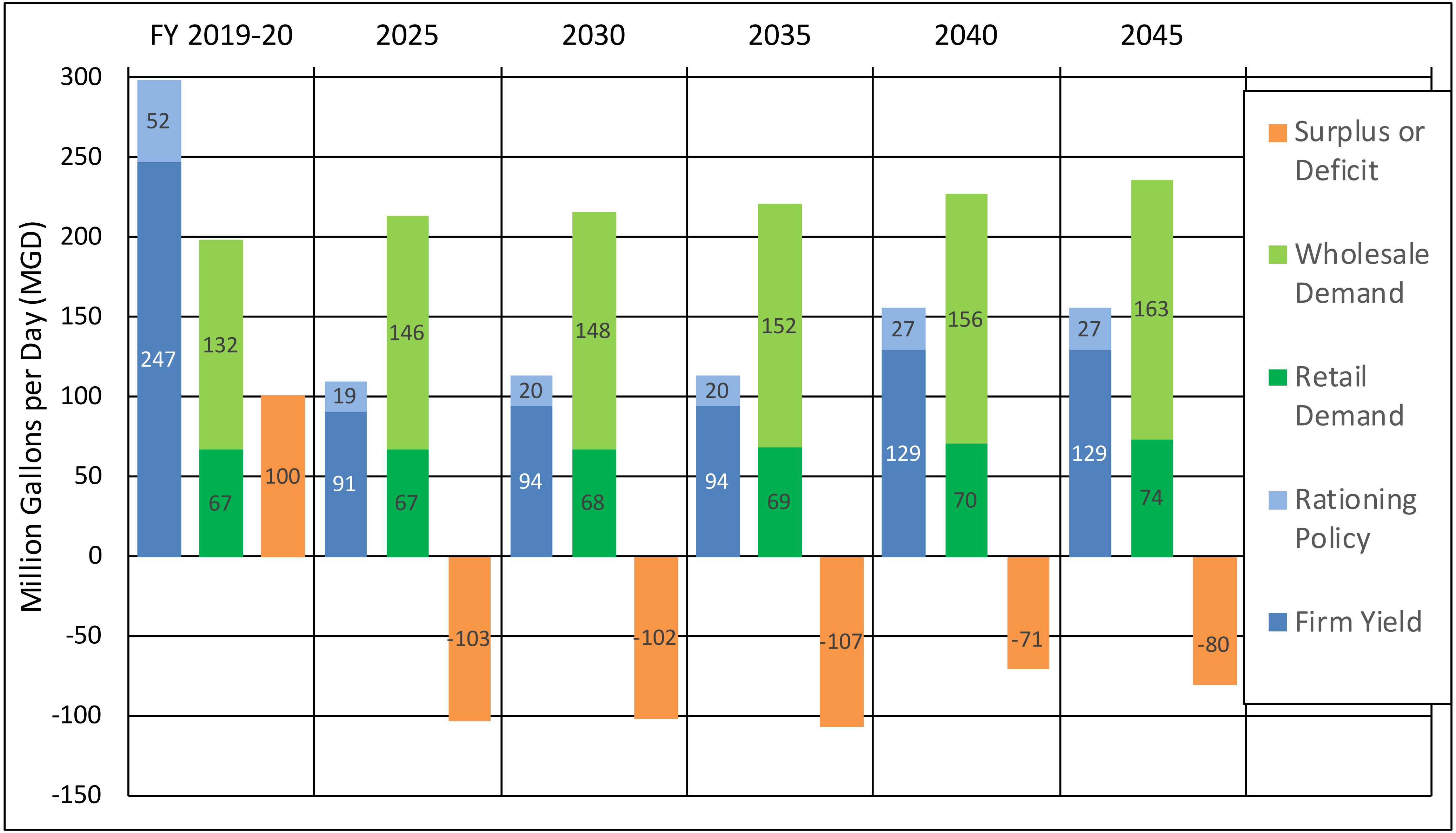
- Base Conditions
- Includes SFPUC contribution to the Section 401 water quality certification on the FERC license displayed in the graph as a reduction in Firm Yield.
- SFPUC contributions are calculated according to the 4th Agreement and assuming continuation of the 1995 side agreement.
- Includes a total of 35 MGD of new water supply projects, as described on slide 12 for scenario V
- Yield values are estimated using a 7.5-year design drought
- Includes 6.5 years of rationing at 20% in the 7.5-year design drought sequence.

SFPUC Water Supply and Demand Worksheet Results
All values are in million gallons per day (MGD)

	FY 2019-20	2025	2030	2035	2040	2045
Total Yield:	299	110	114	114	156	156
RWS Demand:	198	213	215	220	227	236
Lower Tuolumne Contribution:	NA	169	169	169	169	169
Surplus or Deficit:	100	-103	-102	-107	-71	-80

VIII. Water Quality Certification (401) with Alternative Water Supply Projects, Modified Rationing Policy and Modified Design Drought

Hetch Hetchy Regional Water System



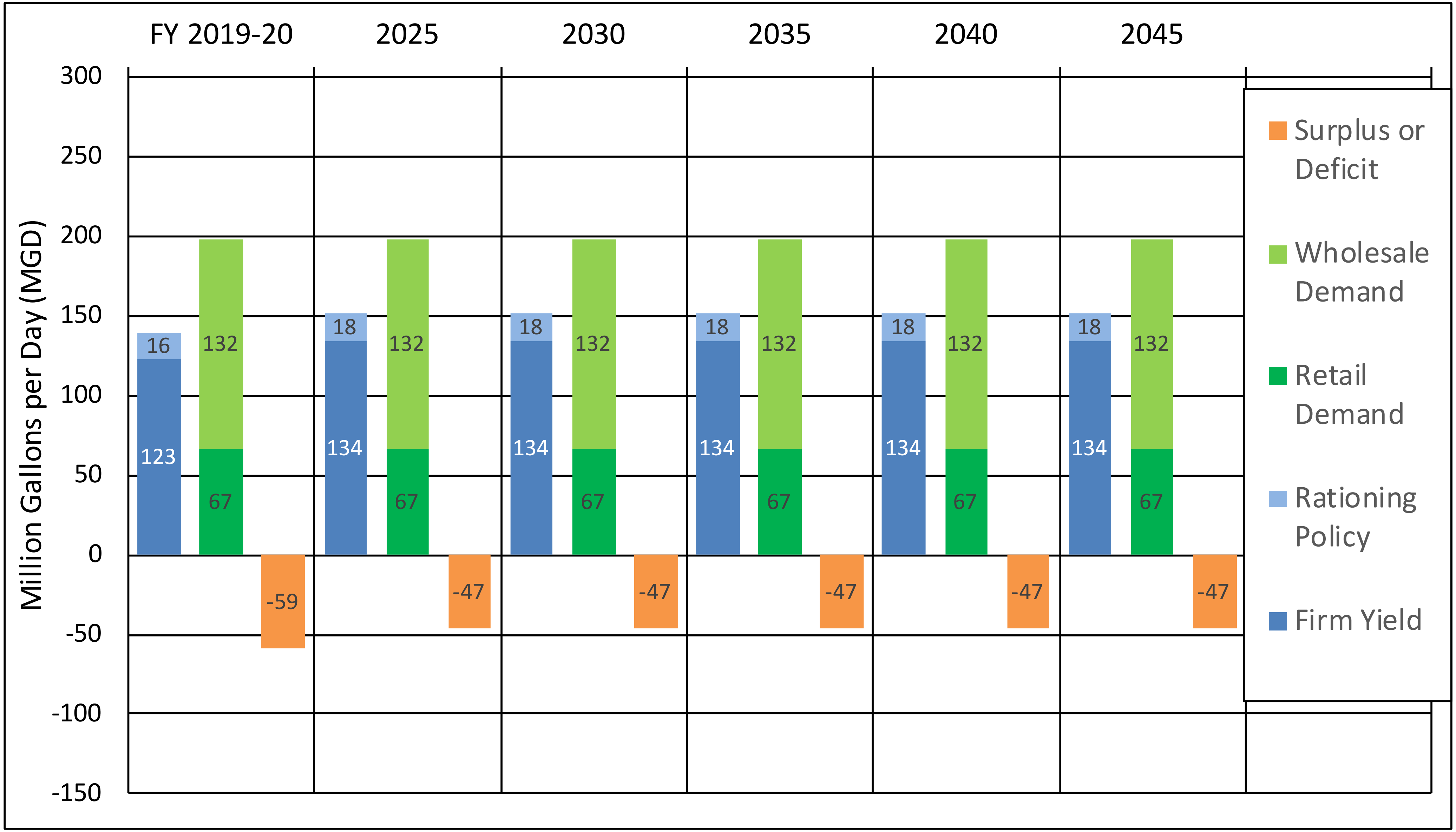
IX. NGO scenario 1: Current system, 198 mgd constant demand, Bay-Delta Plan flows

- Assumes that retail and wholesale demand on the RWS remain at the current level of approximately 198 MGD, and that SFPUC contributions to the Bay-Delta Plan are being made now
- Yield values are based on the 8.5-year design drought and the adopted WSIP rationing policy
- Includes SFPUC contribution to the Bay-Delta Plan, assuming the flow requirement is 40% of unimpaired flow at La Grange from February through June. Current FERC flow requirements are assumed for the rest of the year.
- SFPUC contributions are calculated according to the 4th Agreement and assuming continuation of the 1995 side agreement.

SFPUC Water Supply and Demand Worksheet Results
All values are in million gallons per day (MGD)

	FY 2019-20	2025	2030	2035	2040	2045
Total Yield:	139	152	152	152	152	152
RWS Demand:	198	198	198	198	198	198
Lower Tuolumne Contribution:	93	93	93	93	93	93
Surplus or Deficit:	-59	-47	-47	-47	-47	-47

IX. NGO scenario 1: Current system, 198 mgd constant demand, Bay-Delta Plan flows



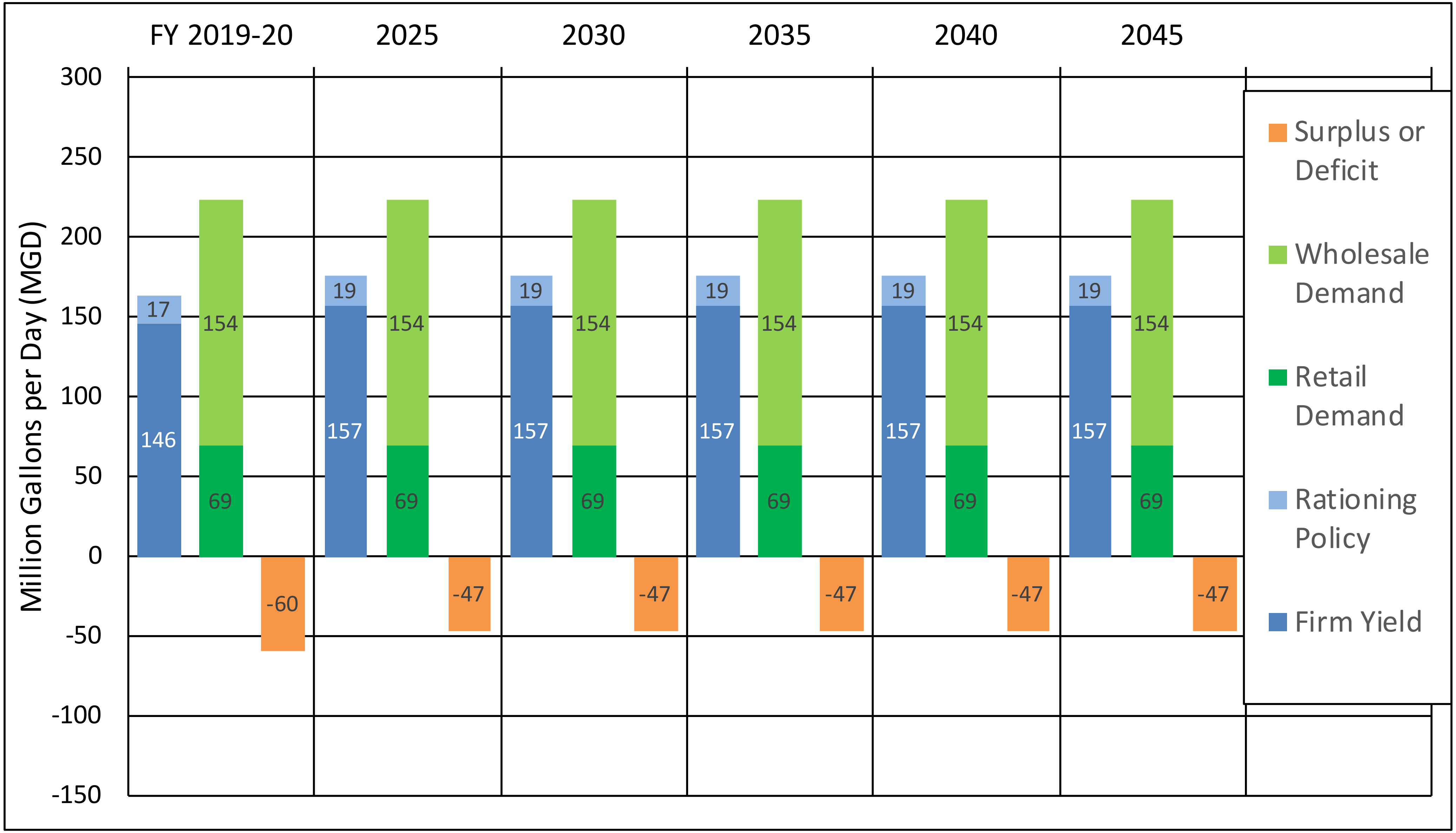
X. NGO scenario 2: Current system, 223 mgd constant demand, 7½ year design drought, Bay-Delta Plan flows

- Includes an assumed demand of 223 MGD for the SFPUC service area in all years
- Includes a total of 9 MGD for San Jose and Santa Clara
- Includes SFPUC contribution to the Bay-Delta Plan, assuming the flow requirement is 40% of unimpaired flow at La Grange from February through June. Current FERC flow requirements are assumed for the rest of the year. Assumes this contribution begins now.
- SFPUC contributions are calculated according to the 4th Agreement and assuming continuation of the 1995 side agreement.
- Yield values are estimated using a 7.5-year design drought and a truncated version of the adopted WSIP rationing policy

SFPUC Water Supply and Demand Worksheet Results
All values are in million gallons per day (MGD)

	FY 2019-20	2025	2030	2035	2040	2045
Total Yield:	163	176	176	176	176	176
RWS Demand:	223	223	223	223	223	223
Lower Tuolumne Contribution:	101	101	101	101	101	101
Surplus or Deficit:	-59	-47	-47	-47	-47	-47

X. NGO scenario 2: Current system, 223 mgd constant demand, 7½ year design drought, Bay-Delta Plan flows



SCENARIO SURPLUSES OR DEFICITS						
SCENARIOS	**FY19-20**	**2025**	**2030**	**2035**	**2040**	**2045**
I. Previous Demand Estimates	15	21	17	10	3	NA
II. Current Conditions	46	44	42	37	31	21
III. Tuolumne River Voluntary Agreement	46	28	26	21	15	5
IV. Bay-Delta Plan	46	-61	-64	-69	-75	-85
V. Bay-Delta Plan with Alternative Water Supply Projects	46	-59	-58	-63	-35	-45
VI. Bay-Delta Plan with Alternative Water Supply Projects and Modified Rationing Policy	64	-48	-47	-52	-21	-31
VII. Bay-Delta Plan with Alternative Water Supply Projects, Modified Rationing Policy and Modified Design	100	-21	-19	-24	12	2
VIII. Water Quality Certification (401) with Alternative Water Supply Projects, Modified Rationing Policy and Modified Design Drought	100	-103	-102	-107	-71	-80
IX. NGO scenario 1: Current system and 198 mgd constant demand and Bay-Delta Plan flows	-59	-47	-47	-47	-47	-47
X. NGO Scenario 2: Current system, 223 mgd constant demand, 7 ½ year design drought and Bay-Delta Plan	-60	-47	-47	-47	-47	-47

APPENDIX I
WATER SHORTAGE CONTINGENCY PLAN

CITY OF BURLINGAME

Water Shortage Contingency Plan

SEPTEMBER 2021

TABLE OF CONTENTS

TABLES

ATTACHMENTS

1. INTRODUCTION

☑ ***CWC § 10640***

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

(b) Every urban water supplier required to prepare a water shortage contingency plan shall prepare a water shortage contingency plan pursuant to Section 10632. The supplier shall likewise periodically review the water shortage contingency plan as required by paragraph (10) of subdivision (a) of Section 10632 and any amendments or changes required as a result of that review shall be adopted pursuant to this article.

The City of Burlingame (City or Burlingame)'s Water Shortage Contingency Plan (WSCP) serves as a flexible framework of planned response measures to mitigate future water supply shortages. This WSCP builds upon and supersedes the WSCP that was presented in the 2015 Urban Water Management Plan (UWMP).

The WSCP includes the stages of response to a water shortage caused by drought or by supply interruptions caused by infrastructure failure, regulatory mandate, or catastrophic human-caused or natural events. The primary objective of the WSCP is to ensure that Burlingame has in place the necessary resources and management responses needed to protect health and human safety, minimize economic disruption, and preserve environmental and community assets during water supply shortages and interruptions. The WSCP also includes procedures to conduct an annual assessment of water supply and demand in order to determine whether water shortage conditions are likely to exist in the forthcoming year, and to proactively begin the process of implementing WSCP stages of action, as appropriate.

This WSCP has been prepared in accordance with California Water Code (CWC) § 10640 and CWC § 10632 of the UWMP Act. Text from the UWMP Act have been included in grey text boxes with italicized font at beginning of relevant sections of this WSCP. The information presented in the respective WSCP sections and the associated text and tables are collectively intended to fulfill the requirements of that sub-section of the UWMP Act.

The City has authority within Chapter 15.06 - Water Shortage Emergencies of the City of Burlingame Municipal Code to require water rationing and conservation and to enforce penalties. Burlingame Municipal Code Chapter 15.06 is included as Attachment 1 of this WSCP.

Burlingame developed this WSCP based on the following guiding principle:

> *This WSCP concentrates on the reduction of non-essential water uses such as landscape irrigation and other discretionary outdoor water use and gives the highest priority to preserving water uses that are essential to the health, safety, welfare, and economic vitality of Burlingame's customers.*

Practically, this principle guides Burlingame to ask for a shared contribution from all of its customers towards meeting water reduction goals during periods of water shortage. It further directs Burlingame to focus its water conservation efforts on reducing discretionary water uses such as outdoor irrigation, while attempting to minimize economic and other impacts to its residential and commercial customers.

2. WATER SUPPLY RELIABILITY ANALYSIS

☑ ***CWC § 10632 (a) (1)*** *The analysis of water supply reliability conducted pursuant to Section 10635.*

This section provides a summary of Burlingame's water supply reliability analysis in Chapter 7 of the City's 2020 UWMP, recognizing that the WSCP is intended to be a standalone document that can be adopted and amended independently.

Burlingame relies on the San Francisco Public Utilities Commission Regional Water System (SFPUC RWS) for all of its potable water supply. In accordance with the SFPUC's perpetual obligation to Burlingame's Supply Assurance, Burlingame has an Individual Supply Guarantee (ISG) of 5.23 million gallons per day (MGD), or 1,909 million gallons (MG) per year.

Burlingame's water supply relies largely on the reliability of the SFPUC RWS. The SFPUC has committed to meeting the retail and wholesale customers' average annual water demand during non–drought years and meeting dry-year delivery needs while limiting rationing to a maximum 20% system-wide reduction in water service during extended droughts. However, several potential constraints have been identified on the future supply availability of the SFPUC RWS. One of the key factors is the adoption of the 2018 Bay-Delta Plan Amendment. If the Bay-Delta Plan Amendment is implemented, the SFPUC is anticipated to have sufficient supplies to meet the projected water demands in normal years but would experience significant supply shortages in single and multiple dry years.

Based on the current allocation methodology[1] and SFPUC dry year cutbacks, Burlingame is anticipated to experience up to 617 MG (37%) supply shortfall in single dry years by 2040 and up to 867 MG (52%) supply shortfall in the second through fifth year multiple dry years by 2040 compared to projected demands.

However, numerous uncertainties remain regarding the implementation of the Bay-Delta Plan Amendment and the allocation of the available supply among the wholesale customers. The resultant actual supply reliability and the frequency of supply shortfalls for Burlingame cannot be known currently. Burlingame has placed high priority on working with SFPUC and the Bay Area Water Supply and Conservation Agency (BAWSCA) to better refine the estimates of RWS supply reliability and may revise its UWMP accordingly. The SFPUC and BAWSCA have also been taking various actions to improve the reliability of the RWS supply, including implementing a number of dry year water supply projects, exploring alternative water supplies, and implementing Long-Term Reliable Water Supply Strategy recommendations.

As part of the supply reliability analysis, Burlingame has conducted a Drought Risk Assessment (DRA), which evaluates the effects of an assumed five-year drought commencing the year after the assessment is completed (i.e., from 2021 through 2025) on available water supply sources. Burlingame's supply is

[1] The SFPUC and the wholesale customers have negotiated and adopted a plan to allocate the RWS supply during system-wide shortages of 20% or less. To address the instances where the supply shortfalls are projected to be greater than 20%, BAWSCA has developed a revised methodology to allocate the RWS supply. This allocation method is intended to serve as the preliminary basis for the 2020 UWMP supply reliability analysis and does not in any way imply an agreement by BAWSCA member agencies as to the exact allocation methodology. Details for the SFPUC RWS supply reliability are provided by the SFPUC and BAWSCA and are documented in Sections 7.1 and Appendix F of the 2020 UWMP.

expected to be sufficient to meet demands in the first two years of the assumed drought (i.e., 2021 and 2022). However, based on the current allocation methodology, expected implementation of the Bay-Delta Plan in 2023, and SFPUC dry year cutbacks, Burlingame is expected to experience 47% reduction in subsequent years of the assumed drought from 2023 through 2025. The shortfall is estimated to be 587 MG.

Burlingame has developed this WSCP to address water shortage conditions resulting from any cause (e.g., droughts, impacted distribution system infrastructure, regulatory-imposed shortage restrictions, etc.). The WSCP identifies a variety of actions that Burlingame will implement to reduce demands and ensure supply reliability at various levels of water shortage.

3. PRIOR DROUGHT ACTIONS

The City of Burlingame has historically developed different strategies for reducing water demand during water shortages such as the severe droughts that occurred in California between 1976 and 1977 and again between 1987 and 1992. In response to these droughts, the Burlingame City Council (City Council) adopted the Water Rationing Ordinance (No. 1101) in 1977 which established Chapter 15.06 Water Shortage Emergencies in the Burlingame Municipal Code. Since then, the City Council has adopted Water Rationing Plan Resolution 49-92 (WRPR) in 1992 and amended Municipal Code Chapter 15.06 in 1988 and again in 2015. During the 1976-1977, 1987-1992, and 2012-2016 droughts, Burlingame adopted specific rules that required water-saving actions and prohibited water-wasting activities. In 1992, these rules were accompanied by specific water use allocations for each customer. The water use allocation system employed in 1992 was based on a per capita water use for single family residential customers and a percentage reduction for multifamily and non-residential customers. These ordinances and resolutions are discussed further below.

3.1 1976 - 1977 Drought

The State of California experienced extremely dry years between 1976 and 1977 when runoff in the Sacramento and San Joaquin Valleys averaged 37% and 26% of normal, respectively. To help mitigate the effects of the drought, the City Council enacted Ordinance 1011 in April 1977 to achieve a 28% reduction in water use citywide. Ordinance 1011 focused on adopting specific rules to require water-saving practices and prohibit water-wasting activities. Ordinance 1011 was enforced by the City until 1978 when increased precipitation ended to the drought.

3.2 1987-1992 Drought

Almost a decade after the 1976-1977 drought, the City was faced again with extreme dry conditions. The 1987-1992 drought was notable for the six-year duration of significantly below-average runoff flows and the statewide nature of the drought impacts (runoff in the Sacramento and San Joaquin Valleys averaged 56% and 47% of normal, respectively). Statewide reservoir storage was approximately 40% of average by the third year of the drought and did not return to average conditions until 1994.

The 1987-1992 drought required that the City reduce water demands by 34% at the peak of the drought in 1991 (from 5.0 MGD to 3.3 MGD). To achieve this water demand reduction, WRPR 49-92 mandated the implementation of conservation measures and prohibited the use of potable water for certain activities, similar to those adopted by Ordinance 1011. In addition to these conservation measures however, WRPR 49-92 also assigned a water use allocation for each customer based on a per capita water use for single family residential customers and a percentage reduction for multifamily and non-residential customers.

Each single family dwelling was allocated 100 gallons per day (GPD) for the first inhabitant, 70 GPD each for the second, third, or fourth inhabitants, and 50 GPD for each additional inhabitant. Service connections with landscaping received allocations based on the landscape area, including 50 GPD for lots under 10,000 square feet, 150 GPD for lots exceeding 10,000 square feet but less than ¾ acre, and between 150 to 300 GPD for lots larger than ¾ acre. For all other accounts (e.g., multifamily residential, commercial, industrial, institutional, and irrigation), the percent reductions required varied seasonally and by customer category. Irrigation accounts were required to cut back 50% during both the summer and winter months. Institutional accounts were cutback 25% during all seasons. Commercial, industrial and hotel accounts without food services were required to reduce water usage by 25% during the summer and by 15% in winter months, while food-related commercial accounts were cutback 20% in the summer and 10% in the winter. Multifamily residential customers were required to reduce water use by 15% during the summer and 7% during winter months.

3.3 2012-2016 Drought

On April 1, 2015, Governor Brown issued the fourth in a series of executive orders regarding actions necessary to address California's severe drought conditions. Executive Order B-29-15 directed the State Water Resources Control Board (SWRCB) to impose the first ever mandatory restrictions on urban water suppliers to achieve a statewide 25% reduction in potable urban water usage through February 2016. The executive order also required commercial, industrial, and institutional (CII) users to implement water efficiency measures, prohibited irrigation with potable water of ornamental turf in public street medians, and prohibited irrigation with potable water outside newly constructed homes and buildings that is not delivered by drip or microspray systems, along with numerous other directives.

On May 5, 2015, the SWRCB adopted Resolution 2015-0032 that mandated minimum actions by water suppliers and their customers to conserve water supplies into 2016 and assigned a mandatory water conservation savings goal to each water supplier based on their residential gallons per capita per day (R-GPCD). This was the first time in state history that the Governor directed the SWRCB to implement mandatory water reductions in cities across California to reduce water usage by 25%.

The mandatory conservation standards included in CWC Section 865(c) range from 8% for suppliers with an R-GPCD below 65 R-GPCD, up to 36% for suppliers with an R-GPCD of greater than 215 GPCD. As with previous the emergency drought regulations adopted by the SWRCB in 2014, the new water conservation regulation was primarily intended to reduce outdoor urban water use. Based on their R-GPCD, Burlingame was required to reduce water use by 16% relative to its 2013 water use. During the June 2015 through December 2015 compliance period, Burlingame well surpassed its water use reduction target, with a cumulative savings of 30.8% relative to its 2013 use. On May 18, 2015, the City Council adopted a resolution to comply with the State regulations to reduce water use by declaring that a water shortage condition exists per Chapter 15.06 of the Municipal Code, implementing Stage 3 of the City's Water Shortage Contingency Plan, and adopting water use restrictions consistent with State regulations, the Municipal Code, and the City's Water Shortage Contingency Plan. Some of the rules required by Municipal Code Chapter 15.06 Water Shortage Emergencies include:

- Repairing broken or defective plumbing, sprinklers, watering, or irrigation equipment immediately;
- Reducing irrigation of lawns, gardens, playfields, parks, median strips, golf courses, cemeteries, and landscaping of any type;
- Eliminating use of water that results in flooding or runoff in gutters, driveways, or streets;
- Eliminating the use of hoses to wash vehicles or building surfaces or parts;
- Requiring restaurants to serve water to customers only upon request;
- Eliminating use of water in decorative exterior fountains and requiring interior fountains to recirculate water;
- Eliminating use of hoses for cleaning sidewalks, driveways, patios, parking lots, or other hard-surfaced areas;

- Eliminating draining and filling of any new or existing swimming pools with city-supplied water;
- Allowing service connections for new construction incorporating water-saving devices as long as conditions of this chapter are met, provided no residential landscaping shall be installed during the water shortage;
- Prohibiting construction water for consolidation of backfill and other nondomestic uses if other methods of water sources can be used; and
- Eliminating new residential irrigation services and expansion of existing irrigation facilities.

On April 7, 2017, Governor Brown signed Executive Order B-40-17 which lifted the drought emergency for several counties, including San Mateo County.

4. ANNUAL WATER SUPPLY AND DEMAND ASSESSMENT PROCEDURES

☑ ***CWC § 10632 (a) (2)***

The procedures used in conducting an annual water supply and demand assessment that include, at a minimum, both of the following:

(A) The written decision-making process that an urban water supplier will use each year to determine its water supply reliability.

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

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

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

(iii) Existing infrastructure capabilities and plausible constraints.

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

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

☑ ***CWC § 10632.1***

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

☑ ***CWC § 10632.2***

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

Beginning by July 1, 2022, Burlingame will conduct an Annual Water Supply and Demand Assessment (Annual Assessment) to identify whether there is likely to be a water shortage condition in the following year. Because Burlingame's sole source of potable water supply is from the SFPUC RWS, the evaluation of City water supplies for a particular year will be based on information provided by the SFPUC or BAWSCA. Burlingame will conduct the Annual Assessment as part of a coordinated effort led by BAWSCA. The procedure used by BAWSCA in conducting an Annual Assessment is outlined in Attachment 2 of this WSCP.

5. WATER SHORTAGE LEVELS

☑ ***CWC § 10632 (a) (3)***

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

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

Consistent with the requirements of CWC § 10632(a)(3), this WSCP is based on the six water shortage levels (previously referred to as stages) shown in Table 5-1. These shortage levels are intended to address shortage caused by any condition, including the catastrophic interruption of water supplies. Table 5-1 summarizes how the City has adapted its 2015 WSCP stages to meet the 2020 WSCP mandated shortage levels.

Table 5-1. Comparison Between 2015 WSCP Shortage Stages and the 2020 WSCP Shortage Levels

2015 WSCP Stage	Percent Supply Reduction
1	N/A
2	Up to 5% Reduction
3	Up to 15% Reduction
4	Up to 30% Reduction
5	Up to 50% Reduction

2020 WSCP Level	Shortage Level
1	≤10%
2	10-20%
3	20-30%
4	30-40%
5	40-50%
6	>50%

Table 5-2 describes the customer's water use restrictions and the City's consumption reduction methods (i.e., the actions to be taken by Burlingame staff) associated with each shortage level.

Table 5-2. Water Shortage Contingency Plan Levels (DWR Table 8-1)

Shortage Level	Percent Shortage Range	Shortage Response Actions
1	Up to 10%	• Declaration by the City Council of up to a 10% mandatory reduction in water use based on the City's review of available water purchases from SFPUC or based on the determination that the SWRCB (or another governing authority) has required a mandatory reduction in water use of up to 10% due to water supply shortages or emergency. • Includes implementation of restrictions on end uses (see Table 6-1) as well as agency actions (see Table 6-2).
2	Up to 20%	• Declaration by the City Council of up to a 20% mandatory reduction in water use based on the City's review of available water purchases from SFPUC or based on the determination that the SWRCB (or another governing authority) has required a mandatory reduction in water use of up to 20% due to water supply shortages or emergency. • Includes implementation of restrictions on end uses (see Table 6-1) as well as agency actions (see Table 6-2).
3	Up to 30%	• Declaration by the City Council of up to a 30% mandatory reduction in water use based on the City's review of available water purchases from SFPUC or based on the determination that the SWRCB (or another governing authority) has required a mandatory reduction in water use of up to 30% due to water supply shortages or emergency. • Includes implementation of restrictions on end uses (see Table 6-1) as well as agency actions (see Table 6-2).
4	Up to 40%	• Declaration by the City Council of up to a 40% mandatory reduction in water use based on the City's review of available water purchases from SFPUC or based on the determination that the SWRCB (or another governing authority) has required a mandatory reduction in water use of up to 40% due to water supply shortages or emergency. • Includes implementation of restrictions on end uses (see Table 6-1) as well as agency actions (see Table 6-2).
5	Up to 50%	• Declaration by the City Council of up to a 50% mandatory reduction in water use based on the City's review of available water purchases from SFPUC or based on the determination that the SWRCB (or another governing authority) has required a mandatory reduction in water use of up to 50% due to water supply shortages or emergency.

Shortage Level	Percent Shortage Range	Shortage Response Actions
		• Includes implementation of restrictions on end uses (see Table 6-1) as well as agency actions (see Table 6-2).
6	>50%	• Declaration by the City Council of a greater than 50% mandatory reduction in water use based on the City's review of available water purchases from SFPUC or based on the determination that the SWRCB (or another governing authority) has required a mandatory reduction in water use of greater than 50% due to water supply shortages or emergency. • Includes implementation of restrictions on end uses (see Table 6-1) as well as agency actions (see Table 6-2).

6. SHORTAGE RESPONSE ACTIONS

☑ ***CWC § 10632 (a) (4)***

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

(A) Locally appropriate supply augmentation actions.

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

(C) Locally appropriate operational changes.

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

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

☑ ***CWC § 10632 (b)***

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

This section describes the response actions Burlingame will take to deal with the shortages associated with each of the six levels enumerated in Section 5.

6.1 Demand Reduction Methods

As discussed above and shown in Table 6-1, the WSCP lists the demand reduction methods that Burlingame may implement during each stage of action to reduce Burlingame's water consumption and encourage reduction in water use by its customers. Implementation of individual actions listed for each stage will be at the discretion of City staff and based on the resulting water demand reduction measured during implementation of actions at each stage. The monthly and cumulative annual water savings impacts associated with each restriction, prohibition, and consumption reduction method were quantitatively estimated using the Drought Response Tool (DRT), an Excel spreadsheet model developed by EKI Environment and Water, Inc., for each shortage level, see Attachment 3.

A main focus of Burlingame's planned demand reduction measures is to increase public outreach and keep customers informed of the water shortage emergency and actions they can take to reduce consumption. The public outreach efforts that Burlingame will implement to respond to a water shortage are described in Section 8.

6.2 Supply Augmentation

Burlingame does not currently have access to additional potable water supplies. Table 6-2 includes other actions that the City may take, including coordination with other agencies, implementing drought surcharge, increasing water waste patrols, etc.

Table 6-1. Demand Reduction Actions (DWR Table 8-2)

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? (a)	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
1	Other	5%	Stage 1 actions may include: 1. All hoses must be equipped with a positive shut-off nozzle. (c) 2. Broken or defective plumbing and irrigation systems must be repaired or replaced within a reasonable period. (c) 3. Potable water shall not be used to water outdoor landscapes in a manner that causes runoff onto non-irrigated areas, walkways, or other hard surfaces. 4. Potable water cannot be applied to outdoor landscapes during and within (24) hours after measurable rainfall. (c) 5. Potable water shall not be applied in any manner to any driveway or sidewalk, except when necessary to address immediate health or safety concerns. 6. Irrigation with potable water of ornamental turf on public street medians is prohibited. (c) 7. Use only re-circulated or recycled water to operate ornamental fountains. (c) 8. Restaurants and other food service operations shall serve water to customers only upon request. 9. Hotels and motels shall provide guests an option whether to launder towels and linens daily. Hotels and motels shall prominently display notice of this option using clear and easily understood language. (c) 10. Other measures as may be approved by Resolution of the City Council.	Yes
2	Other	15%	Stage 2 actions may include: 1. Continue with actions and measures from Level 1 except where superseded by more stringent requirements. 2. Prohibit installation of single-pass cooling systems. 3. Residential and commercial landscape irrigation with potable water is prohibited between the hours of 8:00 a.m. and 6:00 p.m. two (2) days per week. 4. Prohibit vehicle washing except with the use of recycled water.	Yes

Table 6-1. Demand Reduction Actions (DWR Table 8-2)

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? (a)	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
			5. Prohibit irrigation with potable water outside of newly constructed homes and buildings that is not delivered by drop or microspray systems. 6. Other measures as may be approved by Resolution of the City Council.	
3	Other	25%	Stage 3 actions may include: 1. Continue with actions and measures from Levels 1 and 2 except where superseded by more stringent requirements. 2. No new turf shall be installed at new construction sites. 3. Prohibit the use of potable water for street washing. 4. Residential and commercial landscape irrigation with potable water is limited to no more than one (1) day per week on a schedule established by the Director and posted on the City's website. 5. Implement drought rate structure. 6. Other measures as may be approved by Resolution of the City Council.	Yes
4	Other	35%	Stage 4 actions may include: 1. Continue with actions and measures from Levels 1, 2 and 3 except where superseded by more stringent requirements. 2. Implement water budget for customers. Water use shall not exceed water budgets established for each customer. 3. Other measures as may be approved by Resolution of the City Council.	Yes
5	Other	45%	Stage 5 actions may include: 1. Continue with actions and measures from Levels 1 through 4 except where superseded by more stringent requirements. 2. Outdoor irrigation is prohibited at all times. 3. Existing irrigation systems shall not be expanded. 4. Reduce water budget from Stage 4 amounts. Water use shall not exceed water budgets established for each customer. 5. No new potable water service shall be provided, no new temporary meters or permanent meters shall be provided, and no statements of immediate ability to serve or provide potable water service (such as, will-	Yes

Table 6-1. Demand Reduction Actions (DWR Table 8-2)

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? (a)	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
			serve letters, certificates or letters of availability) shall be issued by the City, except under the following circumstances: a. A valid, unexpired building permit has been issued for the project; or b. The project is necessary to protect the public's health, safety, and welfare; or c. The applicant provides substantial evidence of an enforceable commitment that water demands for the project will be offset prior to the provision of a new water meter(s) to the satisfaction of the Public Works Director; or d. To provide continuation of water service or to restore service that has been interrupted for a period of one year or less. 6. Other measures as may be approved by Resolution of the City Council.	
6	Other	55%	Stage 6 actions may include: 1. Continue with actions and measures from Levels 1 through 5 except where superseded by more stringent requirements. 2. Reduce water budget from Stage 5 amounts Water use shall not exceed water budgets established for each customer. 3. Other measures as may be approved by Resolution of the City Council.	Yes
NOTES: (a) The percentages listed in this table are the cumulative savings for each shortage level with implementation of corresponding supply augmentation and other agency actions in Table 6-2. Detailed saving estimates based on end use, response action, and implementation rates can be found in Attachment 3. (b) Table 6-1 lists each demand reduction action as "other" because they represent a suite of demand reduction actions for each shortage level that include multiple categories of demand reduction actions provided in the DWR drop down menu. (c) Stage 1 includes permanent water use restrictions that are part of Burlingame's municipal code (see Attachment 1).				

Table 6-2. Supply Augmentation and Other Actions (DWR Table 8-3)

Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier	How much is this going to reduce the shortage gap? (a)	Additional Explanation or Reference
1	Other	5%	Stage 1 actions may include: 1. Inform customers that there is a water shortage emergency and the list of actions they can take to reduce water use (e.g., via direct mail, bill inserts, etc.). 2. Increase public outreach, including information regarding fines or penalties for non-compliance. 3. Conduct in-house training so City staff are prepared to respond to customer calls, reports and complaints, and to support enforcement actions. 4. Conduct coordination with BAWSCA and SFPUC.
2	Other	15%	Stage 2 actions may include: 1. Continue with actions and measures from Level 1. 2. Reduce frequency of water main flushing. 3. Inform local fire department of water supply status and request cooperation in reducing of fire training exercises that use water. 4. Evaluate potential implementation of drought surcharge on water rates. 5. Suspend issuance of building permits for new residential pools, spas, and hot tubs.
3	Other	25%	Stage 3 actions may include: 1. Continue with actions and measures from Levels 1 and 2. 2. Increase public outreach, including hosting public events and workshops and providing water use reports. 3. Increase enforcement and water waste patrols. 4. Suspend routine flushing of water mains. 5. Convert to more frequent water reading and billing. 6. Offer water use surveys to the top 10% of each water use sector.

Table 6-2. Supply Augmentation and Other Actions (DWR Table 8-3)

Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier	How much is this going to reduce the shortage gap? (a)	Additional Explanation or Reference
4	Other	35%	Stage 4 actions may include: 1. Continue with actions and measures from Levels 1, 2 and 3. 2. Continue increasing public outreach, including top residential and commercial users. 3. Continue increasing enforcement and water waste patrols. 4. Perform an audit of distribution system to reduce system water loss. 5. Reduce distribution system pressures. 6. Develop water budgets for all accounts and notice those accounts appropriately if necessary.
5	Other	45%	Stage 5 actions may include: 1. Continue with actions and measures from Levels 1 through 4. 2. Continue increasing public outreach. 3. Continue increasing enforcement and water waste patrols. 4. Increase water budget reduction requirements from Stage 4.
6	Other	55%	Stage 6 actions may include: 1. Continue with actions and measures from Levels 1 through 5. 2. Continue increasing public outreach. 3. Continue increasing enforcement and water waste patrols. 4. Increase water budget reduction requirements from Stage 5. 5. Implement other emergency actions.

NOTES:
(a) The percentages listed in this table are the cumulative savings for each shortage level with implementation of corresponding demand reduction actions in Table 6-1. Detailed saving estimates based on end use, response action, and implementation rates can be found in Attachment 3.
(b) Table 6-2 lists each supply augmentation method or other actions by water supplier action as "other" because they represent a suite of actions by the water supplier for each shortage level that include multiple categories of actions provided in the DWR drop down menu.

6.3 Operational Changes

The WSCP lists the operational changes that Burlingame will implement during each stage of action including measures to: (1) reduce system losses through a reduction in line flushing and fire training exercises; (2) utilize non-potable water for applicable City operations, such as street sweeping; (3) increase enforcement and patrols; (4) develop water budgets; and in certain conditions, (5) implement a moratorium on new services.

6.4 Additional Mandatory Restrictions

Burlingame has the authority to restrict or prohibit specific water use practices during water shortages (Chapter 15.06 of the City of Burlingame Municipal Code, see Attachment 1). Restrictions and prohibitions associated with each stage of action are presented in Table 6-1. As discussed above, these responses focus on the reduction of non-essential water uses such as ornamental landscape irrigation, and preserve water uses that are essential to the health, safety, welfare, and economic vitality of Burlingame's customers.

In addition, several mandatory prohibitions are enforced at all times as part of Shortage Level 1 to eliminate water waste. The prohibitions listed in Shortage Levels 1 include each of the prohibitions on end uses mandated by Amending Ordinance No. 1994 under Chapter 15.06 of the City of Burlingame Municipal Code (see Attachment 1). Prohibitions in subsequent stages go beyond the former SWRCB requirements and become increasingly restrictive.

6.5 Emergency Response Plan

Catastrophic supply interruptions may be caused by a regional power outage, an earthquake, or other disaster. Burlingame benefits from two levels of emergency planning: planning by SFPUC and its own emergency planning work. In the event of a catastrophic supply interruption, the response procedures that Burlingame would follow are described in:

- SFPUC Emergency Operations Plan (EOP);
- San Mateo County's Operational Area EOP Potable Water Procurement and Distribution Annex;
- Burlingame's EOP;
- Burlingame's Potable Water Emergency Plan (PWEP); and
- Burlingame's Water System Emergency Response Plan (ERP).

Actions described in the SFPUC EOP focus on maintaining flow within, and from, the RWS pipelines. Burlingame's EOP was written in coordination with the County of San Mateo's Operational Area EOP Potable Water Procurement and Distribution Annex (County of San Mateo, 2004).

Together, these EOPs provide the framework for responding to major emergencies or disasters associated with natural disasters, technological incidents, and national security/terrorism emergencies or disasters associated with natural disasters, technological incidents, and national security/terrorism emergencies. Sections of these EOPs outline specific strategies to prepare for, mitigate, respond to, and recover from an emergency or disaster that affects the water utilities that serve the population within San Mateo County and Burlingame, in particular.

In the event that this water is unsafe for consumption, Burlingame plans to distribute potable water to residents at emergency distribution centers. The following sections summarize the information presented in the aforementioned Plans, including measures to be taken to ensure the reliability of the water supply, and describe the methods by which Burlingame would distribute drinking water to its residents in the event of a water system emergency.

6.5.1 Potable Water Emergency Operations Plan

Burlingame's Potable Water Emergency Plan (PWEP), an annex to the City's EOP, guides the City's emergency management in an organized response to water treatment and distribution emergencies that affect the City. The City conducts training periodically to help assure that City personnel are up to date regarding of the emergency response procedures. Detailed information on personnel roles, responsibilities, emergency services, communication, recovery, and reporting procedures are provided in the PWEP.

In the event of an emergency, Burlingame will implement its PWEP, the first step of which involves conducting an immediate Damage Assessment of the System to identify and report any problems associated with pumps, storage facilities, and water infrastructure. Critical pump stations have onsite emergency power generators to provide uninterrupted power and the City can supply a portable generator to provide power those pump stations that are not permanently equipped with emergency generators. The City can also pump water to different parts of the system through alternate routes if a pump station is inoperable or can backfeed the system from Mills Reservoir.

If the water supplied through the regional water system is not potable or cannot otherwise be treated for potable use, Burlingame will distribute emergency drinking water supplies, most likely in one-gallon plastic containers, from designated Emergency Shelters (such as City facilities and school campuses). The location of these shelters will be determined based on the emergency at-hand. It is estimated that, given the normal operating capacity of its storage reservoirs, Burlingame has approximately 1.6 million gallons of water in storage. In an emergency situation, this quantity would be sufficient to provide the City's residents with five gallons per person per day for 11 days, two gallons per person per day for 27 days, or one gallon per person per day for 54 days.

6.5.2 Burlingame Water Division Emergency Response Plan

The City's Water System ERP includes plans and procedures that can be implemented in the event of a terrorist or other intentional attack on the public water system to lessen the impact of on the safety and supply of drinking water. It is the City's intent that the ERP be used in conjunction with the San Mateo EOP Center Guidebook and Section Checklists and the City's EOP.

Much of the information contained in the City's ERP was compiled from the United States Environmental Protection Agency's (USEPA's) *Response Protocol Toolbox: Planning for and Responding to Drinking Water Contamination Threats and Incidents,* the final module of which is dated April, 2004. The purpose of USEPA's Guidance Document is to assist water systems in complying with the Public Health Security and Bioterrorism and Response Act, dated 12 June 2002 (42 USC 201 et seq.). Burlingame's most recent ERP is dated 2014 and is being updated as required per Section 2013 of America's Water Infrastructure Act of 2018.

The City's ERP details threat evaluations, site characterizations, planned public health and operational responses, public notification strategies, short-term alternate domestic water supplies, and remediation and recovery actions. The City's ERP considers five different potential incidents identified from available USEPA guidance:

- Contamination of the water system;
- Contamination at a major event;
- Notification from health officials of potential water contamination;
- Intrusion through Supervisory Control and Data Acquisition (SCADA) system; and
- Structural damage.

Evaluation of these threats is to be carried out according to the management structure outlined in the City's ERP. Agencies included in this discussion are consistent with the five designated levels of the Standardized Emergency Management System (SEMS) defined in the California Code of Regulations, Title 19 (Division 2, Chapter 1). The SEMS is intended to standardize responses to emergencies that involve multiple jurisdictions or multiple agencies. The organizational levels referred to in these regulations are: (1) field response (e.g., local fire and police departments), (2) local government (i.e., the City of Burlingame), (3) operational area (i.e., San Mateo County), (4) regional, and (5) State (led by the Governor's Office of Emergency Services).

6.6 Seismic Risk Assessment

☑ ***CWC § 10632.5***

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

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

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

G&E Engineering Systems, Inc. completed a Seismic Vulnerability Assessment for Burlingame's water system in 2003 and recommended a number of improvements, including performing detailed seismic evaluations of tanks and pump station buildings, anchoring of essential equipment at tanks and pump stations, installing emergency bypasses on key pipelines that cross liquefaction or landslide zones, installing saltwater standpipes for firefighting along shoreline water fronts, upgrading the roof system systems for the Hillside and Skyline reservoirs, and installation of additional water storage facilities. Since 2003, the City has completed high priority and cost effective projects identified in the assessment including seismic upgrades to Mills and Hillside reservoirs infrastructure.

Impacts associated with earthquakes and liquefaction are discussed in the 2016 San Mateo County Hazard Mitigation Plan (County HMP; County of San Mateo, 2016). The County HMP includes a discussion of the probability of a seismic event affecting San Mateo County, citing a United States Geological Survey (USGS) estimate of a 63% probability of at least one 6.7 or greater magnitude earthquake before 2036 affecting the greater San Francisco Bay area. The County HMP also includes an assessment of the County's vulnerability in the event of a major seismic event, and estimates that an earthquake on the Northern San Andreas Fault of magnitude 7.8 would result in a total building damage of approximately $39.7 billion, or 12.4% of the total assessed value for the planning area.

6.7 Shortage Response Action Effectiveness

In order to evaluate and ensure that effective actions will be implemented with the proper level of intensity, Burlingame employed the DRT to calculate monthly savings anticipated by implementing each stage of action as detailed below.

6.7.1 Baseline Water Use Profile

Using the DRT, Burlingame developed a baseline water use profile that reflected usage patterns within Burlingame's service area by major water use sector during Fiscal Year 2018 and was used to guide development of the WSCP. Key findings from this analysis are presented below.

Residential Per Capita Demand

As shown in Table 6-3 and Figure 6-1, Burlingame's baseline residential gallons per capita per day (R-GPCD) demand in 2018 was approximately 64 R-GPCD. This R-GPCD is slightly above the BAWSCA-wide average of 61 R-GPCD but is significantly less than the statewide average of 85 R-GPCD.

Estimated Proportion of Outdoor Water Use

As shown in Table 6-4, Figure 6-2, and Figure 6-3, outdoor water use, which can generally be considered as a "discretionary water use", was estimated to be approximately 23% of Burlingame's total consumption during this baseline time period (2018). Notably, dedicated irrigation meters accounted for approximately 22% of the total estimated irrigation demand, indicating that approximately 78% of outdoor water use is not metered with a separate meter, and is therefore more difficult to track and directly target.

The proportion of outdoor water use within residential and commercial sectors is estimated to be 20%. This indicates that there is the potential to achieve moderate water savings across these sectors (e.g., up to WSCP Shortage Level 2), simply by focusing on outdoor uses. If the proportion of outdoor water use is being underestimated by the DRT method, then even more substantial savings may be achieved through targeting outdoor water use. As further shown in Table 6-4, Figure 6-2, and Figure 6-3, the seasonal variation in baseline water use reflects increased irrigation demands during the summer and fall months. Therefore, the greatest potential for reductions in non-essential water use is expected during these months.

Non-Revenue Water Use

Non-revenue water use is calculated by subtracting the total water use (from SFPUC billing data) by water use from individual sectors (from Burlingame meter readings). Billing cycles for SFPUC and Burlingame are not aligned, so total monthly water use is estimated by averaging the current and prior month in order to yield a single monthly water use. Because of this data processing, non-revenue water for certain months has negative values, however overall totals for individual sectors and non-revenue water use are correct.

Table 6-3. Baseline Residential Per Capita Water Demand

	Baseline Residential Per Capita Water Demand (R-GPCD)
Burlingame[a]	64
BAWSCA Agencies[b]	61
Statewide Average[c]	85

NOTES:
(a) Burlingame R-GPCD calculated using 2018 metering data.
(b) Average BAWSCA R-GPCD calculated from data provided in BAWSCA Annual Survey FY 2018-19 (BAWSCA, 2020).
(c) Statewide R-GPCD for 2019 obtained from data provided by the California State Water Resources Control Board Water Conservation Portal - Conservation Reporting, http://www.waterboards.ca.gov/water_issues/programs/conservation_portal/conservation_reporting.shtml, accessed March 2021.

Figure 6-1. Baseline Residential Per Capita Water Demand

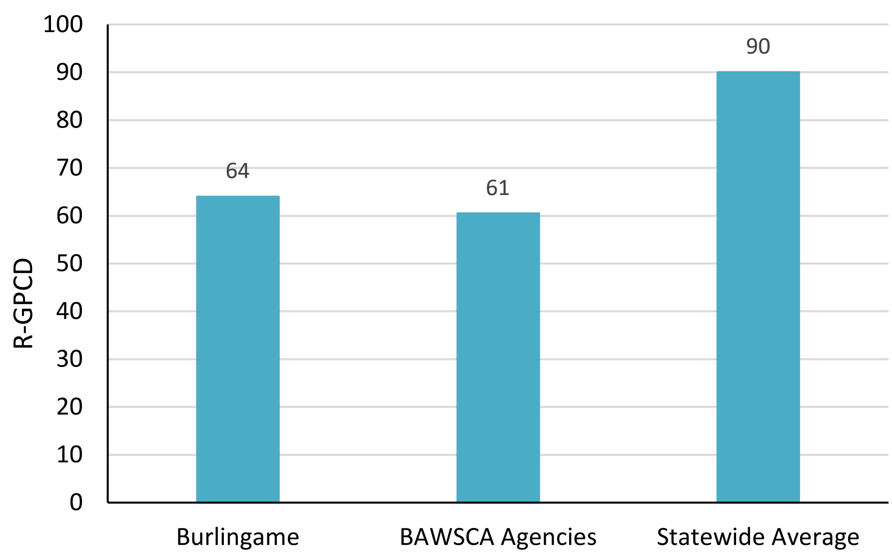


Table 6-4. Baseline Water Use Profile

Sector	End-Use	Baseline (2018) Water Use[b]													Annual % of Total by Sector
		January	February	March	April	May	June	July	August	September	October	November	December	Annual	
Residential	Indoor[c]	49	44	49	47	49	47	49	49	47	49	47	49	577	77%
	Outdoor[c]	4	4	0	0	1	12	20	28	31	27	27	15	172	23%
	Subtotal Residential	*53*	*49*	*49*	*47*	*50*	*60*	*69*	*77*	*79*	*76*	*75*	*64*	*748*	-
CII	Indoor[c]	28	25	28	27	28	27	28	28	27	28	27	28	330	86%
	Outdoor[c]	1	3	0	2	1	6	6	10	11	7	8	1	54	14%
	Subtotal CII	*29*	*28*	*28*	*29*	*29*	*33*	*34*	*38*	*38*	*35*	*35*	*29*	*384*	-
Dedicated Irrigation	Outdoor	3	2	2	2	2	6	8	10	10	8	8	4	65	100%
Non-Revenue	Non-Revenue	-1	0	7	13	32	24	19	8	-2	0	-19	-12	68	100%
Total[a]	Indoor	77	70	77	75	77	75	77	77	75	77	75	77	907	72%
	Outdoor	8	9	2	4	4	25	34	48	52	42	43	21	291	23%
	Non-Revenue	-1	0	7	13	32	24	19	8	-2	0	-19	-12	68	5.4%
	Total	**84**	**79**	**86**	**91**	**113**	**123**	**130**	**133**	**124**	**119**	**98**	**86**	**1,265**	-

NOTES:
(a) Volumes are in units of MG.
(b) Baseline water use data from Burlingame's monthly metering data for each sector.
(c) Indoor water use was estimated to be the lowest monthly water use for each sector, accounting for the number of days in each month. Outdoor water use for each sector was estimated to be the difference between the total water use and the estimated indoor water use.
(d) Negative values are the result of differences in billing cycles between SFPUC (total production) and Burlingame (metered usage for individual sectors).

Figure 6-2. Baseline Year Annual Water Use by Sector and End Use

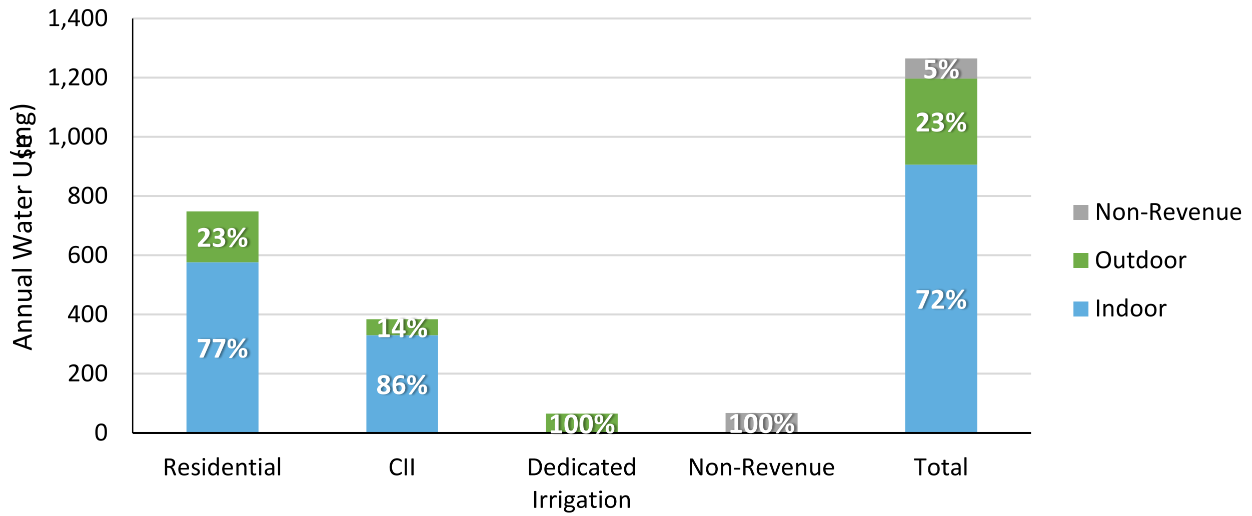
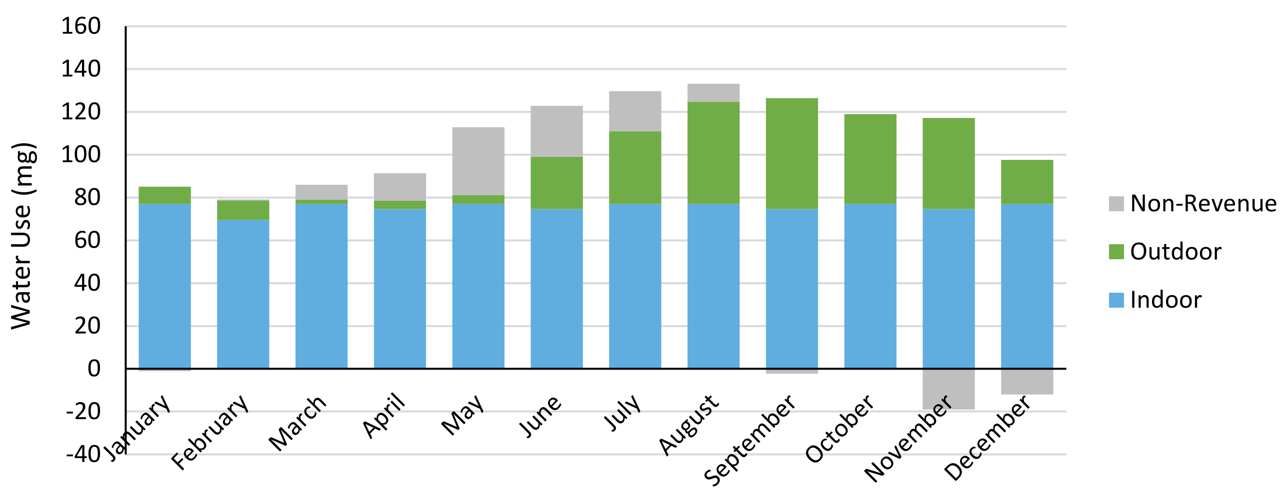


Figure 6-3. Baseline Year Monthly Indoor vs. Outdoor Water Use



6.7.2 Shortage Response Action Effectiveness

The DRT provides a quantitative framework that allows Burlingame to systematically estimate the monthly and cumulative annual demand reductions expected to result from particular combinations of drought response actions and associated implementation rates. Data inputs to the DRT include total production, class-specific water use, population, and assumptions regarding the split between indoor and outdoor water use for each customer class.

For each drought response action, the user specifies:

- The customer class(es) and end use(s) that are affected;
- The percent savings for that end use for each account that implements the action. These are based on evaluations reported in the literature; and
- The percentage of accounts assumed to implement the action, which is presumed to be the result of the intensity level of Burlingame's program implementation, including but not limited to, marketing and enforcement activities.

An additional critical DRT user input is a set of constraints on demand reductions to ensure that usage levels do not endanger health and safety or result in unacceptable economic impacts. The DRT will not permit estimated usage reductions to violate these constraints, regardless of the demand reduction actions selected. The constraints are:

- A minimum residential indoor per capita daily usage of 25 gallons,
- A maximum residential outdoor usage reduction of 100%,
- A maximum CII indoor usage reduction of 30%,
- A maximum CII outdoor usage reduction of 100%,
- A maximum dedicated irrigation usage reduction of 100%, and
- A maximum non-revenue water usage reduction of 50%.

Based on the foregoing data, the DRT model calculates the resulting monthly savings. Burlingame adjusted the combination of actions and implementation levels to achieve the targeted savings levels at each of the six stages of action.

For each of the stages of action, the modeling targeted the mid-range of the required demand reduction range, ergo:

- 5% for Stage 1,
- 15% for Stage 2,
- 25% for Stage 3,
- 35% for Stage 4,
- 45% for Stage 5, and
- 55% for Stage 6.

Burlingame's shortage response actions are summarized in Table 6-1 and Table 6-2. Key DRT inputs and outputs for each of the stages of action are reproduced in Attachment 3, including the water shortage reduction actions, savings assumptions, and implementation rates that are required for Burlingame to achieve the required annual demand reductions for each of the six stages of action. At each stage, there are two types of demand-reduction actions identified:

- Restrictions on customer water usage; and
- Consumption reduction actions by Burlingame to encourage decreased water usage.

Many actions are implemented across a number of stages, some at increasing implementation levels. Therefore, the actions in Table 6-1 and Table 6-2 are listed as a row under the first stage at which they are implemented. The percentages shown in the tables represent savings of the end uses.

7. COMMUNICATION PROTOCOLS

☑ ***CWC § 10632 (a) (5)***

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

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

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

(C) Any other relevant communications.

Each stage of the WSCP may be implemented with a formal declaration by the Burlingame City Council based on the City's review of available water purchases from SFPUC, or based on the determination that the SWRCB (or another governing authority) has required a mandatory reduction in water use due to water supply shortages or emergency. Procedures for water shortage declaration and termination are detailed below in Section 7.1.

Even before formal declaration of a water shortage, a public information program will be activated to provide customers with as much advance notice as possible. Following declaration of a shortage, Burlingame customers will be provided with notice of water shortage rules and regulations via a variety of media and communications methods (e.g., citywide electronic newsletter, City Council meetings, social media, etc.).

Coordination between Burlingame and with other public agencies can begin prior to formal declaration of a water shortage and can be accomplished through regular meetings, e-mail group updates, and presentations. In a regional water shortage scenario, Burlingame would use the public outreach resources and materials provided by BAWSCA and/or the SFPUC. In addition to these materials, Burlingame may develop its own materials to communicate with customers, such as a dedicated water bill inserts, and expand its normal public outreach to support its water conservation efforts (see Chapter 9 of the UWMP). Communication and public outreach actions to be taken by the City under each shortage level are detailed in Table 6-2.

The City currently has several staff members equating to an approximately one (1) full-time equivalent (FTE) staff person dedicating time to water conservation efforts. Staff time dedicated to water conservation and enforcement action will increase with the severity of a supply shortage. Additional duties may be assigned to other City employees and hiring of temporary staff may be considered to meet staffing needs during extreme water shortages.

7.1 Water Shortage Declaration and Termination Procedures

The provisions of each water shortage stage of action may be implemented, at the discretion of City staff, upon the determination by Burlingame City Council that the City must achieve a mandatory reduction in water use. As described above, the determination will be based on the City's review of available water purchases from SFPUC or based on the determination that the SFPUC or SWRCB (or another governing authority) has required a mandatory reduction in water use because of water shortage conditions.

The levels of action will become effective after the City Council declares a particular level of action and Burlingame city staff have published notice of this determination. Once effective, the provisions of a water shortage stage of action will stay in effect until: (1) a different stage of action is declared; or (2) the City Council or another governing authority determines that the water shortfall condition no longer exists.

After the termination of the water shortage conditions, Burlingame city staff will oversee any remaining termination and WSCP review activities. These activities may include:

- Publicize gratitude for the community's cooperation.
- Restore water utility operations, organization, and services to pre-water shortage levels.
- Document and compile the water shortage event and response for future reference.
- Collect cost accounting information, assess revenue losses and financial impact, and review deferred projects or programs.
- Debrief staff to review effectiveness of actions, identify the lessons learned, and enhance response and recovery efforts in the future.
- Update the WSCP, as needed.

8. COMPLIANCE AND ENFORCEMENT

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

To help ensure that the City's water customers will comply with the provisions of this WSCP, city staff will take an educational approach prior to issuing fines or penalties. The City will publicize the water waste restrictions in several places, including the City's website, citywide electronic newsletter, social media channels, and public facilities (e.g. City Hall). Additionally, the City may be informed of water waste violations through water-waste patrols or by members of the public. Water waste violations may be reported in the following ways: (1) calling the Water Conservation hotline, (2) reporting in-person at City Hall, (3) using AccessBurlingame[2] (the City's online public service request tool), or (4) emailing city staff.

Enforcement of Burlingame's water use restrictions and prohibitions focuses on education and soliciting cooperation from water customers who are unaware of these restrictions or have failed to comply with Chapter 15.06 of the Burlingame Municipal Code (see Attachment 1) and this WSCP. If discussions with the customer are unsuccessful in achieving compliance, the City is authorized to issue penalties to customers that violate the water use restrictions. The following protocol outlines steps that the City will take when responding to water waste violations:

1. **Verbal Warning** – Issued to water customers without a history of prior violations. City staff will contact the customer and educate them of the City's water use restrictions.
2. **Written Warning** – Issued to water customers who have received a verbal warning but have not achieved compliance. City staff will contact the customer and educate them of the City's water use restrictions, including sending a written warning letter that describes the violation(s), corrective action(s), and additional enforcement action(s) that may be taken if compliance is not achieved.
3. **Notice of Violation** – Issued to water customers who have received a warning letter but have not achieved compliance. The City will send a written Notice of Violation that describes the violation(s), corrective action(s), and additional enforcement action(s) that may be taken if compliance is not achieved.
4. **Administrative Citation –** Issued to water customers who have received a Notice of Violation but have not achieved compliance. The City may impose the penalties for excess water consumption, including an excess use charge, flow-restricting device(s), and/or discontinuance of water service. At a minimum, the Administrative Citation will include the following monetary fines as outlined in the Burlingame Municipal Code Chapter 1.12 Violation of Code:
    a. A fine not exceeding one hundred dollars ($100) for the first violation;
    b. A fine not exceeding two hundred dollars ($200) for the second violation of the same code section within twelve (12) months; and

[2] https://www.burlingame.org/departments/code_compliance/accessburlingame.php

c. A fine not exceeding five hundred dollars ($500) for each additional violation of the same code section within twelve (12) months.

Any recipient of an Administrative Citation may contest it by requesting a hearing in writing and submitting the request for an advance deposit hardship waiver within thirty (30) calendar days from the date the Administrative Citation is served. A request for hearing must be submitted in writing to the City Department who issued the citation. The failure of any alleged violator to appear at the hearing after proper notice or, in the alternative, to present written or demonstrative evidence shall constitute an admission of the violation by the alleged violator and an exhaustion of administrative remedies that may bar judicial review. The alleged violator may seek judicial review of the decision of hearing officer by filing a petition with a court of competent jurisdiction pursuant to California Code of Civil Procedure §1094.5 and §1094.6.

Exceptions to water allocations or water shortage restrictions can be made by submitting a written application to City Hall. Each application will be reviewed and a final determination will be made by the Public Works Director. Denials of applications may be appealed to the Burlingame City Council whose decision will be final. Exceptions may be granted for undue hardship to the applicant or a condition affecting health, sanitation, or safety of the applicant or the general public. More information is found in Chapter 15.06 of the Burlingame Municipal Code (see Attachment 1).

9. LEGAL AUTHORITIES

☑ ***CWC § 10632 (a) (7)***

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

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

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

☑ ***CWC § 10632.3***

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

As discussed above, Burlingame has legal authority within Chapter 15.06 of the City of Burlingame Municipal Code to require water use restrictions and to enforce penalties for excess water consumption. Municipal Code Chapter 15.06.010 states that “the provisions of this chapter shall be implemented only upon adoption by the city council of a declaration that a water shortage condition exists that requires special conservation measures or emergency allocation measures pursuant to California Water Code Section 350 et seq.” Municipal Code Chapter 15.06 and adopted Water Shortage Contingency Plan resolution are included as Attachment 1 and Attachment 4, respectively.

In the event of a local water shortage emergency, the City shall coordinate with San Mateo County within which it provides water supply services for the possible proclamation of a local emergency under California Government Code, California Emergency Services Act (Article 2, Section 8558).

Contact Information: County of San Mateo
Address: 400 County Center, Redwood City, CA 94063
Phone: (650) 363-4000

Burlingame is a member of BAWSCA and anticipate coordinating with other Member Agencies via BAWSCA during a water shortage or emergency on the SFPUC RWS.

10. FINANCIAL CONSEQUENCES OF WSCP

☑ ***CWC § 10632 (a) (8)***

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

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

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

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

In the event of a drought, if the City anticipates significant loss in revenue due to decreased consumption, the City may increase its water rates so that customers are charged for the actual cost of providing water during a shortage. These rates will be specified in the City of Burlingame's water rate schedule, as approved by the City Council and in accordance with Proposition 218 requirements. Additionally, the City of Burlingame carries a rate stabilization line item in its annual budget. These funds are used by the City to overcome revenue impacts due to fluctuating water use such as occur during a water shortage.

Bartle Wells Associates prepared a Water Rate Study for Burlingame in November 2016 (Bartle Wells, 2016). The study includes a discussion of the financial impacts of the 2013-2016 drought. For instance, water sales decreased by approximately 15% from fiscal year 2013/14 through fiscal year 2015/16 as customers responded to the drought by substantially reducing water consumption. This resulted in water sales revenue loss of approximately $1.8 million due to the decline in water use, a partially-offsetting $0.9 million reduction in wholesale water purchases, and a net revenue loss of approximately $0.9 million.

The new water rates included in the rate study and adopted by the City on December 5, 2016 were developed to mitigate increased water system costs cause by increased wholesale water rates from SFPUC, replacement of aging and deficient infrastructure, and the decline in water sales.

Additionally, the City may consider development and implementation of a drought-specific rate structure. The City may also defer expense on capital improvement projects during a severe drought.

11. MONITORING AND REPORTING

☑ ***CWC § 10632 (a) (9)*** *For an urban retail water supplier, monitoring and reporting requirements and procedures that ensure appropriate data is collected, tracked, and analyzed for purposes of monitoring customer compliance and to meet state reporting requirements.*

Burlingame monitors water use through analysis of wholesale water purchases and customer meter readings. For wholesale water purchases, the City reads meters installed on each of its supply turnouts. In addition, all customer accounts are metered with a radio meter that provides advanced meter reading. Some non-residential and multi-family customers also have separate irrigation meters to monitor water use for landscape irrigation separately from indoor uses. Water consumption data for all customer accounts (e.g., single family residential, commercial, and city-owned facilities) are already generated on a monthly basis. The City will monitor these monthly consumption reports to determine if it is meeting the applicable Water Shortage Level outlined in Section 5. Water consumption data at city-owned facilities will be shared with the relevant department's director. For example, monthly water use data for city-owned parks will be sent to the Parks and Recreation Director. All other water customers may access their water usage history on their water bill. The City will be reviewing these monthly reports closely to ensure that the demand reduction measures are actually achieving their intended water use reduction. If the City is not meeting its reduction goals, additional demand reduction actions will be considered.

As discussed in Section 8, the City has a protocol for facilitating customer compliance with the WSCP. The City will keep a record of all enforcement documentation, including written warning letters, notices of violations, and administrative citations.

Pursuant to California Code of Regulations (CCR) Title 23 § 991, Burlingame reports monthly water use and production to the SWRCB[3]. Effective October 1, 2020, during a governor declared drought emergency or when an urban water supplier invokes a water shortage level to respond to a drought greater than 10%, each supplier is required to submit an expanded report that contains the supplier's actions and statistics in achieving planning reductions.

[3] Water supplier monthly reports can be accessed at https://www.waterboards.ca.gov/water_issues/programs/conservation_portal/conservation_reporting.html

12. WSCP REFINEMENT PROCEDURES

☑ ***CWC § 10632 (a) (10)*** *Reevaluation and improvement procedures for systematically monitoring and evaluating the functionality of the water shortage contingency plan in order to ensure shortage risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented as needed.*

The City will monitor its water consumption and apply the necessary demand reduction actions to achieve its reduction goals. If the results indicate that these goals are not being attained, then the City will implement additional demand reduction actions. However, if significant additional demand reduction actions are required that are outside of the current shortage level or if new actions (i.e. actions not listed in Table 6-1) becomes necessary, the City will revise this WSCP. The City will consider new demand reduction actions proposed by other city staff, water customers, and/or other interested parties or mandated by the SWRCB. These actions will go through the same evaluation process as the actions listed in Table 6-1, including usage of the Drought Response Tool to quantify the estimated water savings. New actions that demonstrate to be highly effective in achieving the desired water reduction goals will be prioritized.

Minor updates to the WSCP will be approved by the Public Works Director and significant updates (e.g. new water waste restrictions) will be approved by the City Council. This is to ensure that new minor actions can be implemented quickly at the appropriate water shortage level and avoid delays while recognizing that additional citywide water waste restrictions should be discussed publicly and approved by the City Council.

13. SPECIAL WATER FEATURE DISTINCTION

☑ ***CWC § 10632 (b)***

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

For purposes of the Water Shortage Contingency Plan, the City of Burlingame defines special water features as objects that are artificially supplied with water, such as ponds, lakes, waterfalls, and fountains. Special water features do not include recreational water features, such as swimming pools and spas as defined in subdivision (a) of Section 115921 of the Health and Safety Code. Prohibitions on water use for special water features are listed separately from those that are recreational water features (Table 6-1).

14. PLAN ADOPTION, SUBMITTAL, AND AVAILABILITY

☑ ***CWC § 10632 (c)*** *The urban water supplier shall make available the water shortage contingency plan prepared pursuant to this article to its customers and any city or county within which it provides water supplies no later than 30 days after adoption of the water shortage contingency plan.*

Burlingame has informed the public and the appropriate agencies of: (1) its intent to prepare a WSCP, (2) where the WSCP was available for public review, and (3) when the public hearing regarding the WSCP would be held. All notifications were completed in compliance with the stipulations of Section 6066 of the Government Code.

A copy of the adopted 2020 WSCP including any amendments will be provided to the Department of Water Resources (DWR), the California State Library and San Mateo County within 30 days of the adoption (Attachment 4). An electronic copy of the adopted 2020 WSCP will be submitted to DWR using its online Water Use Efficiency data submittal tool.

A copy of the adopted 2020 WSCP will be available for public review in the Burlingame City Hall during normal business hours and on the City of Burlingame website (www.burlingame.org/water) within 30 days after filing the plan with DWR.

15. REFERENCES

BAWSCA, 2020. *Bay Area Water Supply and Conservation Agency Annual Survey FY 2018-19*, March 2020.

Bartle Wells, 2016. *City of Burlingame Water Rate Study,* 8 November 2016

County of San Mateo, 2004. *San Mateo County/Operational Area Emergency Operations Plan, Potable Water Procurement and Distribution Annex*, *3rd Edition*, July 2004.

ATTACHMENT 1
CHAPTER 15.06 OF CITY OF BURLINGAME'S MUNICIPAL CODE AND AMENDING ORDINANCE NO. 1994

Chapter 15.06 WATER SHORTAGE EMERGENCIES

15.06.010 Implementation of chapter.

(a) The provisions of this chapter shall be implemented only upon adoption by the city council of a declaration that a water shortage condition exists that requires special conservation measures or emergency allocation measures pursuant to California Water Code Section 350 et seq.

(b) The provisions of the chapter shall be of no further force or effect when the city council determines that a water shortage condition no longer exists. (Ord. 1101 § 1, (1977); Ord. 1365 § 1, (1988))

15.06.020 Definitions.

For the purposes of this chapter, the following terms, phrases, words and their derivations shall have the meaning given in this chapter:

(a) "Customer" is any person using water supplied by the Burlingame water department.

(b) "Director" is the director of public works of the city of Burlingame.

(c) "Emergency allocations" are the allocations allowed various classifications of customers to achieve a specific reduction in water use necessitated by a water shortage of emergency proportions.

(d) "Person" is any person, firm, partnership, corporation, company or organization of any kind.

(e) "Special conservation measures" are the measures required to achieve a specific reduction in water use necessitated by a water shortage which has not reached emergency proportions.

(f) "Unit of water" is one thousand (1,000) gallons of water.

(g) "Water" is water from the water department.

(h) "Water department" is the Burlingame municipal water system.

(i) "Water shortage" means a water shortage condition declared by the city council pursuant to Sections 350 et seq., of the Water Code. (Ord. 1101 § 1, (1977); Ord. 1365 § 1, (1988))

15.06.030 Allocations.

When the city council declares a water shortage that requires emergency allocations, it shall specify in the declaration the specific allocations required to achieve the specified reduction in water use. The allocations may include any or all of the following classifications:

(a) Single-party residential and multifamily residential customers, including a minimum or lifeline allocation;

(b) Nonresidential customers:

(1) Industrial customers using process water to manufacture, alter, convert, clean, heat or cool a product, including water used in laundries and recycled car wash facilities,

(2) Industrial, commercial (including nonrecycled car wash facilities) and governmental agency customers;

(c) Irrigation and Outside Water Usage Customers. Irrigation of lawns, gardens, playfields, parks, median strips and landscaping of any type. (Ord. 1101 § 1, (1977); Ord. 1365 § 1, (1988))

15.06.040 Regulations and restrictions.

The city council at the time it declares a water shortage may adopt water use regulations and restrictions, including, but not limited to, any or all of the following:

(a) Broken or defective plumbing, sprinklers, watering or irrigation systems which permit the escape or leakage of water shall be immediately repaired.

(b) Irrigation of lawns, gardens, playfields, parks, median strips and landscaping of any type shall be reduced by an amount determined by the city council to be necessary to achieve the goals set forth in its declaration of a water shortage.

(c) No use of water shall be allowed which results in flooding or runoff in gutters, driveways or streets.

(d) When a hose is used for washing cars, buses, boats, trailers or other vehicles, or washing building structures or parts thereof, or any similar purpose, it shall have a positive shutoff valve.

(e) Use of a hose for the purposes set forth in subsection (d) of this section shall be prohibited.

(f) Restaurants shall serve water to customers only upon request.

(g) No water shall be used to clean, fill or maintain levels in decorative exterior fountains; interior fountains must recirculate water.

(h) Sidewalks, walkways, driveways, patios, parking lots, tennis courts or other hard-surfaced areas shall not be cleaned using water from hoses or by other use of water directly from faucets or other outlets.

(i) Draining and filling of any existing or new swimming pools with city-supplied water shall be prohibited.

(j) Service connections for new construction incorporating water-saving devices shall be granted as long as conditions of this chapter are met, provided no residential landscaping shall be installed during the water shortage.

(k) Construction water for consolidation of backfill and other nondomestic uses shall be denied if other methods of water sources can be used.

(l) No new residential irrigation services shall be permitted, and additional water shall not be allowed for expansion of existing irrigation facilities. (Ord. 1101 § 1, (1977); Ord. 1365 § 1, (1988))

15.06.050 Exceptions.

Considerations for exceptions regarding allocations of water or from any of the regulations and restrictions set forth herein shall be as follows:

(a) Written applications for exceptions shall be made to the City of Burlingame Water Department, 501 Primrose Road, Burlingame, California 94010.

(b) Each application shall be reviewed and determined by the director. Denials of applications may be appealed to the city council whose decision shall be final.

(c) The only grounds for granting such exceptions are:

(1) Undue hardship to the applicant, including adverse economic impacts such as loss of production or jobs;

(2) A condition affecting the health, sanitation or safety of the applicant or the general public.

Prior to granting an exception, the director must be satisfied that all practical water conservation measures have been adopted by the applicant. (Ord. 1101 § 1, (1977); Ord. 1365 § 1, (1988))

15.06.060 Penalties for excess water consumption.

The following penalties may be imposed on excess water consumption:

(a) Excess Use Charge. The city council shall set by resolution an amount to be added to the normal cost per unit for each unit in excess of allocation.

(b) Flow-Restricting Devices. The city manager may, after one written warning, direct the installation of a flow-restricting device on the service line of any customer observed by city personnel to be violating any of the regulations and/or exceeding water allocations hereinabove set forth.

Charges for installation and removal of flow-restricting devices shall be set by council.

First installation shall be a minimum of three (3) days, second and last installation, ten (10) days minimum.

(c) Discontinuance of Water Service. Continued water consumption in excess of the allocation may result in the discontinuance of water service by the water department. A reactivation charge shall be paid prior to reactivating the service.

(d) Fines and Penalties as Provided in Title 1 of this Code. Persons violating the provisions set forth in this chapter may also be subject to the fines and penalties set forth in Title 1 of this code. (Ord. 1101 § 1, (1977); Ord. 1365 § 1, (1988); Ord. 1921 § 1, (2015))

15.06.070 Enforcement.

The director, all employees of the water department, public works department and fire department have the duty and are authorized to enforce the provisions of this chapter and shall have all the powers and authority contained in California Penal Code Section 836.5, including the power to issue written notices to appear.

In addition to the foregoing, the city attorney, code compliance officer and their designees are authorized to enforce the provisions of this chapter through the mechanisms provided in Title 1 of this code. (Ord. 1101 § 1, (1977); Ord. 1365 § 1, (1988); Ord. 1921 § 1, (2015))

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ORDINANCE NO. 1994

AN ORDINANCE OF THE CITY OF BURLINGAME AMENDING CHAPTER 15.06 OF THE BURLINGAME MUNICIPAL CODE TO ESTABLISH LEGAL AUTHORITY TO IMPLEMENT THE CITY'S WATER SHORTAGE CONTINGENCY PLAN; AND ADDING CHAPTER 15.07 TO THE BURLINGAME MUNICIPAL CODE TO PROHIBIT WASTEFUL WATER USE PRACTICES

WHEREAS, the City adopted provisions governing water shortage emergencies in 1988; and

WHEREAS, the 1983 California Urban Water Management Planning Act and California Water Code states that every urban water supplier shall prepare and adopt a water shortage contingency plan as part of its urban water management plan; and

WHEREAS, the water shortage contingency plan must describe the legal authorities that empower the urban water supplier to implement and enforce its shortage response actions contained within the plan.

WHEREAS, the California Water Code section 10631(e)(1)(B)(i) requires urban water suppliers to implement a water waste prevention ordinance; and

WHEREAS, on April 7, 2017, Governor Brown signed Executive Order B-40-17 which terminated the Drought State of Emergency and maintained conservation as a California way of life; and

WHEREAS, our changing climate conditions require the City to adopt and adhere to changes to use water more wisely and to prepare for more frequent and persistent periods of limited water supply; and

WHEREAS, increasing long-term water conservation and improving water use efficiency in our community are critical to ensure resiliency to climate change.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF BURLINGAME DOES ORDAIN AS FOLLOWS:

Section 1. The recitals set forth above are true and correct, and are hereby incorporated herein by this reference as if fully set forth in their entirety.

Section 2. The City Council hereby finds that the proposed Ordinance is in the public interest.

Section 3. The proposed Ordinance is not a project within the meaning of section 15378 of the CEQA Guidelines because it has no potential for resulting in physical change in the environment, either directly or ultimately. In the event that this Ordinance is found to be a project under CEQA, it is subject to the CEQA exemption contained in CEQA Guidelines section 15061(b)(3) because it can be seen with certainty to have no possibility of a significant effect on the environment.

Section 4. Section 15.06.020 of the Burlingame Municipal Code is amended as follows. Additions are reflected by underlined text and deletions with ~~strike out text~~.

(j) "Water shortage contingency plan" or "WSCP" means a contingency plan including voluntary and mandatory actions adopted by the City that incorporates the provisions detailed in the California Water Code Section 10632.

Section 5. Section 15.06.040 of the Burlingame Municipal Code is amended, as noted below.

(m) Additional water use practices as described in the water shortage contingency plan.

Section 6. Section 15.07, Wasteful Water Use Restrictions, of the Burlingame Municipal Code is added as follows. Additions are reflected by underlined text and deletions with ~~strike out text~~.

15.07.010 Purpose.
The permanent water use restrictions in this section are designed to preserve water as an essential resource in keeping with the Governor of California's Executive Order B-40-17, which directed that water conservation become a "California Way of Life."

15.07.020 Definitions.
For the purposes of this chapter, the following terms, phrases, words, and their derivations shall have the meaning given in this chapter:

(a) "Customer" means any person using water supplied by the City of Burlingame.

(b) "Director" means the Director of Public Works of the City.

(c) "Potable water" means water sold by the City of Burlingame intended for human consumption.

(d) "Recirculated water" means water that is circulated in a system that recirculates water through an internal circulation device.

(e) "Recycled water," "reclaimed water," or "treated sewage effluent water" means treated or recycled wastewater of a quality suitable for non-potable uses such as landscape irrigation and not intended for human consumption.

(f) "Runoff" means water that is not absorbed by the surface to which it is applied and flows from the area.

(g) "Special water feature" means objects that are artificially supplied with water, such as ponds, lakes, waterfalls, and fountains. Special water features do not include recreational water features, such as swimming pools and spas.

(h) "Water shortage contingency plan" or "WSCP" means a contingency plan including voluntary and mandatory actions adopted by the City that incorporates the provisions detailed in the California Water Code Section 10632.

15.07.030 Water use restrictions.
The following uses of potable water are prohibited:

(a) Use of a hose for any purpose without a positive shut-off nozzle.

(b) Use of potable water for cleaning, filling, or operating water features, such as decorative fountains, except where the water is part of a recirculating system.

(c) The application of potable water to irrigate outdoor plants, lawn, grass, landscaping, or turf areas during and within twenty-four (24) hours after measurable rainfall.

(d) The application of potable water to street medians containing ornamental turf.

(e) Use through broken or defective plumbing, sprinkler, watering, or irrigation systems.

(f) Use in new, added, or altered car wash equipment unless a recirculating water system is incorporated.

(g) The prohibition enumerated in subsection (d) of this section does not apply to any water treatment features, such as landscaping and green roofs, to meet the requirements of the municipal regional stormwater National Pollutant Discharge Elimination System.

(h) To promote conservation, hotels and motels shall provide guests with the option of choosing not to have towels and linens laundered daily and display notice of this option in guestrooms.

(i) No water shall be taken or used from any fire hydrant or any unmetered City water system outlet/fitting/fixture unless specifically authorized by permit from the director, except by legally constituted fire protection agencies for fire suppression purposes.

15.07.040 Enforcement.

(a) It is unlawful for any person or entity to violate or to fail to comply with any of the requirements of this chapter. Unless otherwise provided in this chapter or the Burlingame Municipal Code, each such person or entity is guilty of a separate offense for each and every day during any portion of which any violation of any provision of this chapter is continued or permitted to be continued and shall be punished as herein provided.

(b) The penalties for violations of any provisions of this chapter are subject to the fines and penalties set forth in Title 1 of this code.

15.07.050 Water shortage emergency.
Notwithstanding the foregoing relating to conservation of water supplies, in times of a declared water shortage emergency pursuant to Sections 350 et seq. of the California Water Code, certain additional mandatory water conservation practices will be necessary. The water shortage contingency plan shall provide the basis for such additional practices.

Section 7. If any section, subsection, clause or phrase of this Ordinance is for any reason held to be invalid, such decision shall not affect the validity of the remaining portion or sections of the Ordinance. The City Council of the City of Burlingame hereby declares that it would have adopted the Ordinance and each section, subsection, sentence, clause or phrase thereof irrespective of the fact that any one or more sections, subsections, sentences, clauses or phrases be declared unconstitutional.

Section 8. This Ordinance shall go into effect 30 days following its adoption. The City Clerk is directed to publish this ordinance in a manner required by law.

Section 9. Sections 4, 5, and 6 of this Ordinance shall be codified in the Burlingame Municipal Code. Sections 1, 2, 3, 7, 8, and 9 shall not be so codified.

Ann O'Brien Keighran, Mayor

I, Meaghan Hassel-Shearer, City Clerk of the City of Burlingame, certify that the foregoing ordinance was introduced at a public hearing at a regular meeting of the City Council held on the 21st day of June, 2021, and adopted thereafter on the 6th day of July, 2021, by the following vote:

AYES:	Councilmembers: BEACH, COLSON, O'BRIEN KEIGHRAN, ORTIZ
NOES:	Councilmembers: BROWNRIGG
ABSENT:	Councilmembers: NONE

DocuSigned by:

Meaghan Hassel-Shearer

8D484C3D80E7449...

Meaghan Hassel-Shearer, City Clerk

ATTACHMENT 2
SFPUC'S ANNUAL WATER SUPPLY AND DEMAND ASSESSMENT PROCEDURES

SECTION 1 INTRODUCTION

The San Francisco Public Utilities Commission (SFPUC) is pleased to present this Water Shortage Contingency Plan (WSCP or Plan) for the City and County of San Francisco (City).

The City owns and operates the San Francisco Regional Water System (RWS), a public asset that plays a key role in delivering high-quality drinking water to more than 2.7 million residents and businesses in the San Francisco Bay Area. The system collects water from the Tuolumne River in the Sierra Nevada and from protected local watersheds in the East Bay and Peninsula.

The SFPUC operates the RWS to deliver water to 27 wholesale customers in Alameda, Santa Clara, and San Mateo Counties, as well as the Groveland Community Services District (Groveland CSD) in Tuolumne County. The Bay Area Water Supply and Conservation Agency (BAWSCA) represents the interests of 26 of the wholesale customers in Alameda, Santa Clara, and San Mateo Counties (collectively, Wholesale Customers) and coordinates their water conservation programming. The SFPUC also provides retail water service to customers in San Francisco (generally referred to as in-City retail customers) and a small number of customers outside of San Francisco that are located along the RWS transmission system (generally referred to as suburban retail customers). Additionally, some retail customers are supplied with local groundwater and recycled water supplies. The SFPUC also has a robust retail conservation program, as well as an Onsite Water Reuse program to reduce water demands and use water more efficiently.

This WSCP presents the latest information about the SFPUC's annual water supply and demand assessment (WSDA) procedures and describes the SFPUC's water shortage contingency planning. This WSCP coincides with additional planning efforts conducted by the SFPUC, including its urban water management planning.

This introduction section provides background on the SFPUC's response to past water shortage experiences pre-2010 (Section 1.1, described in more detail in Appendix B) as well as the most recent 2012-2016 drought (Section 1.2, described in more detail in Appendix C).

1.1 EXPERIENCE WITH WATER SHORTAGES PRE-2010

Every water system has vulnerabilities in terms of its ability to provide a safe and reliable supply of water. Water shortages can occur in a number of ways. Very localized shortages can occur due to distribution system problems, and system shortages can occur due to major facility failures. Apart from system facility contingencies, potential drought periods may limit the amount of water that is available over a series of years. Drought contingency planning is not necessarily caused by physical facility limitations. Within the past 30 years, San Francisco has experienced both localized shortages due to earthquakes and system-wide shortages due to drought.

The SFPUC's past experiences with water shortages during drought and following major earthquakes have shaped its current water shortage preparedness plans and response policies:

- In 1987-92 San Francisco experienced a serious drought. During 6-year drought the SFPUC adopted various levels of action in response to the main Hetch Hetchy source of water available to the SFPUC being taxed to the point of running out of water.

- Following the October 17, 1989 Loma Prieta earthquake, the SFPUC worked with the Mayor's Office of Emergency Response to reconnect water service to retail customers impacted by the earthquake. Most of the homes that lost water service were reconnected within 72 hours.

- In April 2007, below normal precipitation and snow pack caused the SFPUC to initiate a 10% voluntary reduction in water use in the service area. The call for a voluntary reduction continued through 2009.

The 1987-92 drought illustrated the deficit between the SFPUC's supplies and its customers' demands. Other than the 1976-77 drought, drought sequences in the past did not seriously affect the ability of the SFPUC to maintain full deliveries to its customers. As the SFPUC progressed into the 1987-92 drought and reservoir storage continued to decline, it became evident that full deliveries could not be sustained without the risk of running out of water before the drought ended. This circumstance became a reality in early 1991 when the Hetch Hetchy Reservoir became so depleted (less than 25,000 AF of storage in a reservoir with over 360,000 AF of capacity) that minimum instream flow releases and anticipated demands required the SFPUC to initiate programs to achieve a 45% reduction in system-wide water deliveries to balance water supplies with deliveries. Fortunately, unexpected runoff in March 1991 provided relief from the severity of that instance of water shortage; however, the drought was far from over.

Appendix B provides a more detailed summary of San Francisco's 1987-92 drought experience and the actions taken at the time.

1.2 EXPERIENCE WITH THE 2012-2016 DROUGHT

From 2012-2016, California experienced a severe drought which included the driest four consecutive water years based on statewide precipitation (2012-2015) and the lowest April 1 statewide snowpack water equivalent (5 percent in 2015). The unprecedented dry weather conditions prompted then-Governor Jerry Brown to declare a drought State of Emergency in January 2014, which remained in effect for most of California until 2017. The SFPUC took the following actions in response to the drought:

- **Voluntary call for water use reduction:** Spurred by the declaration of a State of Emergency in January 2014, the SFPUC requested that all customers of the RWS voluntarily reduce water use by at least 10 percent. Soon after, the San Francisco Mayor's Office issued a formal executive directive requiring all City departments to develop individual water conservation plans and take immediate steps to achieve a mandatory 10 percent reduction in water consumption. Ultimately, no water shortage emergency was declared, and no subsequent mandatory system-wide demand reductions and shortage allocations were imposed because customers exceeded the 10 percent voluntary system-wide reduction in conjunction with the Statewide mandatory reductions assigned by the State Water Resources Control Board (SWRCB) (see below). The SFPUC lifted the call for a voluntary 10 percent reduction in April 2017.
- **Statewide mandatory reductions:** In July 2014, new emergency conservation regulations issued by the SWRCB prompted the SFPUC to implement outdoor water waste restrictions and require a mandatory 10 percent reduction in outdoor water use. Additional emergency conservation regulations issued by the SWRCB in the spring of 2015 established more Statewide water use restrictions, a mandatory Statewide water reduction of 25 percent compared to 2013 water use, and conservation standards for individual urban water suppliers to meet the Statewide 25 percent reduction. These emergency conservation regulations were the first of their kind, indicative of the State's desire for swift and substantial action to cope with the drought. The State's these regulations assigned the SFPUC retail service area a conservation standard of 8 percent in recognition of its low residential per capita water use. In the SFPUC wholesale service area, conservation standards assigned to the Wholesale Customers ranged from 8 percent to 36 percent. The conservation standards took effect in June 2015 and remained in effect through April 2017.
- **Mandatory reduction of outdoor water use:** In addition to the State mandates, the SFPUC imposed a mandatory 10% reduction on outdoor irrigation along with water use allocations and excess use charges for all retail irrigation customers starting in August 2014. Following the additional SWRCB regulations in the spring of 2015, the SFPUC increased the mandatory reduction on retail outdoor irrigation from 10 percent to 25 percent starting in July 2015. The SFPUC lifted the mandatory reduction on outdoor irrigation in July 2016.

Appendix C provides a more detailed overview of San Francisco's response to the 2012-2016 drought.

SECTION 2 ANNUAL WATER SUPPLY AND DEMAND ASSESSMENT PROCEDURES

Each year the SFPUC evaluates the amount of total water storage expected to occur throughout the RWS and compares it to expected demands. This annual Water Supply and Demand Assessment (WSDA) is described in the subsections below, which are organized by the sequential steps the SFPUC takes to conduct the assessment each year and reference the relevant California Water Code requirements for a WSDA.[1]

The SFPUC's annual WSDA is a robust planning system that considers a range of input factors unique to the SFPUC's water supplies and system configuration while also providing the flexibility to consider new factors. Traditional surface water supplies from the SFPUC's up country, East Bay, and Peninsula reservoirs are the backbone of the water supply, but the SFPUC extends and protects those supplies in many additional ways by: (1) partnering with the community to help save water through robust conservation programs; (2) minimizing the need for additional water to serve new developments through an onsite water reuse program; (3) recycling wastewater resources to deliver water for large non-potable uses; (4) utilizing local groundwater supplies to supplement surface water supplies; (5) investigating new, alternative water supply options such as purified water and desalination; and (6) investing in innovations that allow for creative solutions to meet diverse needs. These efforts help the SFPUC conserve water and diversify supplies to reduce likelihood of a water shortage condition.

2.1 DEMAND ASSESSMENT [WATER CODE SECTION 10632(A)(2)(B)(I)]

To calculate unconstrained customer demand for the purpose of an annual WSDA, the SFPUC collects information on both the retail and wholesale system demands. Retail customer demand is estimated based on the best available information to date, and typically includes the previous year's demands as well as consideration of current demand use patterns or other conditions impacting demands, such as weather and growth. Each year, in February, the SFPUC receives from BAWSCA a report of estimated Wholesale Customer demand for the upcoming year. Estimates of projected demands are provided to BAWSCA by each Wholesale Customer. Relatively small demands from the two additional wholesale customers not part of the WSA are estimated based on the best available information to date, and typically includes the previous year's demands as well as consideration of current demand use patterns or other conditions impacting demands, such as weather and growth.

2.2 SUPPLY ASSESSMENT [WATER CODE SECTIONS 10632(A)(2)(B)(II) AND 10632(A)(2)(B)(V)]

The RWS collects water from the Tuolumne River watershed in the Sierra Nevada and from local reservoirs in the Alameda and Peninsula watersheds. The RWS draws an average of 85 percent of its supply from the Tuolumne River watershed. This water feeds into an aqueduct system delivering water 167 miles by gravity to Bay Area reservoirs and customers. The remaining RWS supply is drawn from local surface waters in the Alameda and Peninsula watersheds. The split between these resources varies from year to year depending on the water year hydrology and operational circumstances.

To project and evaluate water supply conditions, the SFPUC uses measurements of precipitation and snowpack in the watersheds above Hetch Hetchy, Cherry, and Eleanor Reservoirs. Snowpack conditions are evaluated regularly by the Cooperative Snow Survey (conducted by the SFPUC in partnership with state and federal agencies) beginning in late January of each year. The SFPUC also estimates snowpack conditions using information from airborne snow observatory (ASO) and other sources. The SFPUC maintains a hydrologic model of the watersheds that uses this information to

[1] California Water Code section 10632(a)(1) requires "*the analysis of water supply reliability conducted pursuant to Section 10635.*" Additional information about the SFPUC's water supply reliability analysis can be found in Chapter 7 of the SFPUC's 2020 UWMP.

project expected runoff for the coming year. This process also includes a statistical analysis of additional expected precipitation. In addition to projected runoff, the determination of projected available water supply also takes into account stored water throughout the RWS, water acquired by the SFPUC from non-SFPUC sources, inactive storage, reservoir losses, and allowances for carryover storage.

Additionally, the SFPUC accounts for groundwater provided by the San Francisco Groundwater Supply Project for the in-City retail system and recycled water provided for irrigation at Harding Park, Fleming and Sharp Park Golf Courses.

The RWS relies on precipitation and snowmelt captured and stored in its reservoirs. During droughts, water supply deliveries can exceed inflows, such that water stored in previous years is relied upon to meet demands. Because of the importance of carry-over storage, the SFPUC constantly monitors and evaluates water supply conditions in the RWS. Look-ahead forecasts are updated as a year's hydrology and operations change. Generally, in early winter of any year, SFPUC staff can begin providing a forecast of water supply conditions for the upcoming year based on known and anticipated winter and spring precipitation and snowpack. The predictive power of this forecast improves greatly through the spring. The annual precipitation, snowmelt, and carry-over storage together constitute the SFPUC's reservoir storage condition. Using data for each of these factors, the SFPUC can determine whether the reservoir system will be capable of serving full deliveries to its customers. Section 2.3 describes the system modeling SFPUC conducts.

Table 2-1 shows the availability of RWS supplies for retail customers and Wholesale Customers in normal years. Table 2-2 shows the current and projected RWS supply needs to meet retail and wholesale demands based on information and projections presented in the SFPUC's 2020 UWMP.

The SFPUC sells water to 26 of its 28 wholesale customers under the terms of the 25-year contract known as the Water Supply Agreement between the City and County of San Francisco and Wholesale Customers in Alameda County, San Mateo County, and Santa Clara County (WSA) and associated individual water sales contracts with each Wholesale Customer. The WSA carries forward the SFPUC's "Supply Assurance" of 184 million gallons per day (mgd) to the Wholesale Customers. The SFPUC has agreed to deliver water to the Wholesale Customers up to the amount of the Supply Assurance, and this agreement is perpetual and survives the expiration of the WSA. The Supply Assurance is, however, subject to reduction due to water shortage, drought, scheduled RWS maintenance activities, and emergencies. As part of the Phased Water System Improvement Plan (WSIP) in 2008, the SFPUC established a temporary 265 mgd annual average limitation on water deliveries from RWS watersheds, the "Interim Supply Limitation" (ISL). The SFPUC has allocated the ISL between the retail customers and Wholesale Customers as follows:

- Wholesale supply allocation: 184 mgd
- Retail supply allocation: 81 mgd[2]

[2] Groveland CSD is considered a retail customer of the SFPUC. Thus, RWS supplies to Groveland CSD are accounted for in the retail supply allocation of 81 mgd.

Table 2-1. Regional Water System Supply Availability in Normal Years (mgd)

RWS Supply Allocation	Actual	Projected				
	2020	2025	2030	2035	2040	2045
Retail Customers[a, b]	81	81	81	81	81	81
Wholesale Customers[c, d]	184	184	184	184	184	184
Total RWS Supplies	265	265	265	265	265	265

a Groundwater and recycled water are assumed to be used before RWS supplies to meet retail demand. However, if these alternative supplies are not available, up to 81 mgd of RWS supply could be used in normal years.

b Groveland CSD is reported as a wholesale customer for the purposes of this 2020 UWMP, but it is considered a retail customer of the SFPUC solely for purposes of allocating RWS supplies between retail and Wholesale Customers. Its demands would be met by the retail supply allocation of 81 mgd.

c Projected Wholesale Customer deliveries are limited to 184 mgd, including the demands of the Cities of San Jose and Santa Clara, which are supplied on a temporary and interruptible basis, with their total supply not exceeding 9 mgd assuming supply is available (decision to be made by end of 2028).

d Cordilleras MWC is not a party to the WSA, and it is not included in the wholesale supply allocation of 184 mgd. The demands of Cordilleras MWC are minor (projected to be less than 0.01 mgd) and are anticipated to be met with RWS supplies through 2045.

Table 2-2. Regional Water System Supply Utilized in Normal Years (mgd)

RWS Supply Allocation	Actual	Projected				
	2020	2025	2030	2035	2040	2045
Retail Customers[a, b]	66.5	67.2	67.5	68.6	70.5	73.7
Wholesale Customers[c, d]	132.1	146.0	147.9	151.9	156.3	162.8
Total RWS Supplies	198.6	213.2	215.4	220.5	226.8	236.5

a Groundwater and recycled water are assumed to be used before RWS supplies to meet retail demand. However, if these alternative supplies are not available, up to 81 mgd of RWS supply could be used in normal years.

b Groveland CSD is reported as a wholesale customer for the purposes of this 2020 UWMP, but it is considered a retail customer of the SFPUC solely for purposes of allocating RWS supplies between retail and Wholesale Customers. Its demands would be met by the retail supply allocation of 81 mgd.

c Projected Wholesale Customer deliveries are limited to 184 mgd, including the demands of the Cities of San Jose and Santa Clara, which are supplied on a temporary and interruptible basis, with their total supply not exceeding 9 mgd assuming supply is available (decision to be made by end of 2028).

d Cordilleras MWC is not a party to the WSA, and it is not included in the wholesale supply allocation of 184 mgd. The demands of Cordilleras MWC are minor (projected to be less than 0.01 mgd) and are anticipated to be met with RWS supplies through 2045.

2.3 INFRASTRUCTURE CONSIDERATIONS [WATER CODE SECTION 10632(A)(2)(B)(III)]

On an ongoing basis, the SFPUC's Hetch Hetchy Water and Power, Water Supply and Treatment Division, and Hydrology and Water Systems group conduct analyses of the RWS that incorporate planned facility outages and multiple levels of projected system demands to evaluate and plan for potential water delivery constraints. These groups meet quarterly to share plans and coordinate how facility outages, changes in service area demand, wet or dry weather, and other variables shape the operating plans each year. Facility outages due to maintenance or upgrades are coordinated in an adaptive manner to respond to changes as they occur. For new water supplies or new capital projects related to supply distribution, impacts on the system are evaluated extensively prior to initiation of any changes. Results from these modeling efforts are considered in the annual WSDA.

2.4 SYSTEM MODELING [WATER CODE SECTION 10632(A)(2)(B)(IV)]

To proactively plan for conditions that would result in a shortage of water supplies, the SFPUC models conditions using a hypothetical drought that is more severe than what the RWS has historically experienced. This drought sequence is referred to as the “design drought” and serves as the basis for planning and modeling of future scenarios. The design drought consists of an 8.5-year sequence of dry conditions.

In applying its water supply planning methodology, the SFPUC performs an initial model simulation of the system for the design drought sequence and then reviews the ability of the system to deliver water to the service area through the entire design drought sequence. If the projected water supply runs out before the end of the design drought sequence in the initial model run, system-wide water use reduction is added and the scenario is re-run. This process continues iteratively until a model simulation of the system is achieved in which the water supply in storage at the end of the design drought sequence is brought to the system “dead pool,” where no additional storage is available for delivery (currently simulated as 96,775 acre-feet). Drawing system storage down to the dead pool without going below it indicates that water supply delivery, including the adjusted amount of water use, is maintained through the design drought sequence.

Estimated reduced water use levels and corresponding storage threshold values can then be used to simulate the operation of the system through the historical record of hydrology, or to evaluate system water supply conditions during an ongoing drought. While the design drought sequence does not occur in the historical hydrology, the reduced water use and storage threshold values that are adjusted to allow a system configuration to maintain water delivery through the design drought sequence can be used to evaluate system performance in the historical record, or as a comparison for real-time system conditions. Through use of this planning method, the SFPUC can simulate a response to declining water supply in storage that is appropriate for the system conditions being evaluated.

The SFPUC plans its water deliveries using indicators for water use reduction that are developed through analysis with the design drought sequence. As a result, the SFPUC system operations are designed to provide sufficient carry-over water in SFPUC reservoirs to continue delivering water, although at reduced levels, during multiple-year droughts.

2.5 DECISION-MAKING PROCESS [WATER CODE SECTION 10632(A)(2)(A)]

Regardless of the expectation of shortage conditions, as part of the normal course of business, the SFPUC provides a water supply condition update to its executive team every two weeks throughout the year. The SFPUC also provides water supply estimates to its Wholesale Customers on a monthly basis beginning February 1. A Wholesale Customer Annual Meeting is held in the latter portion of February at which the SFPUC makes a presentation on current water supply conditions and forecasts. The last snow survey of the season typically occurs within the first week of April, followed by a runoff forecast to determine total system storage expected as of July 1. By the middle of April, the SFPUC sends a formal letter to the Wholesale Customers summarizing the water supply availability for the coming year.

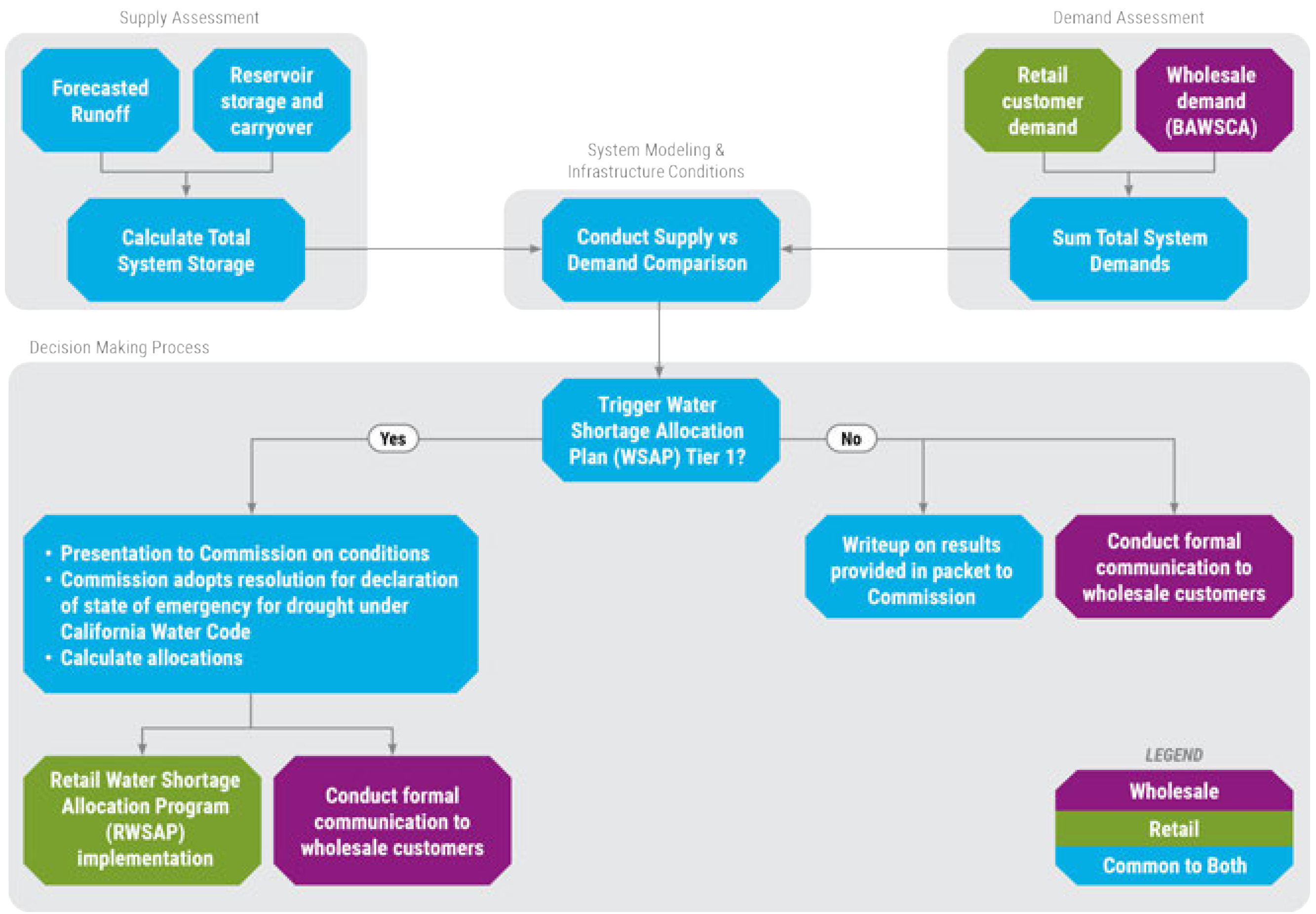
If the RWS appears incapable of meeting system-wide demand due to drought, the SFPUC is expected to declare a water shortage by March 31 of that drought year. The General Manager, or designee, is responsible for declaring such a shortage. A presentation would be made to the Commission as part of the General Manager’s report, showing conditions of precipitation to date, snowpack, and storage levels with more information as necessary depending on the particulars of the supply forecast. Depending on the level of shortage, the Commission may adopt a resolution declaring a water shortage emergency under the California Water Code, or lesser actions such as a call for voluntary conservation efforts.

Prior to the initiation of any water delivery reductions to its retail customers, whether it be initial implementation of delivery reductions or implementing a different water shortage level, the SFPUC will outline a drought response plan to address the following: the water supply situation; proposed water use reduction objectives; alternatives to water use reductions;

methods to calculate water use allocations and adjustments; compliance methodology and enforcement measures; and budget considerations. Details on the expected allocation program are described further in Section 4.1. This drought response plan will be presented at a regularly scheduled SFPUC Commission meeting and advertised in accordance with the requirements of Section 6066 of the California Government Code.

The overall WSDA process is described visually in the flowchart presented in Figure 2-1.

Figure 2-1: Water Supply and Demand Assessment Process



ATTACHMENT 3
DROUGHT RESPONSE TOOL QUANTITATIVE ASSESSMENT

Drought Response Tool

Home | Input Baseline Year Water Use | Baseline Year Water Use Profile | Drought Response Actions | Estimated Water Savings | Drought Response Tracking

1 - Home

City of Burlingame

Enter Agency Information	
Agency Name	City of Burlingame
Total Population Served	31,888
Number of Residential Accounts	7,582
Number of Commercial, Industrial, and Institutional (CII) Accounts	978
Number of Dedicated Irrigation Accounts	203
Baseline Year(s)	2018
Percentage of Residential Indoor Use During Minimum Month (%)	100%
Percentage of CII Indoor Use During Minimum Month (%)	100%
Comments	

Navigation	
USER'S GUIDE	Download and read the guide before using this Tool
1 - HOME	Enter agency information
2 - INPUT BASELINE YEAR WATER USE	Enter Baseline Year production and use
3 - BASELINE YEAR WATER USE PROFILE	Review and confirm entered information
4 - DROUGHT RESPONSE ACTIONS	Select Drought Response Actions and input estimated water savings and implementation rates.
5 - ESTIMATED WATER SAVINGS	Review estimated water production and compare estimated savings to conservation target.
6 - DROUGHT RESPONSE TRACKING	Track production and water savings against the conservation target.

Drought Response Tool

Home | Input Baseline Year Water Use | Baseline Year Water Use Profile | Drought Response Actions | Estimated Water Savings | Drought Response Tracking

1 - Home

City of Burlingame

For questions about this tool or for additional information, contact:

Anona Dutton, P.G., C.Hg.
adutton@ekiconsult.com
(650) 292-9100

eki environment & water

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2 - Input Baseline Year (2018) Water Use

City of Burlingame

Input Baseline Year (2018) Production and Water Use

Units: (mg)

Select the units to input monthly production and use data. Enter the total monthly potable water production for the Baseline Year. Next, enter monthly water use data by sector for the Baseline Year. If you bill on a bi-monthly basis, divide your billing data between the months that the billing cycle includes. If your single-family and multi-family accounts are tracked separately, enter the combined water use for both sectors in the Residential Water Use column. If your commercial, industrial, and institutional (CII) accounts are tracked separately, enter the combined water use for each sector in the CII Water Use column. Your non-revenue water use is calculated by subtracting your monthly residential, CII, and dedicated irrigation water uses from your monthly production. Your monthly residential gallons per capita per day (R-GPCD) is calculated by dividing your monthly residential water use by your population entered in Worksheet 1 - Home.

Date	Total Production (mg)	Residential Water Use (mg)	CII Water Use (mg)	Dedicated Irrigation Water Use (mg)	Non-Revenue Water Use (mg)	Total R-GPCD	Comments
January	84	53	29	3	-1	54	
February	79	49	28	2	0	55	
March	86	49	28	2	7	50	
April	91	47	29	2	13	50	
May	113	50	29	2	32	50	
June	123	60	33	6	24	63	
July	130	69	34	8	19	70	
August	133	77	38	10	8	78	
September	124	79	38	10	-2	82	
October	119	76	35	8	0	77	
November	98	75	35	8	-19	78	
December	86	64	29	4	-12	65	

Drought Response Tool

Home | Input Baseline Year Water Use | Baseline Year Water Use Profile | Drought Response Actions | Estimated Water Savings | Drought Response Tracking

3 - Baseline Year (2018) Water Use Profile

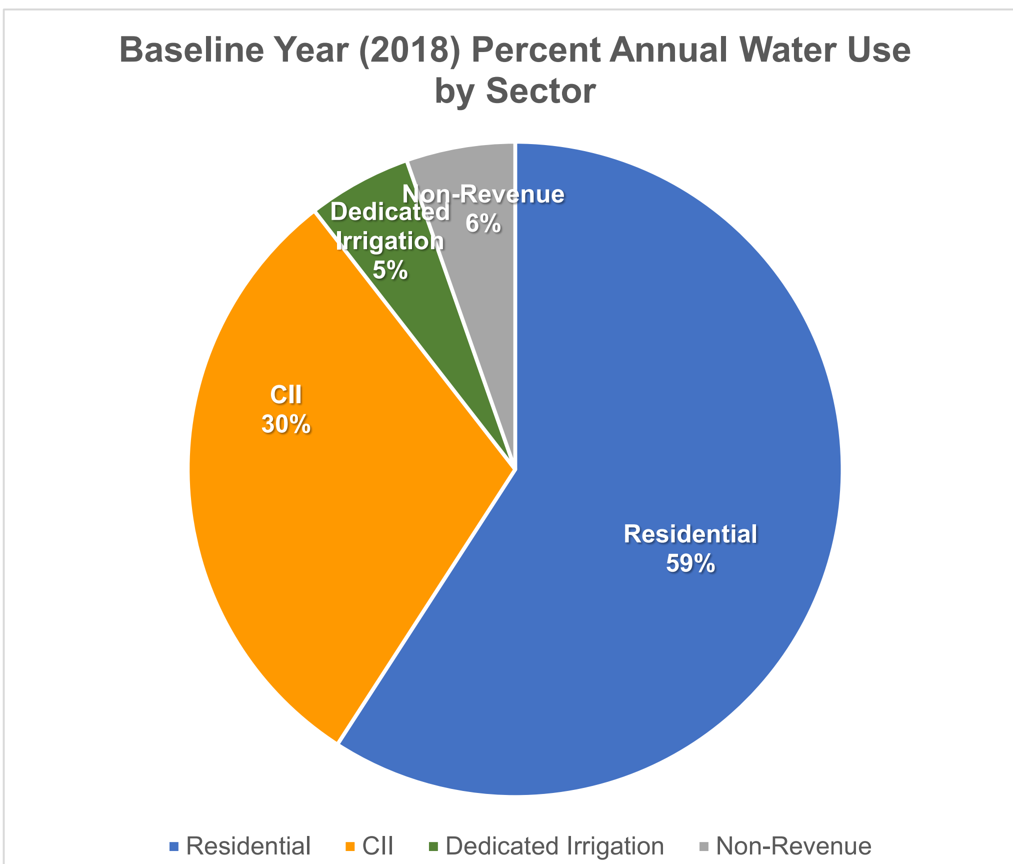
City of Burlingame

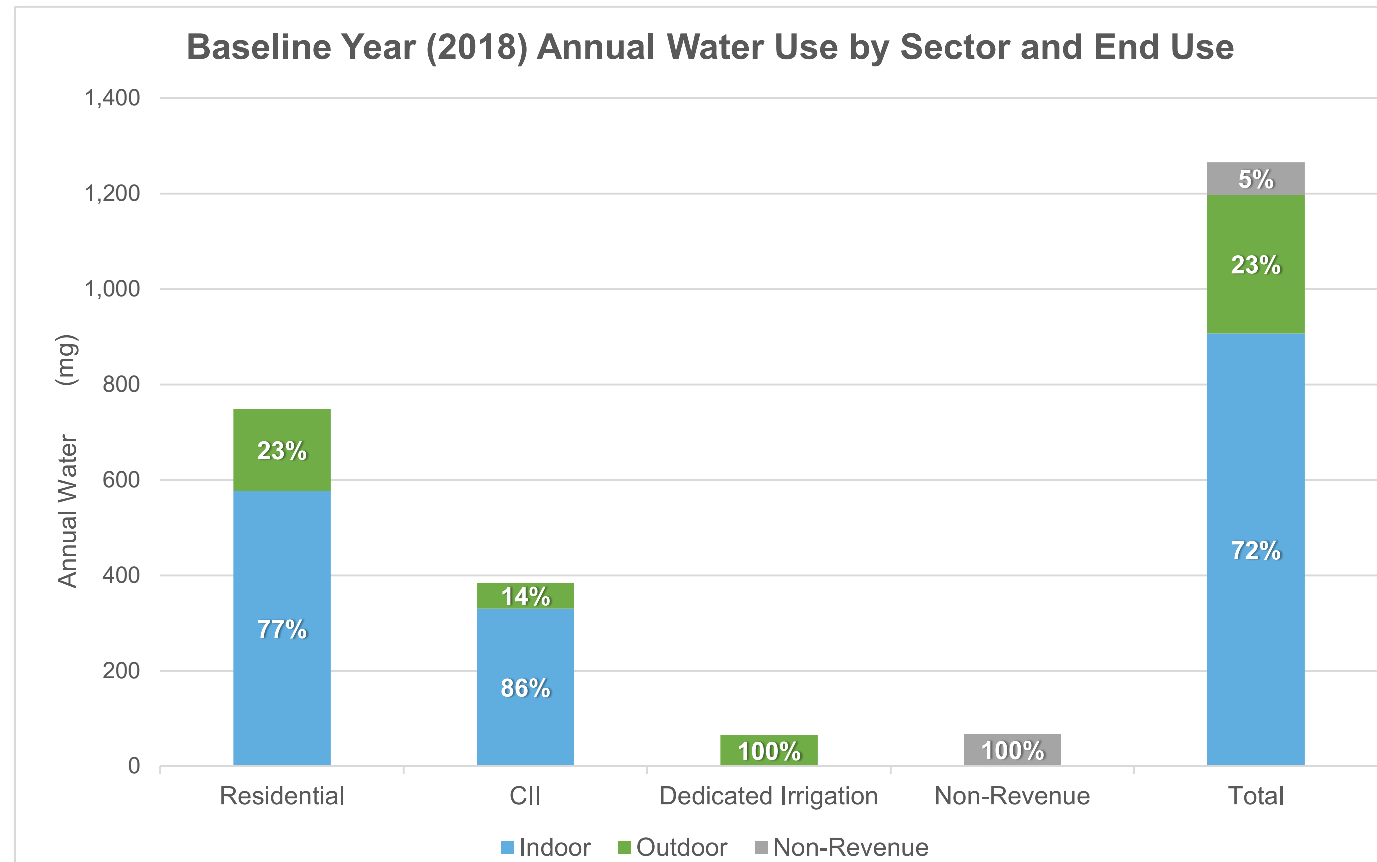
Baseline Year (2018) Annual Water Use Summary

Units: (mg)

A summary of your Baseline Year water use by sector and major end use category is shown below. Select the units in which your production and use data are displayed.

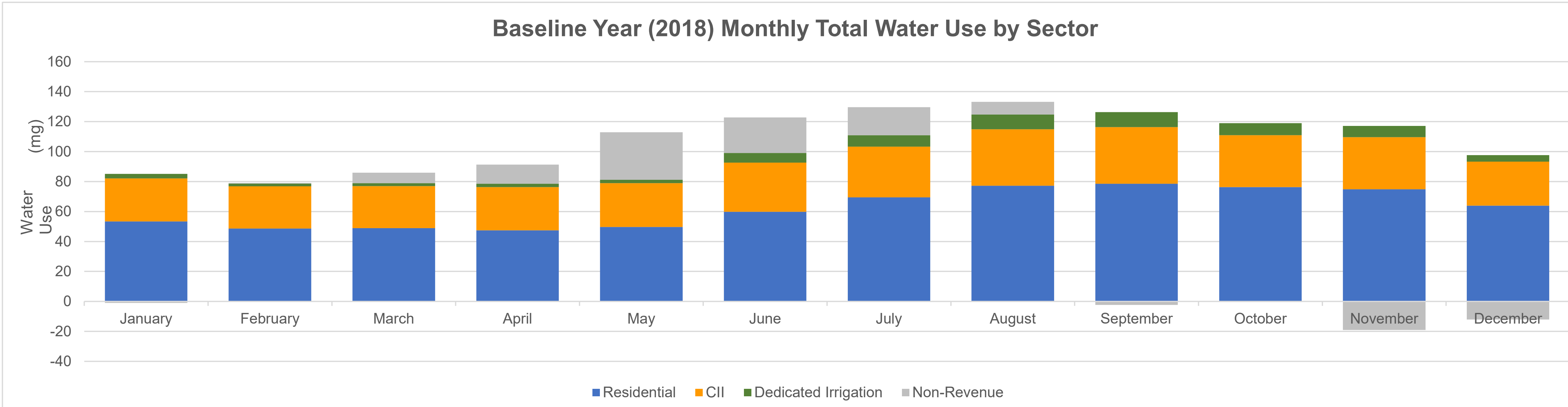
Water Use	Total Production (mg)	Water Use (mg)				Comments
		Residential	CII	Dedicated Irrigation	Non-Revenue	
Total	1,265	748	384	65	68	
Total Indoor	907	577	330	--	--	
Total Outdoor	291	172	54	65	--	
Total Non-Revenue	68	--	--	--	68	
Total Indoor %	72%	77%	86%	0%	--	
Total Outdoor %	23%	23%	14%	100%	--	
Total Non-Revenue %	5%	--	--	--	100%	

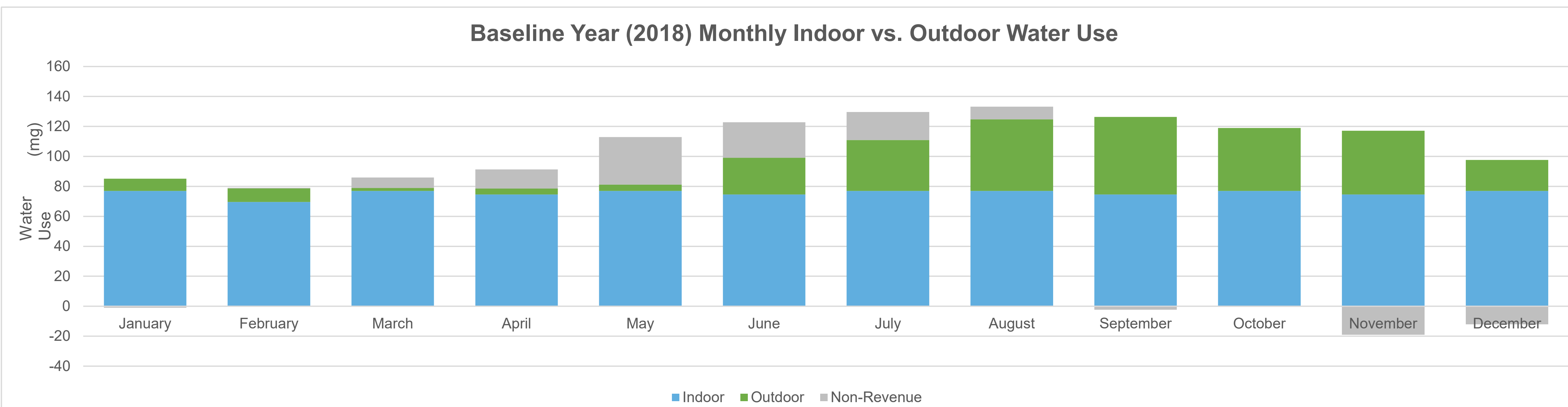




3 - Baseline Year (2018) Water Use Profile

City of Burlingame





4 - Drought Response Actions - Stage 1

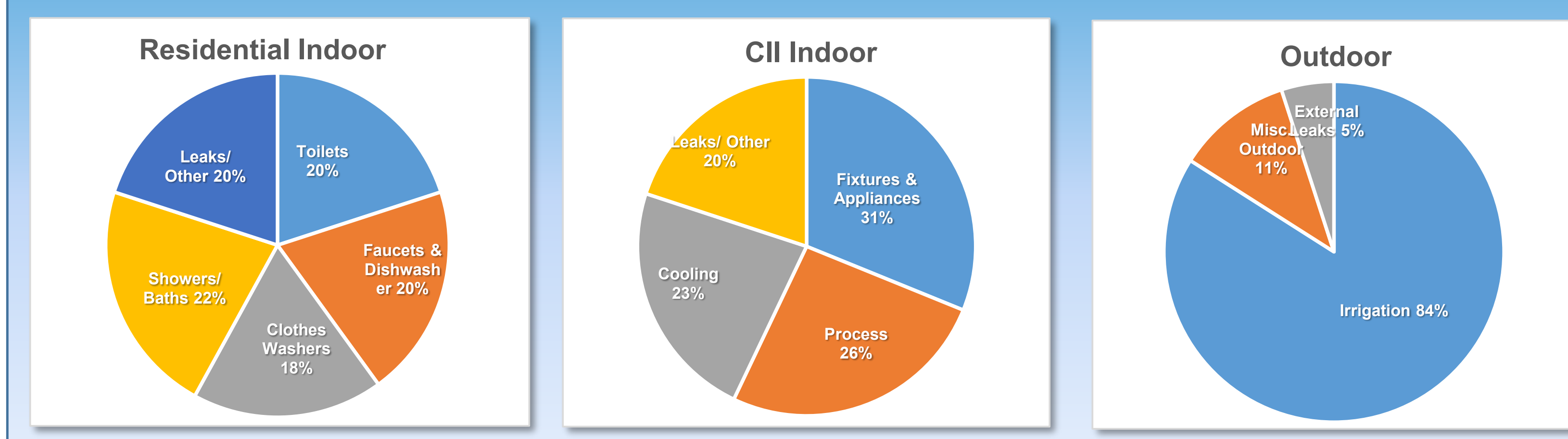
City of Burlingame

Maximum Savings Potential

Use the default values or enter your own criteria for the maximum savings potential. Estimated water savings within each sector will not exceed the maximum savings criteria.

Minimum Residential Indoor GPCD	25	R-GPCD
Maximum Residential Outdoor Savings	100%	of Baseline Residential Outdoor Water Use
Maximum CII Indoor Savings	30%	of Baseline CII Indoor Water Use
Maximum CII Outdoor Savings	100%	of Baseline CII Outdoor Water Use
Maximum Dedicated Irrigation Account Savings	100%	of Baseline Dedicated Irrigation Water Use
Maximum Non-Revenue Water Savings	50%	of Baseline Non-Revenue Water Use
Resulting Total Maximum Annual Savings Potential	**56%**	of Total Baseline Production

Assumed Proportion of Water Use by End Uses and Sector



Drought Response Tool

Home | Input Baseline Year Water Use | Baseline Year Water Use Profile | Drought Response Actions | Estimated Water Savings | Drought Response Tracking

4 - Drought Response Actions - Stage 1

City of Burlingame

Drought Response Actions

Select the Drought Response Actions you would like to include in your estimated savings calculations. For each selected action, use the default end use savings estimates and implementation rates or input your own values. The "End Use Savings" estimates the percent water use reduction that could occur at a particular end use as a result of a specific action. The "Implementation Rate" refers to the estimated percentage of accounts that will implement a specific action. The water savings potential at each end use is capped based on the assumed distribution of end use water demands shown in the pie charts above. A dash (--) indicates that professional judgement was used to establish the default value, or that savings are expected to be accounted for as part of a Public Information Program; additional basis for the default values are included in the User Manual.

Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
▶ **Possible Mandatory Prohibitions**	All Outdoor	☐	14%	70%	--	--
Prohibit Irrigation with Potable Water Outside of Newly Constructed Homes and Buildings that is not Delivered by Drip or Microspray Systems	Irrigation	☐			--	--
Require Shut-Off Nozzles on Hoses for Vehicle Washing	Misc. Outdoor	☑	17%	**90%**	See Appendix D of the DRP	--
Prohibit Use of Potable Water to Wash Sidewalks and Driveways	Misc. Outdoor	☑	17%	**90%**		--
Prohibit the Use of Potable Water for Street Washing	Misc. Outdoor	☐	17%	**90%**		--
Prohibit Irrigation with Potable Water in a Manner that causes Runoff	Irrigation	☑	3%	**90%**	DeOreo et al., 2011	--
Prohibit Irrigation with Potable Water within 48 Hours following Measurable Rainfall	Irrigation	☑			--	--
Prohibit Irrigation of Ornamental Turf with Potable Water on Street Medians	Irrigation	☑			--	--
Prohibit Potable Water Use for Decorative Water Features that do not Recirculate Water	Misc. Outdoor	☑	50%	**90%**	EBMUD, 2008	--
Provide Linen Service Opt Out Options	Fixtures & Appliances	☑	0.5%	**90%**	EBMUD, 2011	--
Prohibit Serving Drinking Water other than upon Request in Eating or Drinking Establishments	Fixtures & Appliances	☑	0.5%	**90%**	EBMUD, 2011	--

4 - Drought Response Actions - Stage 1

City of Burlingame

Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
▶ Agency Drought Actions / Restrictions						
▶ Agency Actions						
Media Campaign, Newspaper Articles, Website	All	☑	0.5%	50%	EBMUD, 2011	--
Promote Water Conservation / Rebate Programs	All	☑	**3%**	50%	--	--
Water Efficiency Workshops, Public Events	All	☑	0.5%	25%	EBMUD, 2011	--
Water Bill Inserts	All	☑	0.5%	100%	EBMUD, 2011	--
Promote / Expand Use of Recycled Water	Irrigation	☐	100%		--	--
Home or Mobile Water Use Reports	All	☑	5%	10%	WaterSmart Software, 2015	--
Decrease Frequency and Length of Line Flushing	Non Revenue Water	☐	25%	50%	See Appendix D of the DRP	Reduced flushing by 50%.
Audit and Reduce System Water Loss	Non Revenue Water	☐	45%	50%	DWR, 2015	Target 50% of leakage.
Implement Drought Rate Structure / Water Budgets	All	☐	5%	100%	CUWCC, 2015	--
Establish Retrofit on Resale Ordinance	All Residential Indoor	☐	21%	6%	SFPUC, 2004	First Tuesday, 2015
Require Net Zero Demand Increase on New Connections	All	☐			--	--
Moratorium on New Connections	All	☐			--	--
Move to Monthly Metering / Billing	All	☐	5%	10%	See Appendix D of the DRP	--
Increase Water Waste Patrols / Enforcement	All	☐			--	--
Establish Drought Hotline	All	☐			--	--
Reduce Distribution System Pressures	Non Revenue Water	☐	4.5%	100%	CUWCC, 2010; DWR, 2015	--
▶ Dedicated Irrigation						
Conduct Irrigation Account Surveys	Irrigation	☐	30%	10%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to 3 Days/Week, 15 Minutes/Day, Between 6PM and 8AM	Irrigation	☐	**6%**	**70%**	UC IPM, 2014	--
Limit Irrigation to 1 Day/Week, 10 Minutes/Day, Between 9PM and 6AM	Irrigation	☐	79%	50%		
Prohibit use of Potable Water for Irrigation	Irrigation	☐	100%	50%		
Require Repair of all Leaks within 24 hours	External Leaks	☑	100%	5%	--	--
Customer Water Budgets						
Establish Water Budget - 25% Reduction	Irrigation	☐	25%	50%	--	--
Establish Water Budget - 50% Reduction	Irrigation	☐	50%	50%	--	--
Establish Water Budget - 75% Reduction	Irrigation	☐	75%	50%	--	--

4 - Drought Response Actions - Stage 1

City of Burlingame

Drought Response Actions						
Action Description	**End Use(s)**	**Implement Program**	**End Use Savings (%)**	**Implementation Rate**	**Source of Default Savings Estimate**	**Source of Default Implementation Rate**
▶ **Agency Drought Actions / Restrictions**						
▶ **Residential**						
Conduct Water Use Surveys Targeting High Water Users	All Residential Uses	☐	10%	10%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to 3 Days/Week, 15 Minutes/Day, Between 6PM and 8AM	Irrigation	☐	**6%**	**70%**	UC IPM, 2014	--
Limit Irrigation to 1 Day/Week, 10 Minutes/Day, Between 9PM and 6AM	Irrigation	☐	79%	50%		
Prohibit use of Potable Water for Irrigation	Irrigation	☐	100%	50%		
Prohibit Vehicle Washing Except with Recycled Water	Misc. Outdoor	☐	50%	50%	EBMUD, 2008	--
Require Repair of all Leaks within 24 hours	Leaks	☑	100%	5%	--	--
Require Pool Covers	Misc. Outdoor	☐	28%	25%	Maddaus & Mayer, 2001	--
Prohibit Filling of Pools	Misc. Outdoor	☐	55%	25%	DeOreo et al., 2011	--
Customer Water Budgets						
Establish Water Budget - 10% Reduction	All Residential Uses	☐	10%	50%	--	--
Establish Water Budget - 20% Reduction	All Residential Uses	☐	20%	50%	--	--
▶ **CII**						
Conduct CII Surveys Targeting High Water Users	All CII uses	☐	10%	10%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to 3 Days/Week, 15 Minutes/Day, Between 6PM and 8AM	Irrigation	☐	**6%**	**70%**	UC IPM, 2014	--
Limit Irrigation to 1 Day/Week, 10 Minutes/Day, Between 9PM and 6AM	Irrigation	☐	79%	50%		
Prohibit Use of Potable Water for Construction and Dust Control	Misc. Outdoor	☐		100%	--	--
Prohibit Single-Pass Cooling Systems	Cooling	☐	80%	1%	Vickers, 2001	--
Require Repair of all Leaks within 24 hours	Leaks	☑	100%	5%	--	--
Prohibit Vehicle Washing Except with Recycled Water	Misc. Outdoor	☐	50%	50%	EBMUD, 2008	--
Require Water-Efficient Pre-Rinse Spray Valves	Fixtures & Appliances	☐	0.8%	50%	EPA, 2015; Pacific Institute, 2003	--
Customer Water Budgets						
Establish Water Budget - 10% Reduction	All CII uses	☐	10%	50%	--	--
Establish Water Budget - 20% Reduction	All CII uses	☐	20%	50%	--	--
Establish Water Budget - 30% Reduction	All CII uses	☐	30%	50%	--	--

4 - Drought Response Actions - Stage 1

City of Burlingame

Drought Response Actions						
Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
▶ Residential Customer Actions to Encourage						
Install Bathroom Faucet Aerators	Faucets and Dishwashers	☐			--	--
Install a Water-Efficient Showerhead	Showers/Baths	☐			--	--
Turn Off Water when Brushing Teeth, Shaving, Washing Dishes, or Cooking	Faucets and Dishwashers	☐			--	--
Fill the Bathtub Halfway	Showers/Baths	☐			--	--
Wash Only Full Loads of Clothes	Clothes Washers	☐			--	--
Install a High-Efficiency Toilet	Toilets	☐			--	--
Take Shorter Showers	Showers/Baths	☐			--	--
Run Dishwasher Only When Full	Faucets and Dishwashers	☐			--	--
Reduce Outdoor Irrigation	Irrigation	☐			--	--
Install Drip-Irrigation	Irrigation	☐			--	--
Use Mulch	Irrigation	☐			--	--
Plant Drought Resistant Trees and Plants	Irrigation	☐			--	--
Use a Broom to Clean Outdoor Areas	Misc. Outdoor	☐			--	--
Flush Less Frequently	Toilets	☐			--	--
Re-Use Shower or Bath Water for Irrigation	Irrigation	☐			--	--
Wash Car at Facility that Recycles the Water	Misc. Outdoor	☐			--	--

5 - Estimated Water Savings - Stage 1

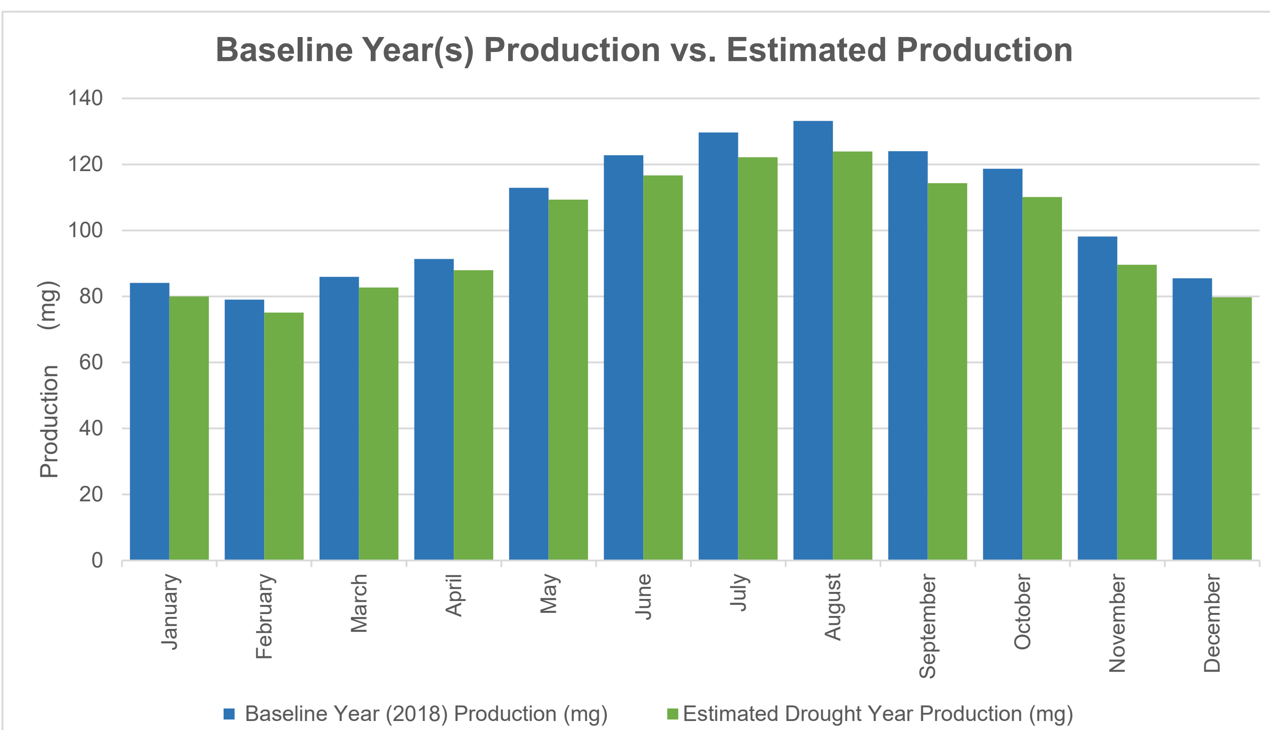
City of Burlingame

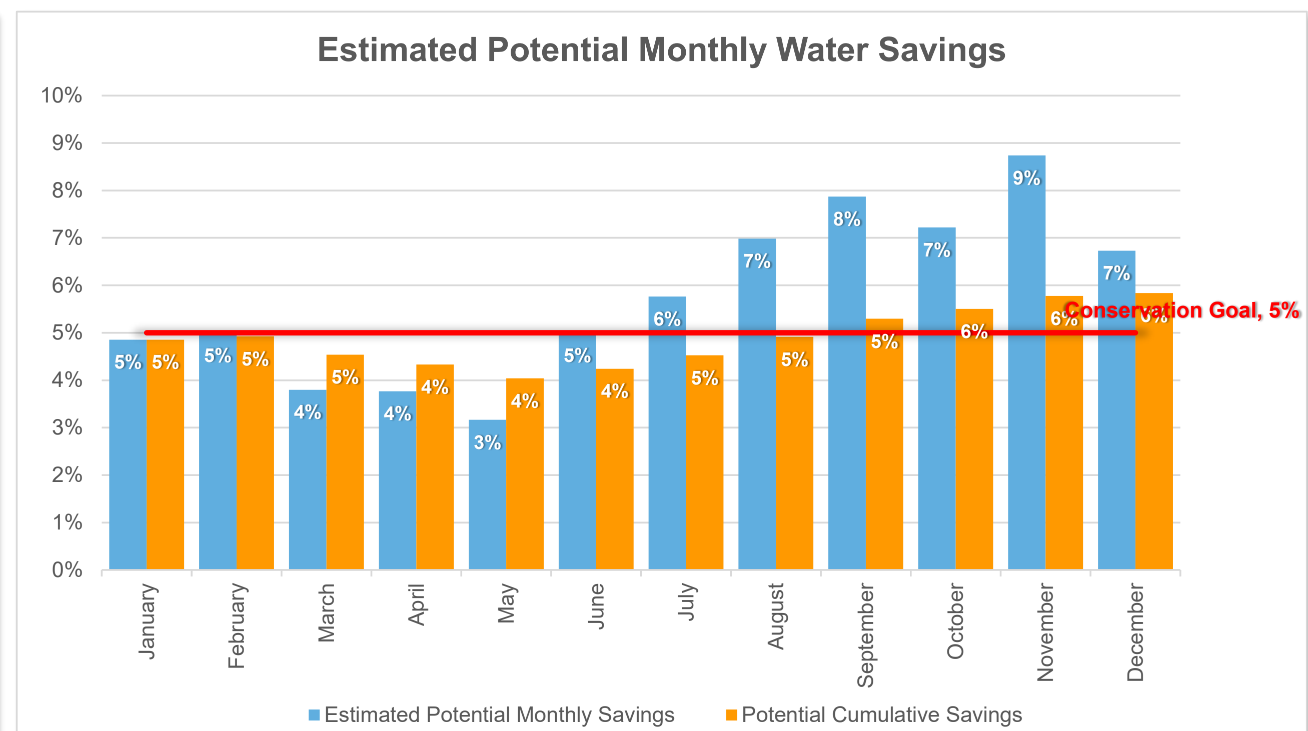
Estimated Monthly Water Use and Savings Summary

Units: (mg)

This provides a summary of the estimated production relative to Baseline Year production and potential water savings, assuming implementation of selected actions at the water savings and implementation rates indicated in the Drought Response Actions worksheet. Select the units that your production data are displayed in.

Month	Baseline Year (2018) Production (mg)	Estimated Drought Year Production (mg)	Estimated Potential Monthly Savings	Potential Cumulative Savings	Conservation Goal	Comments
January	84	80	5%	5%	5%	
February	79	75	5%	5%	5%	
March	86	83	4%	5%	5%	
April	91	88	4%	4%	5%	
May	113	109	3%	4%	5%	
June	123	117	5%	4%	5%	
July	130	122	6%	5%	5%	
August	133	124	7%	5%	5%	
September	124	114	8%	5%	5%	
October	119	110	7%	6%	5%	
November	98	90	9%	6%	5%	
December	86	80	7%	6%	5%	



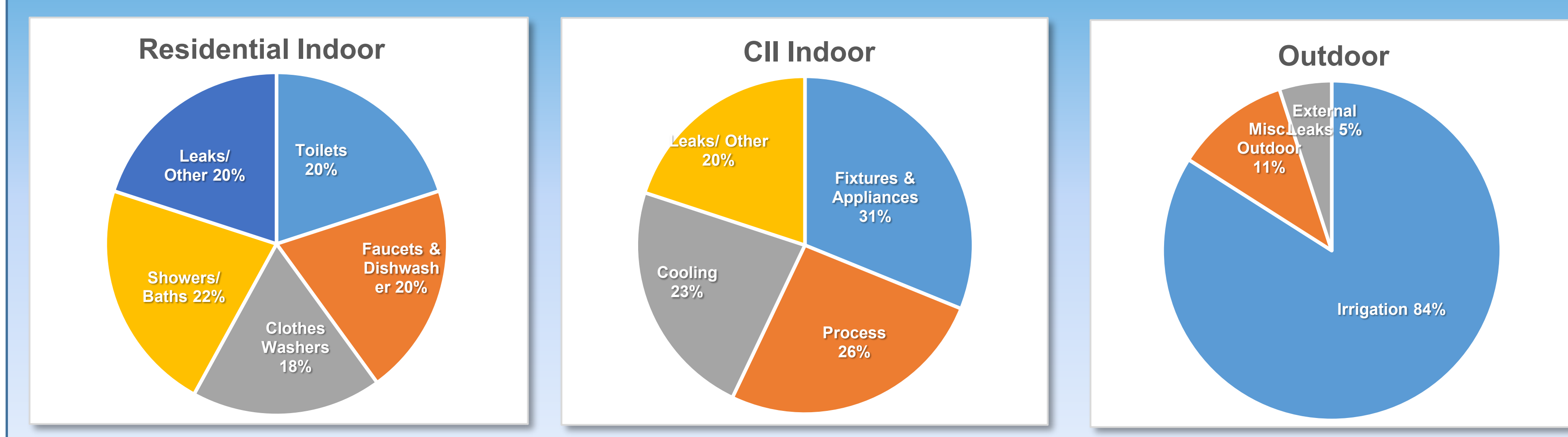


4 - Drought Response Actions - Stage 2

City of Burlingame

Maximum Savings Potential		
Use the default values or enter your own criteria for the maximum savings potential. Estimated water savings within each sector will not exceed the maximum savings criteria.		
Minimum Residential Indoor GPCD	25	R-GPCD
Maximum Residential Outdoor Savings	100%	of Baseline Residential Outdoor Water Use
Maximum CII Indoor Savings	30%	of Baseline CII Indoor Water Use
Maximum CII Outdoor Savings	100%	of Baseline CII Outdoor Water Use
Maximum Dedicated Irrigation Account Savings	100%	of Baseline Dedicated Irrigation Water Use
Maximum Non-Revenue Water Savings	50%	of Baseline Non-Revenue Water Use
Resulting Total Maximum Annual Savings Potential	**56%**	of Total Baseline Production

Assumed Proportion of Water Use by End Uses and Sector



4 - Drought Response Actions - Stage 2

City of Burlingame

Drought Response Actions

Select the Drought Response Actions you would like to include in your estimated savings calculations. For each selected action, use the default end use savings estimates and implementation rates or input your own values. The "End Use Savings" estimates the percent water use reduction that could occur at a particular end use as a result of a specific action. The "Implementation Rate" refers to the estimated percentage of accounts that will implement a specific action. The water savings potential at each end use is capped based on the assumed distribution of end use water demands shown in the pie charts above. A dash (--) indicates that professional judgement was used to establish the default value, or that savings are expected to be accounted for as part of a Public Information Program; additional basis for the default values are included in the User Manual.

Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
▶ **Possible Mandatory Prohibitions**	All Outdoor	☑	14%	**80%**	--	--
Prohibit Irrigation with Potable Water Outside of Newly Constructed Homes and Buildings that is not Delivered by Drip or Microspray Systems	Irrigation	☑			--	--
Require Shut-Off Nozzles on Hoses for Vehicle Washing	Misc. Outdoor	☑	17%	90%	See Appendix D of the DRP	--
Prohibit Use of Potable Water to Wash Sidewalks and Driveways	Misc. Outdoor	☑	17%	90%		--
Prohibit the Use of Potable Water for Street Washing	Misc. Outdoor	☐	17%	90%		--
Prohibit Irrigation with Potable Water in a Manner that causes Runoff	Irrigation	☑	3%	90%	DeOreo et al., 2011	--
Prohibit Irrigation with Potable Water within 48 Hours following Measurable Rainfall	Irrigation	☑			--	--
Prohibit Irrigation of Ornamental Turf with Potable Water on Street Medians	Irrigation	☑			--	--
Prohibit Potable Water Use for Decorative Water Features that do not Recirculate Water	Misc. Outdoor	☑	50%	90%	EBMUD, 2008	--
Provide Linen Service Opt Out Options	Fixtures & Appliances	☑	0.5%	90%	EBMUD, 2011	--
Prohibit Serving Drinking Water other than upon Request in Eating or Drinking Establishments	Fixtures & Appliances	☑	0.5%	90%	EBMUD, 2011	--

4 - Drought Response Actions - Stage 2

City of Burlingame

Drought Response Actions						
Action Description	**End Use(s)**	**Implement Program**	**End Use Savings (%)**	**Implementation Rate**	**Source of Default Savings Estimate**	**Source of Default Implementation Rate**
▶ **Agency Drought Actions / Restrictions**						
▶ **Agency Actions**						
Media Campaign, Newspaper Articles, Website	All	☑	0.5%	**75%**	EBMUD, 2011	--
Promote Water Conservation / Rebate Programs	All	☑	**3%**	50%	--	--
Water Efficiency Workshops, Public Events	All	☑	0.5%	25%	EBMUD, 2011	--
Water Bill Inserts	All	☑	0.5%	100%	EBMUD, 2011	--
Promote / Expand Use of Recycled Water	Irrigation	☐	100%		--	--
Home or Mobile Water Use Reports	All	☑	5%	**20%**	WaterSmart Software, 2015	--
Decrease Frequency and Length of Line Flushing	Non Revenue Water	☑	25%	50%	See Appendix D of the DRP	Reduced flushing by 50%.
Audit and Reduce System Water Loss	Non Revenue Water	☐	45%	50%	DWR, 2015	Target 50% of leakage.
Implement Drought Rate Structure / Water Budgets	All	☐	5%	100%	CUWCC, 2015	--
Establish Retrofit on Resale Ordinance	All Residential Indoor	☐	21%	6%	SFPUC, 2004	First Tuesday, 2015
Require Net Zero Demand Increase on New Connections	All	☐			--	--
Moratorium on New Connections	All	☐			--	--
Move to Monthly Metering / Billing	All	☐	5%	10%	See Appendix D of the DRP	--
Increase Water Waste Patrols / Enforcement	All	☐			--	--
Establish Drought Hotline	All	☐			--	--
Reduce Distribution System Pressures	Non Revenue Water	☐	4.5%	100%	CUWCC, 2010; DWR, 2015	--
▶ **Dedicated Irrigation**						
Conduct Irrigation Account Surveys	Irrigation	☐	30%	10%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to 2 Days/Week, 15 Minutes/Day, Between 6PM and 8AM	Irrigation	☑	38%	**85%**	UC IPM, 2014	--
Limit Irrigation to 1 Day/Week, 10 Minutes/Day, Between 9PM and 6AM	Irrigation	☐	79%	50%		
Prohibit use of Potable Water for Irrigation	Irrigation	☐	100%	50%		
Require Repair of all Leaks within 24 hours	External Leaks	☑	100%	5%	--	--
Customer Water Budgets						
Establish Water Budget - 25% Reduction	Irrigation	☐	25%	50%	--	--
Establish Water Budget - 50% Reduction	Irrigation	☐	50%	50%	--	--
Establish Water Budget - 75% Reduction	Irrigation	☐	75%	50%	--	--

4 - Drought Response Actions - Stage 2

City of Burlingame

Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
▶ Agency Drought Actions / Restrictions						
▶ Residential						
Conduct Water Use Surveys Targeting High Water Users	All Residential Uses	☐	10%	10%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to 2 Days/Week, 15 Minutes/Day, Between 6PM and 8AM	Irrigation	☑	38%	**85%**	UC IPM, 2014	--
Limit Irrigation to 1 Day/Week, 10 Minutes/Day, Between 9PM and 6AM	Irrigation	☐	79%	50%		
Prohibit use of Potable Water for Irrigation	Irrigation	☐	100%	50%		
Prohibit Vehicle Washing Except with Recycled Water	Misc. Outdoor	☑	50%	50%	EBMUD, 2008	--
Require Repair of all Leaks within 24 hours	Leaks	☑	100%	5%	--	--
Require Pool Covers	Misc. Outdoor	☐	28%	25%	Maddaus & Mayer, 2001	--
Prohibit Filling of Pools	Misc. Outdoor	☐	55%	25%	DeOreo et al., 2011	--
Customer Water Budgets						
Establish Water Budget - 10% Reduction	All Residential Uses	☐	10%	50%	--	--
Establish Water Budget - 20% Reduction	All Residential Uses	☐	20%	50%	--	--
▶ CII						
Conduct CII Surveys Targeting High Water Users	All CII uses	☐	10%	10%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to 2 Days/Week, 15 Minutes/Day, Between 6PM and 8AM	Irrigation	☑	38%	**85%**	UC IPM, 2014	--
Limit Irrigation to 1 Day/Week, 10 Minutes/Day, Between 9PM and 6AM	Irrigation	☐	79%	50%		
Prohibit Use of Potable Water for Construction and Dust Control	Misc. Outdoor	☐		100%	--	--
Prohibit Single-Pass Cooling Systems	Cooling	☑	80%	1%	Vickers, 2001	--
Require Repair of all Leaks within 24 hours	Leaks	☑	100%	5%	--	--
Prohibit Vehicle Washing Except with Recycled Water	Misc. Outdoor	☑	50%	50%	EBMUD, 2008	--
Require Water-Efficient Pre-Rinse Spray Valves	Fixtures & Appliances	☐	0.8%	50%	EPA, 2015; Pacific Institute, 2003	--
Customer Water Budgets						
Establish Water Budget - 10% Reduction	All CII uses	☐	10%	50%	--	--
Establish Water Budget - 20% Reduction	All CII uses	☐	20%	50%	--	--
Establish Water Budget - 30% Reduction	All CII uses	☐	30%	50%	--	--

4 - Drought Response Actions - Stage 2

City of Burlingame

Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
▶ Residential Customer Actions to Encourage						
Install Bathroom Faucet Aerators	Faucets and Dishwashers	☐			--	--
Install a Water-Efficient Showerhead	Showers/Baths	☐			--	--
Turn Off Water when Brushing Teeth, Shaving, Washing Dishes, or Cooking	Faucets and Dishwashers	☐			--	--
Fill the Bathtub Halfway	Showers/Baths	☐			--	--
Wash Only Full Loads of Clothes	Clothes Washers	☐			--	--
Install a High-Efficiency Toilet	Toilets	☐			--	--
Take Shorter Showers	Showers/Baths	☐			--	--
Run Dishwasher Only When Full	Faucets and Dishwashers	☐			--	--
Reduce Outdoor Irrigation	Irrigation	☐			--	--
Install Drip-Irrigation	Irrigation	☐			--	--
Use Mulch	Irrigation	☐			--	--
Plant Drought Resistant Trees and Plants	Irrigation	☐			--	--
Use a Broom to Clean Outdoor Areas	Misc. Outdoor	☐			--	--
Flush Less Frequently	Toilets	☐			--	--
Re-Use Shower or Bath Water for Irrigation	Irrigation	☐			--	--
Wash Car at Facility that Recycles the Water	Misc. Outdoor	☐			--	--

5 - Estimated Water Savings - Stage 2

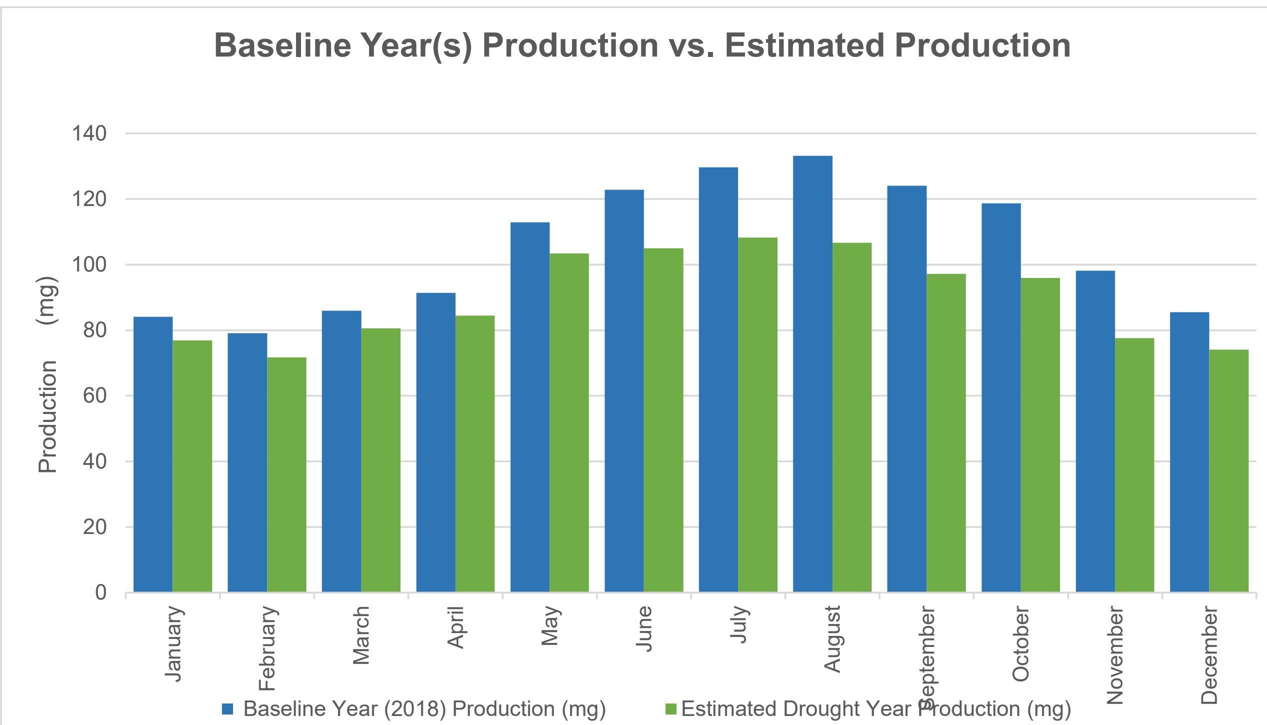
City of Burlingame

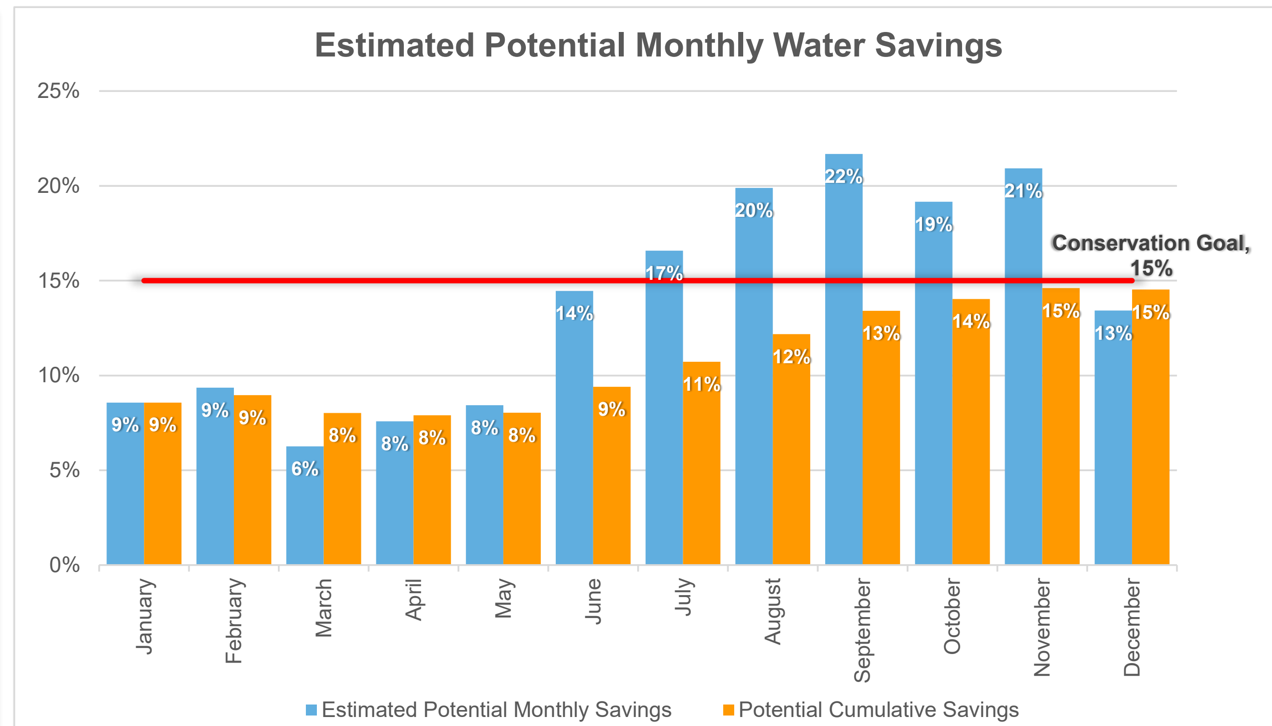
Estimated Monthly Water Use and Savings Summary

Units: (mg)

This provides a summary of the estimated production relative to Baseline Year production and potential water savings, assuming implementation of selected actions at the water savings and implementation rates indicated in the Drought Response Actions worksheet. Select the units that your production data are displayed in.

Month	Baseline Year (2018) Production (mg)	Estimated Drought Year Production (mg)	Estimated Potential Monthly Savings	Potential Cumulative Savings	Conservation Goal	Comments
January	84	77	9%	9%	15%	
February	79	72	9%	9%	15%	
March	86	81	6%	8%	15%	
April	91	84	8%	8%	15%	
May	113	103	8%	8%	15%	
June	123	105	14%	9%	15%	
July	130	108	17%	11%	15%	
August	133	107	20%	12%	15%	
September	124	97	22%	13%	15%	
October	119	96	19%	14%	15%	
November	98	78	21%	15%	15%	
December	86	74	13%	15%	15%	



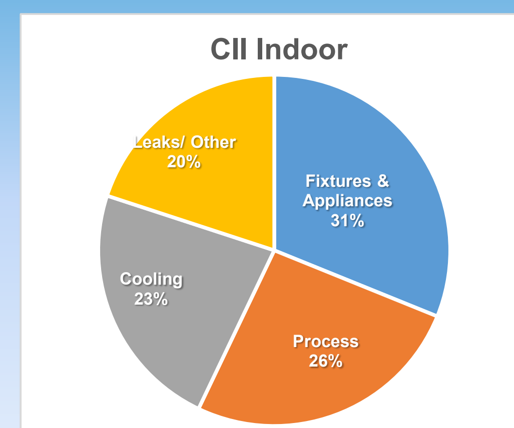


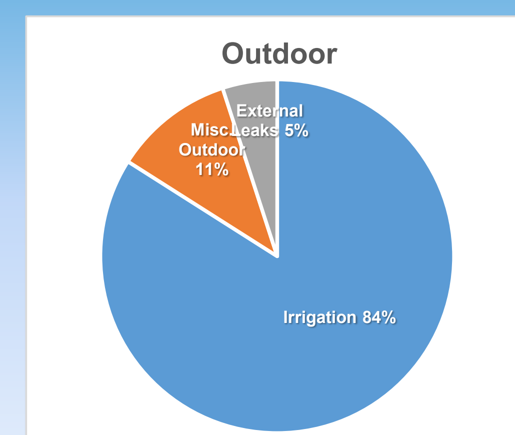
4 - Drought Response Actions - Stage 3

City of Burlingame

Maximum Savings Potential		
Use the default values or enter your own criteria for the maximum savings potential. Estimated water savings within each sector will not exceed the maximum savings criteria.		
Minimum Residential Indoor GPCD	25	R-GPCD
Maximum Residential Outdoor Savings	100%	of Baseline Residential Outdoor Water Use
Maximum CII Indoor Savings	30%	of Baseline CII Indoor Water Use
Maximum CII Outdoor Savings	100%	of Baseline CII Outdoor Water Use
Maximum Dedicated Irrigation Account Savings	100%	of Baseline Dedicated Irrigation Water Use
Maximum Non-Revenue Water Savings	50%	of Baseline Non-Revenue Water Use
Resulting Total Maximum Annual Savings Potential	**56%**	of Total Baseline Production

Assumed Proportion of Water Use by End Uses and Sector





4 - Drought Response Actions - Stage 3

City of Burlingame

Drought Response Actions

Select the Drought Response Actions you would like to include in your estimated savings calculations. For each selected action, use the default end use savings estimates and implementation rates or input your own values. The "End Use Savings" estimates the percent water use reduction that could occur at a particular end use as a result of a specific action. The "Implementation Rate" refers to the estimated percentage of accounts that will implement a specific action. The water savings potential at each end use is capped based on the assumed distribution of end use water demands shown in the pie charts above. A dash (--) indicates that professional judgement was used to establish the default value, or that savings are expected to be accounted for as part of a Public Information Program; additional basis for the default values are included in the User Manual.

Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
▶ **Possible Mandatory Prohibitions**	All Outdoor	☑	14%	**80%**	--	--
Prohibit Irrigation with Potable Water Outside of Newly Constructed Homes and Buildings that is not Delivered by Drip or Microspray Systems	Irrigation	☐			--	--
Require Shut-Off Nozzles on Hoses for Vehicle Washing	Misc. Outdoor	☑	17%	90%	See Appendix D of the DRP	--
Prohibit Use of Potable Water to Wash Sidewalks and Driveways	Misc. Outdoor	☑	17%	90%		--
Prohibit the Use of Potable Water for Street Washing	Misc. Outdoor	☐	17%	90%		--
Prohibit Irrigation with Potable Water in a Manner that causes Runoff	Irrigation	☑	3%	90%	DeOreo et al., 2011	--
Prohibit Irrigation with Potable Water within 48 Hours following Measurable Rainfall	Irrigation	☑			--	--
Prohibit Irrigation of Ornamental Turf with Potable Water on Street Medians	Irrigation	☑			--	--
Prohibit Potable Water Use for Decorative Water Features that do not Recirculate Water	Misc. Outdoor	☑	50%	90%	EBMUD, 2008	--
Provide Linen Service Opt Out Options	Fixtures & Appliances	☑	0.5%	90%	EBMUD, 2011	--
Prohibit Serving Drinking Water other than upon Request in Eating or Drinking Establishments	Fixtures & Appliances	☑	0.5%	90%	EBMUD, 2011	--

4 - Drought Response Actions - Stage 3

City of Burlingame

Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
Agency Drought Actions / Restrictions						
Agency Actions						
Media Campaign, Newspaper Articles, Website	All	☑	0.5%	**75%**	EBMUD, 2011	--
Promote Water Conservation / Rebate Programs	All	☑	**3%**	**65%**	--	--
Water Efficiency Workshops, Public Events	All	☑	0.5%	**30%**	EBMUD, 2011	--
Water Bill Inserts	All	☑	0.5%	100%	EBMUD, 2011	--
Promote / Expand Use of Recycled Water	Irrigation	☐	100%		--	--
Home or Mobile Water Use Reports	All	☑	5%	**20%**	WaterSmart Software, 2015	--
Decrease Frequency and Length of Line Flushing	Non Revenue Water	☑	25%	**100%**	See Appendix D of the DRP	Suspend flushing.
Audit and Reduce System Water Loss	Non Revenue Water	☐	45%	50%	DWR, 2015	Target 50% of leakage.
Implement Drought Rate Structure / Water Budgets	All	☑	5%	100%	CUWCC, 2015	--
Establish Retrofit on Resale Ordinance	All Residential Indoor	☐	21%	6%	SFPUC, 2004	First Tuesday, 2015
Require Net Zero Demand Increase on New Connections	All	☐			--	--
Moratorium on New Connections	All	☐			--	--
Move to Monthly Metering / Billing	All	☑	5%	10%	See Appendix D of the DRP	--
Increase Water Waste Patrols / Enforcement	All	☑			--	--
Establish Drought Hotline	All	☐			--	--
Reduce Distribution System Pressures	Non Revenue Water	☐	4.5%	100%	CUWCC, 2010; DWR, 2015	--
Dedicated Irrigation						
Conduct Irrigation Account Surveys	Irrigation	☑	30%	10%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to 2 Days/Week, 15 Minutes/Day, Between 9PM and 6AM	Irrigation	☐	38%	75%	UC IPM, 2014	--
Limit Irrigation to 1 Day/Week, 10 Minutes/Day, Between 6PM and 8AM	Irrigation	☑	79%	**75%**		
Prohibit use of Potable Water for Irrigation	Irrigation	☐	100%	50%		
Require Repair of all Leaks within 24 hours	External Leaks	☑	100%	5%	--	--
Customer Water Budgets						
Establish Water Budget - 25% Reduction	Irrigation	☐	25%	50%	--	--
Establish Water Budget - 50% Reduction	Irrigation	☐	50%	50%	--	--
Establish Water Budget - 75% Reduction	Irrigation	☐	75%	50%	--	--

4 - Drought Response Actions - Stage 3

City of Burlingame

Drought Response Actions						
Action Description	**End Use(s)**	**Implement Program**	**End Use Savings (%)**	**Implementation Rate**	**Source of Default Savings Estimate**	**Source of Default Implementation Rate**
▶ Agency Drought Actions / Restrictions						
▶ Residential						
Conduct Water Use Surveys Targeting High Water Users	All Residential Uses	☑	10%	10%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to 2 Days/Week, 15 Minutes/Day, Between 9PM and 6AM	Irrigation	☐	38%	75%	UC IPM, 2014	--
Limit Irrigation to 1 Day/Week, 10 Minutes/Day, Between 6PM and 8AM	Irrigation	☑	79%	**75%**		
Prohibit use of Potable Water for Irrigation	Irrigation	☐	100%	50%		
Prohibit Vehicle Washing Except with Recycled Water	Misc. Outdoor	☑	50%	50%	EBMUD, 2008	--
Require Repair of all Leaks within 24 hours	Leaks	☑	100%	5%	--	--
Require Pool Covers	Misc. Outdoor	☐	28%	25%	Maddaus & Mayer, 2001	--
Prohibit Filling of Pools	Misc. Outdoor	☐	55%	25%	DeOreo et al., 2011	--
Customer Water Budgets						
Establish Water Budget - 10% Reduction	All Residential Uses	☐	10%	50%	--	--
Establish Water Budget - 20% Reduction	All Residential Uses	☐	20%	50%	--	--
▶ CII						
Conduct CII Surveys Targeting High Water Users	All CII uses	☑	10%	10%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to 2 Days/Week, 15 Minutes/Day, Between 9PM and 6AM	Irrigation	☐	38%	75%	UC IPM, 2014	--
Limit Irrigation to 1 Day/Week, 10 Minutes/Day, Between 6PM and 8AM	Irrigation	☑	79%	**75%**		
Prohibit Use of Potable Water for Construction and Dust Control	Misc. Outdoor	☐		100%	--	--
Prohibit Single-Pass Cooling Systems	Cooling	☑	80%	1%	Vickers, 2001	--
Require Repair of all Leaks within 24 hours	Leaks	☑	100%	5%	--	--
Prohibit Vehicle Washing Except with Recycled Water	Misc. Outdoor	☑	50%	50%	EBMUD, 2008	--
Require Water-Efficient Pre-Rinse Spray Valves	Fixtures & Appliances	☐	0.8%	50%	EPA, 2015; Pacific Institute, 2003	--
Customer Water Budgets						
Establish Water Budget - 10% Reduction	All CII uses	☐	10%	50%	--	--
Establish Water Budget - 20% Reduction	All CII uses	☐	20%	50%	--	--
Establish Water Budget - 30% Reduction	All CII uses	☐	30%	50%	--	--

4 - Drought Response Actions - Stage 3

City of Burlingame

Drought Response Actions						
Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
▶ Residential Customer Actions to Encourage						
Install Bathroom Faucet Aerators	Faucets and Dishwashers	☐			--	--
Install a Water-Efficient Showerhead	Showers/Baths	☐			--	--
Turn Off Water when Brushing Teeth, Shaving, Washing Dishes, or Cooking	Faucets and Dishwashers	☐			--	--
Fill the Bathtub Halfway	Showers/Baths	☐			--	--
Wash Only Full Loads of Clothes	Clothes Washers	☐			--	--
Install a High-Efficiency Toilet	Toilets	☐			--	--
Take Shorter Showers	Showers/Baths	☐			--	--
Run Dishwasher Only When Full	Faucets and Dishwashers	☐			--	--
Reduce Outdoor Irrigation	Irrigation	☐			--	--
Install Drip-Irrigation	Irrigation	☐			--	--
Use Mulch	Irrigation	☐			--	--
Plant Drought Resistant Trees and Plants	Irrigation	☐			--	--
Use a Broom to Clean Outdoor Areas	Misc. Outdoor	☐			--	--
Flush Less Frequently	Toilets	☐			--	--
Re-Use Shower or Bath Water for Irrigation	Irrigation	☐			--	--
Wash Car at Facility that Recycles the Water	Misc. Outdoor	☐			--	--

5 - Estimated Water Savings - Stage 3

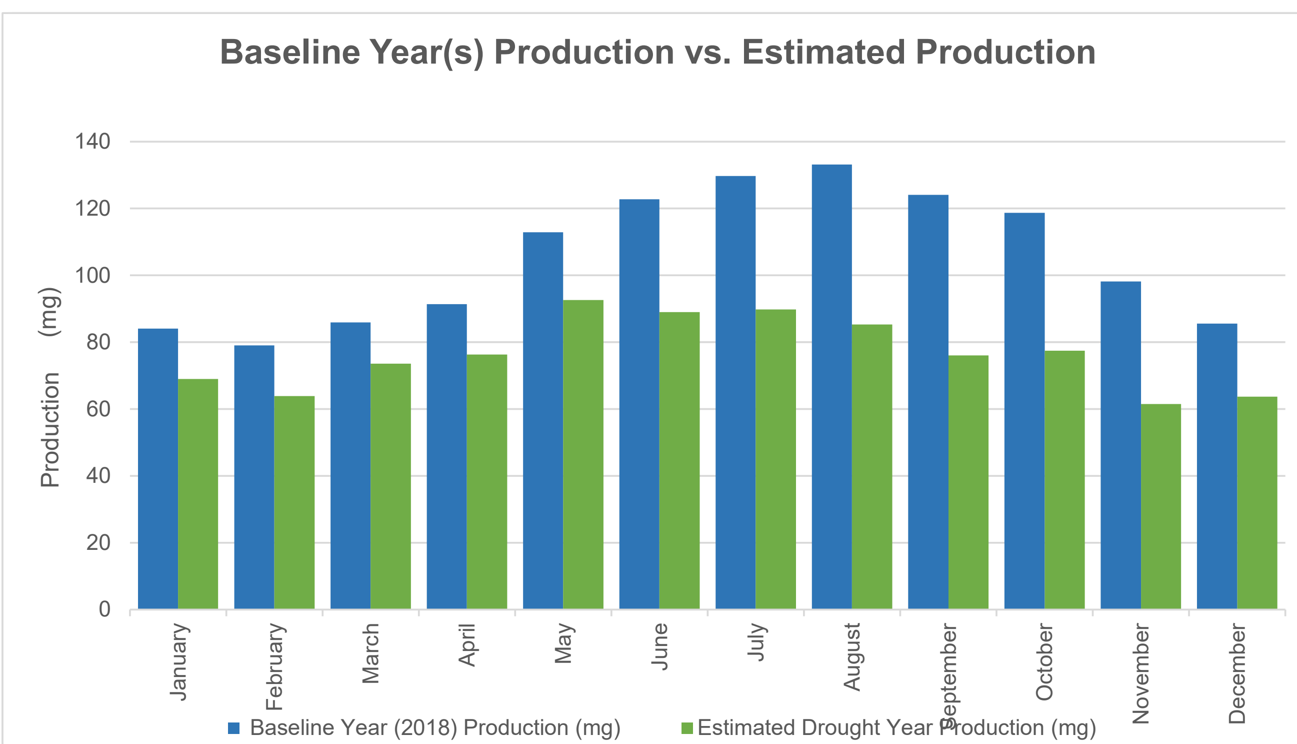
City of Burlingame

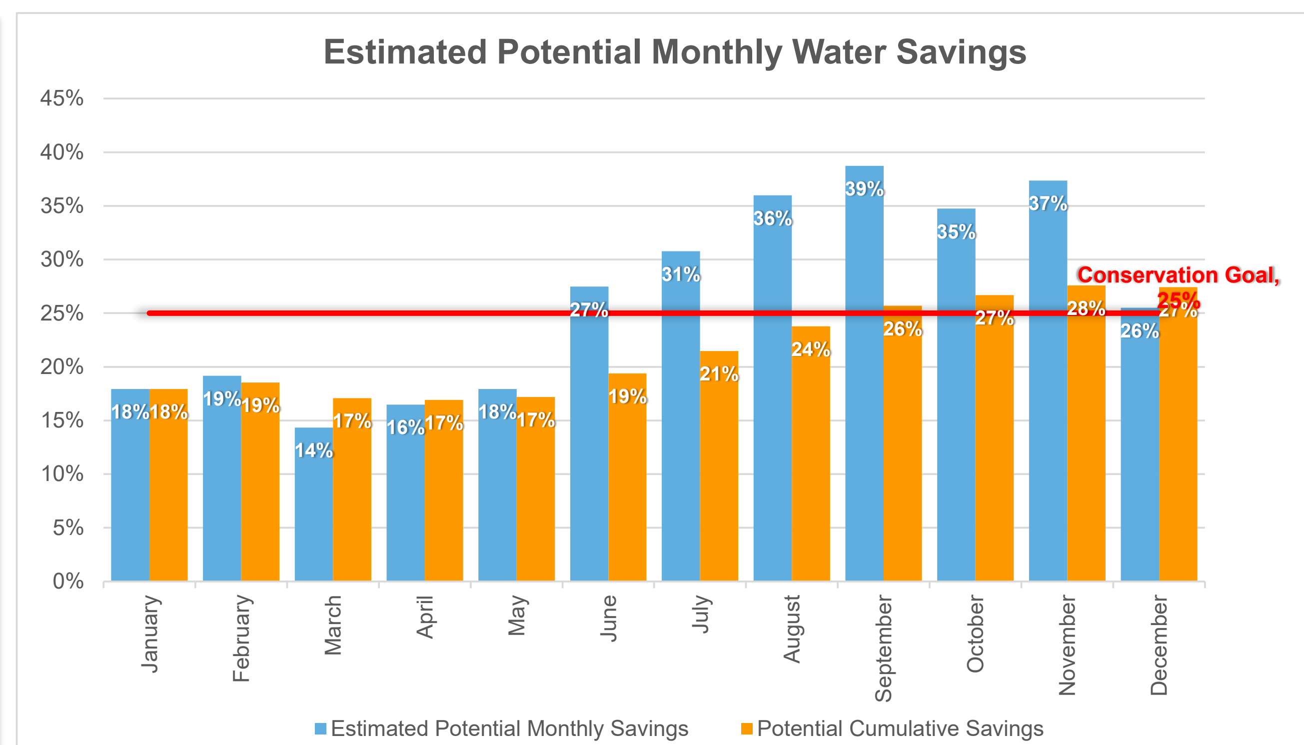
Estimated Monthly Water Use and Savings Summary

Units: (mg)

This provides a summary of the estimated production relative to Baseline Year production and potential water savings, assuming implementation of selected actions at the water savings and implementation rates indicated in the Drought Response Actions worksheet. Select the units that your production data are displayed in.

Month	Baseline Year (2018) Production (mg)	Estimated Drought Year Production (mg)	Estimated Potential Monthly Savings	Potential Cumulative Savings	Conservation Goal	Comments
January	84	69	18%	18%	25%	
February	79	64	19%	19%	25%	
March	86	74	14%	17%	25%	
April	91	76	16%	17%	25%	
May	113	93	18%	17%	25%	
June	123	89	27%	19%	25%	
July	130	90	31%	21%	25%	
August	133	85	36%	24%	25%	
September	124	76	39%	26%	25%	
October	119	77	35%	27%	25%	
November	98	61	37%	28%	25%	
December	86	64	26%	27%	25%	





5 - Estimated Water Savings - Stage 3

City of Burlingame

4 - Drought Response Actions - Stage 4

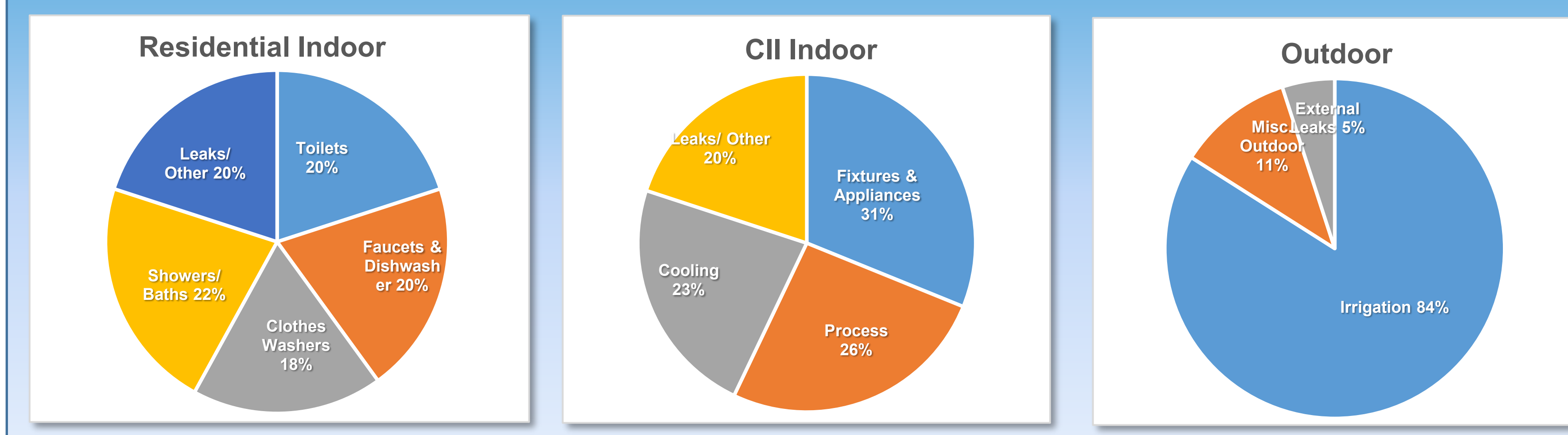
City of Burlingame

Maximum Savings Potential

Use the default values or enter your own criteria for the maximum savings potential. Estimated water savings within each sector will not exceed the maximum savings criteria.

Minimum Residential Indoor GPCD	25	R-GPCD
Maximum Residential Outdoor Savings	100%	of Baseline Residential Outdoor Water Use
Maximum CII Indoor Savings	30%	of Baseline CII Indoor Water Use
Maximum CII Outdoor Savings	100%	of Baseline CII Outdoor Water Use
Maximum Dedicated Irrigation Account Savings	100%	of Baseline Dedicated Irrigation Water Use
Maximum Non-Revenue Water Savings	50%	of Baseline Non-Revenue Water Use
Resulting Total Maximum Annual Savings Potential	**56%**	of Total Baseline Production

Assumed Proportion of Water Use by End Uses and Sector



4 - Drought Response Actions - Stage 4

City of Burlingame

Drought Response Actions

Select the Drought Response Actions you would like to include in your estimated savings calculations. For each selected action, use the default end use savings estimates and implementation rates or input your own values. The "End Use Savings" estimates the percent water use reduction that could occur at a particular end use as a result of a specific action. The "Implementation Rate" refers to the estimated percentage of accounts that will implement a specific action. The water savings potential at each end use is capped based on the assumed distribution of end use water demands shown in the pie charts above. A dash (--) indicates that professional judgement was used to establish the default value, or that savings are expected to be accounted for as part of a Public Information Program; additional basis for the default values are included in the User Manual.

Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
▶ **Possible Mandatory Prohibitions**	All Outdoor	☑	14%	**85%**	--	--
Prohibit Irrigation with Potable Water Outside of Newly Constructed Homes and Buildings that is not Delivered by Drip or Microspray Systems	Irrigation	☐			--	--
Require Shut-Off Nozzles on Hoses for Vehicle Washing	Misc. Outdoor	☑	17%	50%	See Appendix D of the DRP	--
Prohibit Use of Potable Water to Wash Sidewalks and Driveways	Misc. Outdoor	☑	17%	50%		--
Prohibit the Use of Potable Water for Street Washing	Misc. Outdoor	☐	17%	50%		--
Prohibit Irrigation with Potable Water in a Manner that causes Runoff	Irrigation	☑	3%	50%	DeOreo et al., 2011	--
Prohibit Irrigation with Potable Water within 48 Hours following Measurable Rainfall	Irrigation	☑			--	--
Prohibit Irrigation of Ornamental Turf with Potable Water on Street Medians	Irrigation	☑			--	--
Prohibit Potable Water Use for Decorative Water Features that do not Recirculate Water	Misc. Outdoor	☑	50%	50%	EBMUD, 2008	--
Provide Linen Service Opt Out Options	Fixtures & Appliances	☑	0.5%	50%	EBMUD, 2011	--
Prohibit Serving Drinking Water other than upon Request in Eating or Drinking Establishments	Fixtures & Appliances	☑	0.5%	50%	EBMUD, 2011	--

4 - Drought Response Actions - Stage 4

City of Burlingame

Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
▶ Agency Drought Actions / Restrictions						
▶ Agency Actions						
Media Campaign, Newspaper Articles, Website	All	☑	0.5%	**80%**	EBMUD, 2011	--
Promote Water Conservation / Rebate Programs	All	☑	**3%**	**65%**	--	--
Water Efficiency Workshops, Public Events	All	☑	0.5%	**30%**	EBMUD, 2011	--
Water Bill Inserts	All	☑	0.5%	100%	EBMUD, 2011	--
Promote / Expand Use of Recycled Water	Irrigation	☐	100%		--	--
Home or Mobile Water Use Reports	All	☑	5%	**20%**	WaterSmart Software, 2015	--
Decrease Frequency and Length of Line Flushing	Non Revenue Water	☑	25%	**100%**	See Appendix D of the DRP	Suspend flushing.
Audit and Reduce System Water Loss	Non Revenue Water	☑	45%	50%	DWR, 2015	Target 50% of leakage.
Implement Drought Rate Structure / Water Budgets	All	☑	5%	100%	CUWCC, 2015	--
Establish Retrofit on Resale Ordinance	All Residential Indoor	☐	21%	6%	SFPUC, 2004	First Tuesday, 2015
Require Net Zero Demand Increase on New Connections	All	☐			--	--
Moratorium on New Connections	All	☐			--	--
Move to Monthly Metering / Billing	All	☑	5%	10%	See Appendix D of the DRP	--
Increase Water Waste Patrols / Enforcement	All	☑			--	--
Establish Drought Hotline	All	☐			--	--
Reduce Distribution System Pressures	Non Revenue Water	☑	4.5%	100%	CUWCC, 2010; DWR, 2015	--
▶ Dedicated Irrigation						
Conduct Irrigation Account Surveys	Irrigation	☑	30%	10%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to 2 Days/Week, 15 Minutes/Day, Between 9PM and 6AM	Irrigation	☐	38%	75%	UC IPM, 2014	--
Limit Irrigation to 1 Day/Week, 10 Minutes/Day, Between 6PM and 8AM	Irrigation	☑	79%	**80%**		
Prohibit use of Potable Water for Irrigation	Irrigation	☐	100%	50%		
Require Repair of all Leaks within 24 hours	External Leaks	☑	100%	5%	--	--
Customer Water Budgets						
Establish Water Budget - 25% Reduction	Irrigation	☐	25%	75%	--	--
Establish Water Budget - 50% Reduction	Irrigation	☑	**30%**	**80%**	--	--
Establish Water Budget - 75% Reduction	Irrigation	☐	75%	50%	--	--

4 - Drought Response Actions - Stage 4

City of Burlingame

Drought Response Actions						
Action Description	**End Use(s)**	**Implement Program**	**End Use Savings (%)**	**Implementation Rate**	**Source of Default Savings Estimate**	**Source of Default Implementation Rate**
▶ **Agency Drought Actions / Restrictions**						
▶ **Residential**						
Conduct Water Use Surveys Targeting High Water Users	All Residential Uses	☑	10%	10%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to 2 Days/Week, 15 Minutes/Day, Between 9PM and 6AM	Irrigation	☐	38%	75%		
Limit Irrigation to 1 Day/Week, 10 Minutes/Day, Between 6PM and 8AM	Irrigation	☑	79%	**80%**	UC IPM, 2014	--
Prohibit use of Potable Water for Irrigation	Irrigation	☐	100%	50%		
Prohibit Vehicle Washing Except with Recycled Water	Misc. Outdoor	☑	50%	50%	EBMUD, 2008	--
Require Repair of all Leaks within 24 hours	Leaks	☑	100%	5%	--	--
Require Pool Covers	Misc. Outdoor	☐	28%	25%	Maddaus & Mayer, 2001	--
Prohibit Filling of Pools	Misc. Outdoor	☐	55%	25%	DeOreo et al., 2011	--
Customer Water Budgets						
Establish Water Budget - 10% Reduction	All Residential Uses	☑	10%	**80%**	--	--
Establish Water Budget - 20% Reduction	All Residential Uses	☐	20%	50%	--	--
▶ **CII**						
Conduct CII Surveys Targeting High Water Users	All CII uses	☑	10%	10%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to 2 Days/Week, 15 Minutes/Day, Between 9PM and 6AM	Irrigation	☑	38%	**75%**	UC IPM, 2014	--
Limit Irrigation to 1 Day/Week, 10 Minutes/Day, Between 6PM and 8AM	Irrigation	☐	79%	80%		
Prohibit Use of Potable Water for Construction and Dust Control	Misc. Outdoor	☐		100%	--	--
Prohibit Single-Pass Cooling Systems	Cooling	☑	80%	1%	Vickers, 2001	--
Require Repair of all Leaks within 24 hours	Leaks	☑	100%	5%	--	--
Prohibit Vehicle Washing Except with Recycled Water	Misc. Outdoor	☑	50%	50%	EBMUD, 2008	--
Require Water-Efficient Pre-Rinse Spray Valves	Fixtures & Appliances	☐	0.8%	50%	EPA, 2015; Pacific Institute, 2003	--
Customer Water Budgets						
Establish Water Budget - 10% Reduction	All CII uses	☑	10%	**80%**	--	--
Establish Water Budget - 20% Reduction	All CII uses	☐	20%	50%	--	--
Establish Water Budget - 30% Reduction	All CII uses	☐	30%	50%	--	--

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Drought Response Tool

Home | Input Baseline Year Water Use | Baseline Year Water Use Profile | Drought Response Actions | Estimated Water Savings | Drought Response Tracking

4 - Drought Response Actions - Stage 4

City of Burlingame

Drought Response Actions						
Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
▶ Residential Customer Actions to Encourage						
Install Bathroom Faucet Aerators	Faucets and Dishwashers	☐			--	--
Install a Water-Efficient Showerhead	Showers/Baths	☐			--	--
Turn Off Water when Brushing Teeth, Shaving, Washing Dishes, or Cooking	Faucets and Dishwashers	☐			--	--
Fill the Bathtub Halfway	Showers/Baths	☐			--	--
Wash Only Full Loads of Clothes	Clothes Washers	☐			--	--
Install a High-Efficiency Toilet	Toilets	☐			--	--
Take Shorter Showers	Showers/Baths	☐			--	--
Run Dishwasher Only When Full	Faucets and Dishwashers	☐			--	--
Reduce Outdoor Irrigation	Irrigation	☐			--	--
Install Drip-Irrigation	Irrigation	☐			--	--
Use Mulch	Irrigation	☐			--	--
Plant Drought Resistant Trees and Plants	Irrigation	☐			--	--
Use a Broom to Clean Outdoor Areas	Misc. Outdoor	☐			--	--
Flush Less Frequently	Toilets	☐			--	--
Re-Use Shower or Bath Water for Irrigation	Irrigation	☐			--	--
Wash Car at Facility that Recycles the Water	Misc. Outdoor	☐			--	--

5 - Estimated Water Savings - Stage 4

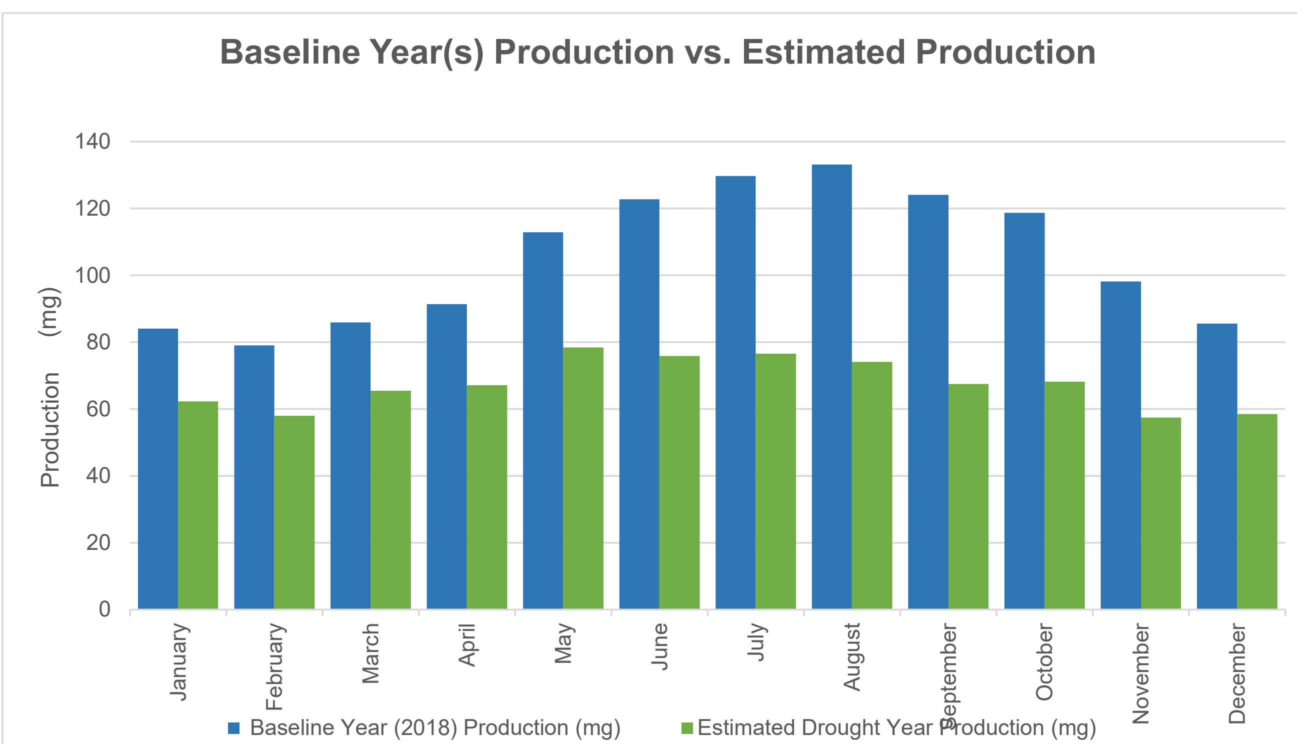
City of Burlingame

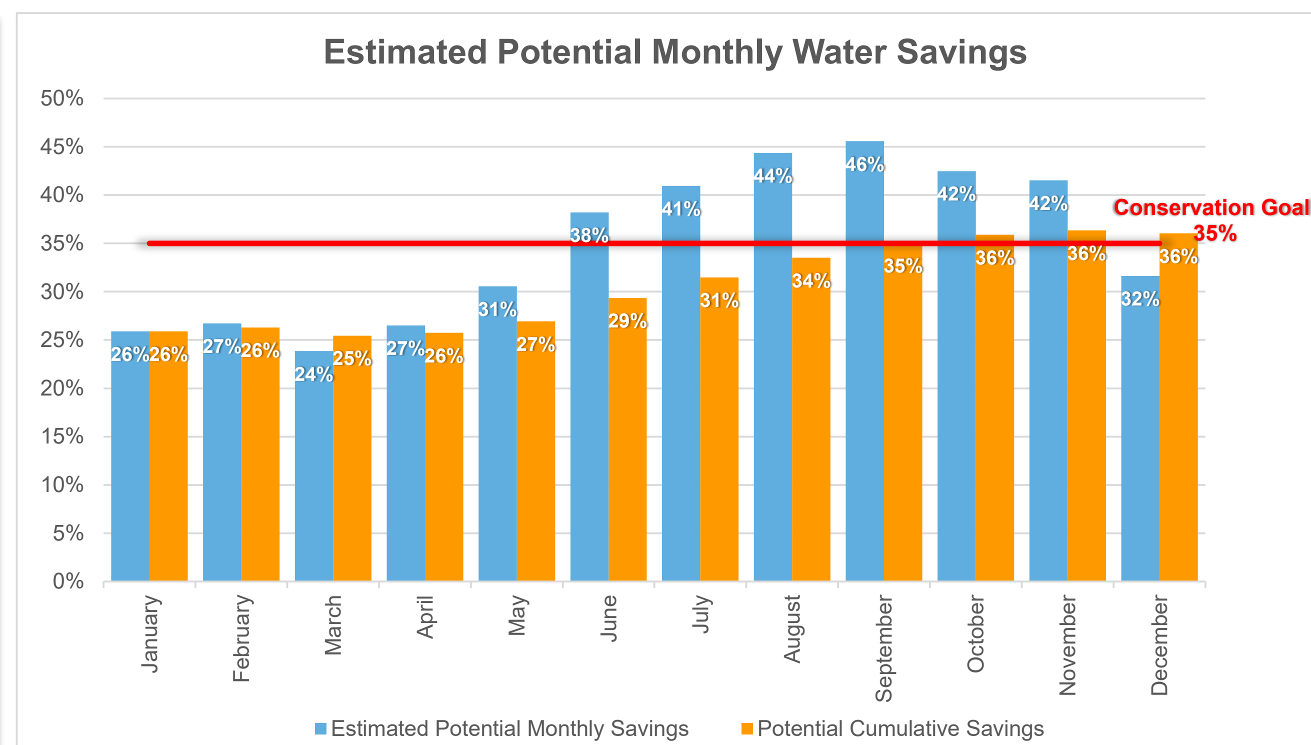
Estimated Monthly Water Use and Savings Summary

Units: (mg)

This provides a summary of the estimated production relative to Baseline Year production and potential water savings, assuming implementation of selected actions at the water savings and implementation rates indicated in the Drought Response Actions worksheet. Select the units that your production data are displayed in.

Month	Baseline Year (2018) Production (mg)	Estimated Drought Year Production (mg)	Estimated Potential Monthly Savings	Potential Cumulative Savings	Conservation Goal	Comments
January	84	62	26%	26%	35%	
February	79	58	27%	26%	35%	
March	86	65	24%	25%	35%	
April	91	67	27%	26%	35%	
May	113	78	31%	27%	35%	
June	123	76	38%	29%	35%	
July	130	77	41%	31%	35%	
August	133	74	44%	34%	35%	
September	124	68	46%	35%	35%	
October	119	68	42%	36%	35%	
November	98	57	42%	36%	35%	
December	86	58	32%	36%	35%	

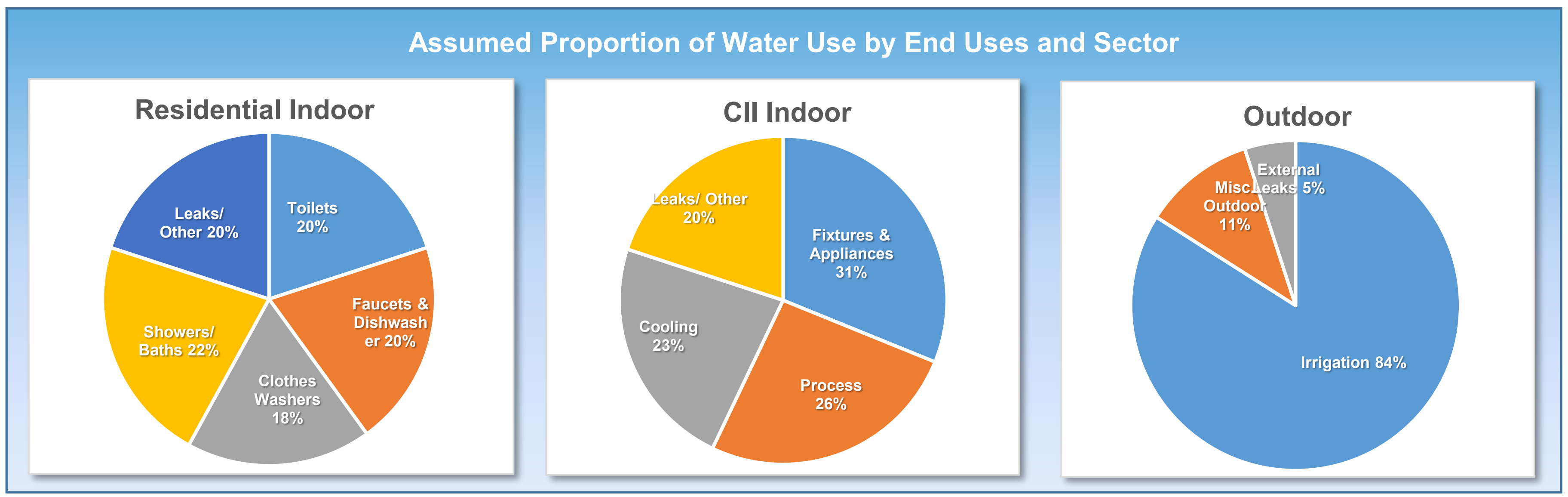




4 - Drought Response Actions - Stage 5

City of Burlingame

Maximum Savings Potential		
Use the default values or enter your own criteria for the maximum savings potential. Estimated water savings within each sector will not exceed the maximum savings criteria.		
Minimum Residential Indoor GPCD	25	R-GPCD
Maximum Residential Outdoor Savings	100%	of Baseline Residential Outdoor Water Use
Maximum CII Indoor Savings	30%	of Baseline CII Indoor Water Use
Maximum CII Outdoor Savings	100%	of Baseline CII Outdoor Water Use
Maximum Dedicated Irrigation Account Savings	100%	of Baseline Dedicated Irrigation Water Use
Maximum Non-Revenue Water Savings	50%	of Baseline Non-Revenue Water Use
Resulting Total Maximum Annual Savings Potential	**56%**	of Total Baseline Production



Drought Response Tool

Home | Input Baseline Year Water Use | Baseline Year Water Use Profile | Drought Response Actions | Estimated Water Savings | Drought Response Tracking

4 - Drought Response Actions - Stage 5

City of Burlingame

Drought Response Actions

Select the Drought Response Actions you would like to include in your estimated savings calculations. For each selected action, use the default end use savings estimates and implementation rates or input your own values. The "End Use Savings" estimates the percent water use reduction that could occur at a particular end use as a result of a specific action. The "Implementation Rate" refers to the estimated percentage of accounts that will implement a specific action. The water savings potential at each end use is capped based on the assumed distribution of end use water demands shown in the pie charts above. A dash (--) indicates that professional judgement was used to establish the default value, or that savings are expected to be accounted for as part of a Public Information Program; additional basis for the default values are included in the User Manual.

Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
Possible Mandatory Prohibitions	All Outdoor	☑	14%	**85%**	--	--
Prohibit Irrigation with Potable Water Outside of Newly Constructed Homes and Buildings that is not Delivered by Drip or Microspray Systems	Irrigation	☐			--	--
Require Shut-Off Nozzles on Hoses for Vehicle Washing	Misc. Outdoor	☑	17%	50%	See Appendix D of the DRP	--
Prohibit Use of Potable Water to Wash Sidewalks and Driveways	Misc. Outdoor	☑	17%	50%		--
Prohibit the Use of Potable Water for Street Washing	Misc. Outdoor	☐	17%	50%		--
Prohibit Irrigation with Potable Water in a Manner that causes Runoff	Irrigation	☑	3%	50%	DeOreo et al., 2011	--
Prohibit Irrigation with Potable Water within 48 Hours following Measurable Rainfall	Irrigation	☑			--	--
Prohibit Irrigation of Ornamental Turf with Potable Water on Street Medians	Irrigation	☑			--	--
Prohibit Potable Water Use for Decorative Water Features that do not Recirculate Water	Misc. Outdoor	☑	50%	50%	EBMUD, 2008	--
Provide Linen Service Opt Out Options	Fixtures & Appliances	☑	0.5%	50%	EBMUD, 2011	--
Prohibit Serving Drinking Water other than upon Request in Eating or Drinking Establishments	Fixtures & Appliances	☑	0.5%	50%	EBMUD, 2011	--

4 - Drought Response Actions - Stage 5

City of Burlingame

Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
▶ **Agency Drought Actions / Restrictions**						
▶ **Agency Actions**						
Media Campaign, Newspaper Articles, Website	All	☑	0.5%	**75%**	EBMUD, 2011	--
Promote Water Conservation / Rebate Programs	All	☑	**3%**	**65%**	--	--
Water Efficiency Workshops, Public Events	All	☑	0.5%	**30%**	EBMUD, 2011	--
Water Bill Inserts	All	☑	0.5%	100%	EBMUD, 2011	--
Promote / Expand Use of Recycled Water	Irrigation	☐	100%		--	--
Home or Mobile Water Use Reports	All	☑	5%	**20%**	WaterSmart Software, 2015	--
Decrease Frequency and Length of Line Flushing	Non Revenue Water	☑	25%	**100%**	See Appendix D of the DRP	Suspend flushing.
Audit and Reduce System Water Loss	Non Revenue Water	☑	45%	50%	DWR, 2015	Target 50% of leakage.
Implement Drought Rate Structure / Water Budgets	All	☑	5%	100%	CUWCC, 2015	--
Establish Retrofit on Resale Ordinance	All Residential Indoor	☐	21%	6%	SFPUC, 2004	First Tuesday, 2015
Require Net Zero Demand Increase on New Connections	All	☑			--	--
Moratorium on New Connections	All	☑			--	--
Move to Monthly Metering / Billing	All	☑	5%	10%	See Appendix D of the DRP	--
Increase Water Waste Patrols / Enforcement	All	☑			--	--
Establish Drought Hotline	All	☐			--	--
Reduce Distribution System Pressures	Non Revenue Water	☑	4.5%	100%	CUWCC, 2010; DWR, 2015	--
▶ **Dedicated Irrigation**						
Conduct Irrigation Account Surveys	Irrigation	☑	30%	10%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to 2 Days/Week, 15 Minutes/Day, Between 9PM and 6AM	Irrigation	☐	38%	75%	UC IPM, 2014	--
Limit Irrigation to 1 Day/Week, 10 Minutes/Day, Between 6PM and 8AM	Irrigation	☑	79%	**90%**	UC IPM, 2014	--
Prohibit use of Potable Water for Irrigation	Irrigation	☐	100%	50%	UC IPM, 2014	--
Require Repair of all Leaks within 24 hours	External Leaks	☑	100%	5%	--	--
Customer Water Budgets						
Establish Water Budget - 25% Reduction	Irrigation	☐	25%	75%	--	--
Establish Water Budget - 50% Reduction	Irrigation	☐	50%	75%	--	--
Establish Water Budget - 90% Reduction	Irrigation	☑	**20%**	**90%**	--	--

4 - Drought Response Actions - Stage 5

City of Burlingame

Drought Response Actions						
Action Description	**End Use(s)**	**Implement Program**	**End Use Savings (%)**	**Implementation Rate**	**Source of Default Savings Estimate**	**Source of Default Implementation Rate**
▶ Agency Drought Actions / Restrictions						
▶ Residential						
Conduct Water Use Surveys Targeting High Water Users	All Residential Uses	☑	10%	10%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to 2 Days/Week, 15 Minutes/Day, Between 9PM and 6AM	Irrigation	☐	38%	75%	UC IPM, 2014	--
Limit Irrigation to 1 Day/Week, 10 Minutes/Day, Between 6PM and 8AM	Irrigation	☑	79%	**85%**		
Prohibit use of Potable Water for Irrigation	Irrigation	☐	100%	50%		
Prohibit Vehicle Washing Except with Recycled Water	Misc. Outdoor	☑	50%	50%	EBMUD, 2008	--
Require Repair of all Leaks within 24 hours	Leaks	☑	100%	5%	--	--
Require Pool Covers	Misc. Outdoor	☐	28%	25%	Maddaus & Mayer, 2001	--
Prohibit Filling of Pools	Misc. Outdoor	☑	55%	25%	DeOreo et al., 2011	--
Customer Water Budgets						
Establish Water Budget - 10% Reduction	All Residential Uses	☐	10%	75%	--	--
Establish Water Budget - 25% Reduction	All Residential Uses	☑	20%	**80%**	--	--
▶ CII						
Conduct CII Surveys Targeting High Water Users	All CII uses	☑	10%	10%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to 2 Days/Week, 15 Minutes/Day, Between 9PM and 6AM	Irrigation	☐	38%	75%	UC IPM, 2014	--
Limit Irrigation to 1 Day/Week, 10 Minutes/Day, Between 6PM and 8AM	Irrigation	☑	79%	**85%**		
Prohibit Use of Potable Water for Construction and Dust Control	Misc. Outdoor	☐		100%	--	--
Prohibit Single-Pass Cooling Systems	Cooling	☑	80%	1%	Vickers, 2001	--
Require Repair of all Leaks within 24 hours	Leaks	☑	100%	5%	--	--
Prohibit Vehicle Washing Except with Recycled Water	Misc. Outdoor	☑	50%	50%	EBMUD, 2008	--
Require Water-Efficient Pre-Rinse Spray Valves	Fixtures & Appliances	☐	0.8%	50%	EPA, 2015; Pacific Institute, 2003	--
Customer Water Budgets						
Establish Water Budget - 10% Reduction	All CII uses	☐	10%	75%	--	--
Establish Water Budget - 20% Reduction	All CII uses	☑	**25%**	**80%**	--	--
Establish Water Budget - 30% Reduction	All CII uses	☐	30%	80%	--	--

4 - Drought Response Actions - Stage 5

City of Burlingame

Drought Response Actions						
Action Description	**End Use(s)**	**Implement Program**	**End Use Savings (%)**	**Implementation Rate**	**Source of Default Savings Estimate**	**Source of Default Implementation Rate**
▶ **Residential Customer Actions to Encourage**						
Install Bathroom Faucet Aerators	Faucets and Dishwashers	☐			--	--
Install a Water-Efficient Showerhead	Showers/Baths	☐			--	--
Turn Off Water when Brushing Teeth, Shaving, Washing Dishes, or Cooking	Faucets and Dishwashers	☐			--	--
Fill the Bathtub Halfway	Showers/Baths	☐			--	--
Wash Only Full Loads of Clothes	Clothes Washers	☐			--	--
Install a High-Efficiency Toilet	Toilets	☐			--	--
Take Shorter Showers	Showers/Baths	☐			--	--
Run Dishwasher Only When Full	Faucets and Dishwashers	☐			--	--
Reduce Outdoor Irrigation	Irrigation	☐			--	--
Install Drip-Irrigation	Irrigation	☐			--	--
Use Mulch	Irrigation	☐			--	--
Plant Drought Resistant Trees and Plants	Irrigation	☐			--	--
Use a Broom to Clean Outdoor Areas	Misc. Outdoor	☐			--	--
Flush Less Frequently	Toilets	☐			--	--
Re-Use Shower or Bath Water for Irrigation	Irrigation	☐			--	--
Wash Car at Facility that Recycles the Water	Misc. Outdoor	☐			--	--

5 - Estimated Water Savings - Stage 5

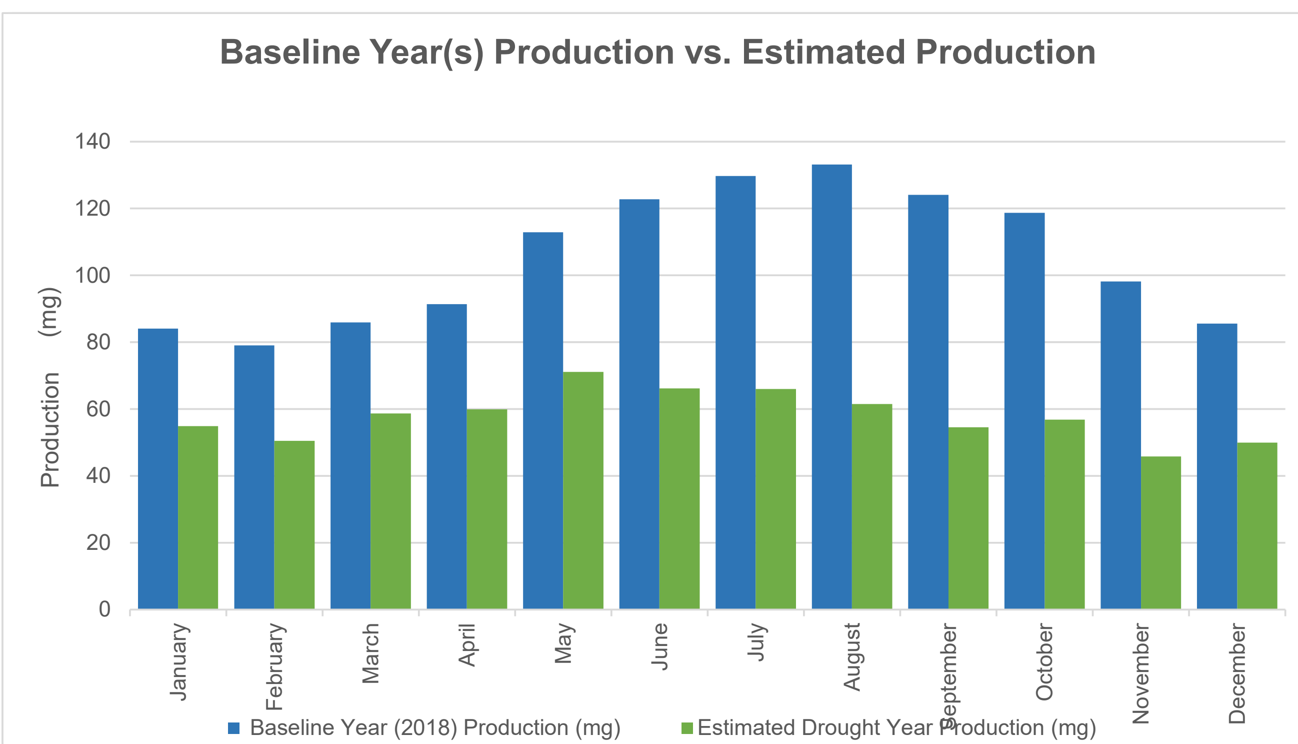
City of Burlingame

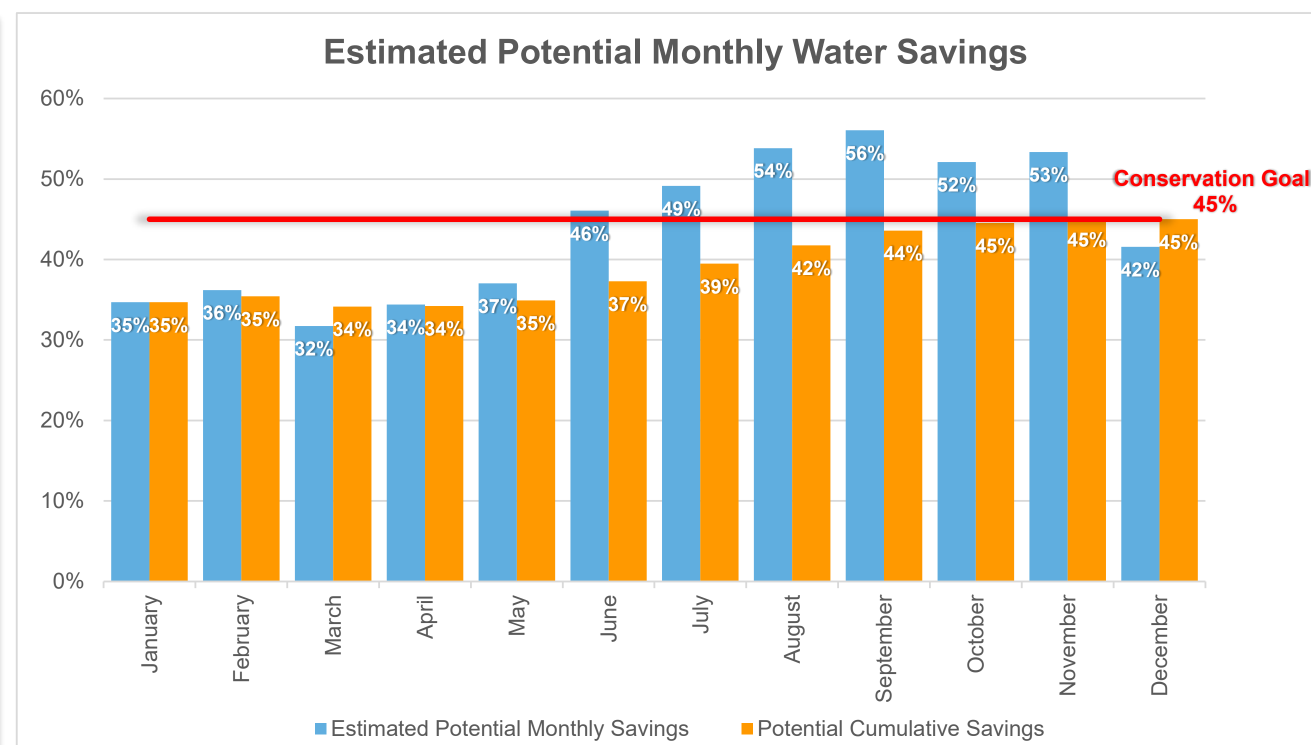
Estimated Monthly Water Use and Savings Summary

Units: (mg)

This provides a summary of the estimated production relative to Baseline Year production and potential water savings, assuming implementation of selected actions at the water savings and implementation rates indicated in the Drought Response Actions worksheet. Select the units that your production data are displayed in.

Month	Baseline Year (2018) Production (mg)	Estimated Drought Year Production (mg)	Estimated Potential Monthly Savings	Potential Cumulative Savings	Conservation Goal	Comments
January	84	55	35%	35%	45%	
February	79	50	36%	35%	45%	
March	86	59	32%	34%	45%	
April	91	60	34%	34%	45%	
May	113	71	37%	35%	45%	
June	123	66	46%	37%	45%	
July	130	66	49%	39%	45%	
August	133	61	54%	42%	45%	
September	124	55	56%	44%	45%	
October	119	57	52%	45%	45%	
November	98	46	53%	45%	45%	
December	86	50	42%	45%	45%	





4 - Drought Response Actions - Stage 6

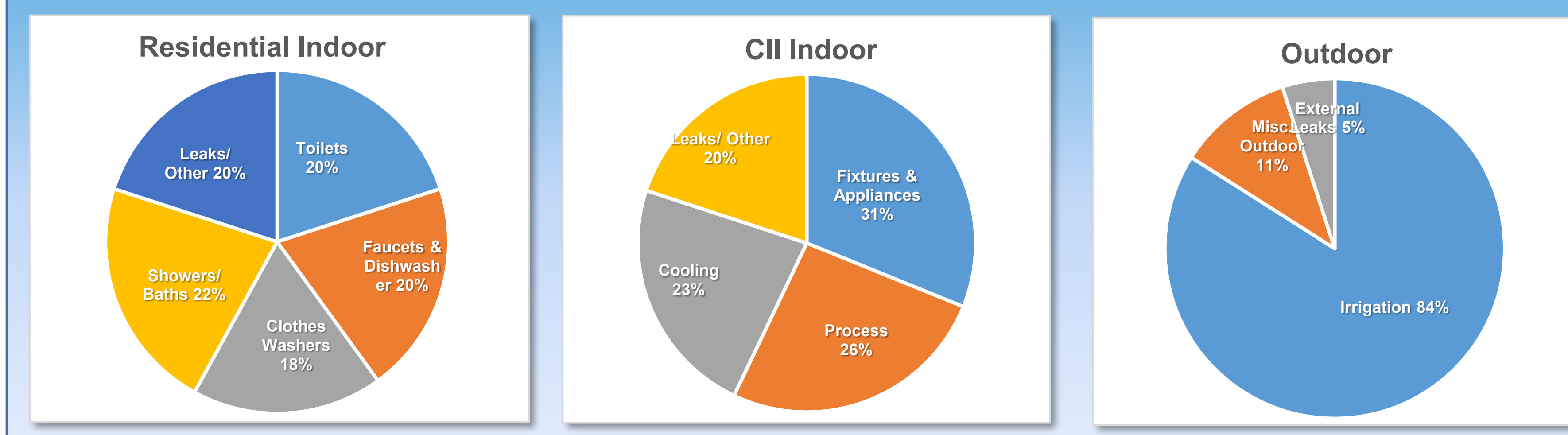
City of Burlingame

Maximum Savings Potential

Use the default values or enter your own criteria for the maximum savings potential. Estimated water savings within each sector will not exceed the maximum savings criteria.

Minimum Residential Indoor GPCD	25	R-GPCD
Maximum Residential Outdoor Savings	100%	of Baseline Residential Outdoor Water Use
Maximum CII Indoor Savings	30%	of Baseline CII Indoor Water Use
Maximum CII Outdoor Savings	100%	of Baseline CII Outdoor Water Use
Maximum Dedicated Irrigation Account Savings	100%	of Baseline Dedicated Irrigation Water Use
Maximum Non-Revenue Water Savings	50%	of Baseline Non-Revenue Water Use
Resulting Total Maximum Annual Savings Potential	**56%**	of Total Baseline Production

Assumed Proportion of Water Use by End Uses and Sector



4 - Drought Response Actions - Stage 6

City of Burlingame

Drought Response Actions

Select the Drought Response Actions you would like to include in your estimated savings calculations. For each selected action, use the default end use savings estimates and implementation rates or input your own values. The "End Use Savings" estimates the percent water use reduction that could occur at a particular end use as a result of a specific action. The "Implementation Rate" refers to the estimated percentage of accounts that will implement a specific action. The water savings potential at each end use is capped based on the assumed distribution of end use water demands shown in the pie charts above. A dash (--) indicates that professional judgement was used to establish the default value, or that savings are expected to be accounted for as part of a Public Information Program; additional basis for the default values are included in the User Manual.

Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
▶ **Possible Mandatory Prohibitions**	All Outdoor	☑	14%	**90%**	--	--
Prohibit Irrigation with Potable Water Outside of Newly Constructed Homes and Buildings that is not Delivered by Drip or Microspray Systems	Irrigation	☐			--	--
Require Shut-Off Nozzles on Hoses for Vehicle Washing	Misc. Outdoor	☑	17%	50%	See Appendix D of the DRP	--
Prohibit Use of Potable Water to Wash Sidewalks and Driveways	Misc. Outdoor	☑	17%	50%		--
Prohibit the Use of Potable Water for Street Washing	Misc. Outdoor	☐	17%	50%		--
Prohibit Irrigation with Potable Water in a Manner that causes Runoff	Irrigation	☑	3%	50%	DeOreo et al., 2011	--
Prohibit Irrigation with Potable Water within 48 Hours following Measurable Rainfall	Irrigation	☑			--	--
Prohibit Irrigation of Ornamental Turf with Potable Water on Street Medians	Irrigation	☑			--	--
Prohibit Potable Water Use for Decorative Water Features that do not Recirculate Water	Misc. Outdoor	☑	50%	50%	EBMUD, 2008	--
Provide Linen Service Opt Out Options	Fixtures & Appliances	☑	0.5%	50%	EBMUD, 2011	--
Prohibit Serving Drinking Water other than upon Request in Eating or Drinking Establishments	Fixtures & Appliances	☑	0.5%	50%	EBMUD, 2011	--

4 - Drought Response Actions - Stage 6

City of Burlingame

Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
▶ Agency Drought Actions / Restrictions						
▶ Agency Actions						
Media Campaign, Newspaper Articles, Website	All	☑	0.5%	**75%**	EBMUD, 2011	--
Promote Water Conservation / Rebate Programs	All	☑	**3%**	**65%**	--	--
Water Efficiency Workshops, Public Events	All	☑	0.5%	**30%**	EBMUD, 2011	--
Water Bill Inserts	All	☑	0.5%	100%	EBMUD, 2011	--
Promote / Expand Use of Recycled Water	Irrigation	☐	100%		--	--
Home or Mobile Water Use Reports	All	☑	5%	**20%**	WaterSmart Software, 2015	--
Decrease Frequency and Length of Line Flushing	Non Revenue Water	☑	25%	**100%**	See Appendix D of the DRP	Suspend flushing.
Audit and Reduce System Water Loss	Non Revenue Water	☑	45%	50%	DWR, 2015	Target 50% of leakage.
Implement Drought Rate Structure / Water Budgets	All	☑	5%	100%	CUWCC, 2015	--
Establish Retrofit on Resale Ordinance	All Residential Indoor	☐	21%	6%	SFPUC, 2004	First Tuesday, 2015
Require Net Zero Demand Increase on New Connections	All	☐			--	--
Moratorium on New Connections	All	☑			--	--
Move to Monthly Metering / Billing	All	☑	5%	10%	See Appendix D of the DRP	--
Increase Water Waste Patrols / Enforcement	All	☑			--	--
Establish Drought Hotline	All	☐			--	--
Reduce Distribution System Pressures	Non Revenue Water	☑	4.5%	100%	CUWCC, 2010; DWR, 2015	--
▶ Dedicated Irrigation						
Conduct Irrigation Account Surveys	Irrigation	☑	30%	10%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to 2 Days/Week, 15 Minutes/Day, Between 9PM and 6AM	Irrigation	☐	38%	75%	UC IPM, 2014	--
Limit Irrigation to 1 Day/Week, 10 Minutes/Day, Between 9PM and 6AM	Irrigation	☐	79%	80%		
Prohibit use of Potable Water for Irrigation	Irrigation	☑	100%	**90%**		
Require Repair of all Leaks within 24 hours	External Leaks	☑	100%	5%	--	--
Customer Water Budgets						
Establish Water Budget - 25% Reduction	Irrigation	☐	25%	75%	--	--
Establish Water Budget - 50% Reduction	Irrigation	☐	50%	75%	--	--
Establish Water Budget - 100% Reduction	Irrigation	☑	**100%**	**90%**	--	--

Drought Response Tool

Home | Input Baseline Year Water Use | Baseline Year Water Use Profile | Drought Response Actions | Estimated Water Savings | Drought Response Tracking

4 - Drought Response Actions - Stage 6

City of Burlingame

Drought Response Actions						
Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
▶ **Agency Drought Actions / Restrictions**						
▶ **Residential**						
Conduct Water Use Surveys Targeting High Water Users	All Residential Uses	☑	10%	10%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to 2 Days/Week, 15 Minutes/Day, Between 9PM and 6AM	Irrigation	☐	38%	75%	UC IPM, 2014	--
Limit Irrigation to 1 Day/Week, 10 Minutes/Day, Between 9PM and 6AM	Irrigation	☐	79%	80%		
Prohibit use of Potable Water for Irrigation	Irrigation	☑	100%	**90%**		
Prohibit Vehicle Washing Except with Recycled Water	Misc. Outdoor	☑	50%	50%	EBMUD, 2008	--
Require Repair of all Leaks within 24 hours	Leaks	☑	100%	5%	--	--
Require Pool Covers	Misc. Outdoor	☐	28%	25%	Maddaus & Mayer, 2001	--
Prohibit Filling of Pools	Misc. Outdoor	☐	55%	25%	DeOreo et al., 2011	--
Customer Water Budgets						
Establish Water Budget - 10% Reduction	All Residential Uses	☐	10%	75%	--	--
Establish Water Budget - 45% Reduction	All Residential Uses	☑	**40%**	**90%**	--	--
▶ **CII**						
Conduct CII Surveys Targeting High Water Users	All CII uses	☑	10%	10%	EBMUD, 2011	--
Limit Irrigation Days, Time and Duration (Select One)						
Limit Irrigation to 2 Days/Week, 15 Minutes/Day, Between 9PM and 6AM	Irrigation	☐	38%	75%	UC IPM, 2014	--
Prohibit use of Potable Water for Irrigation	Irrigation	☑	**100%**	**90%**		
Prohibit Use of Potable Water for Construction and Dust Control	Misc. Outdoor	☐		100%	--	--
Prohibit Single-Pass Cooling Systems	Cooling	☑	80%	1%	Vickers, 2001	--
Require Repair of all Leaks within 24 hours	Leaks	☑	100%	5%	--	--
Prohibit Vehicle Washing Except with Recycled Water	Misc. Outdoor	☑	50%	50%	EBMUD, 2008	--
Require Water-Efficient Pre-Rinse Spray Valves	Fixtures & Appliances	☐	0.8%	50%	EPA, 2015; Pacific Institute, 2003	--
Customer Water Budgets						
Establish Water Budget - 10% Reduction	All CII uses	☐	10%	75%	--	--
Establish Water Budget - 20% Reduction	All CII uses	☐	20%	75%	--	--
Establish Water Budget - 35% Reduction	All CII uses	☑	**45%**	**90%**	--	--

4 - Drought Response Actions - Stage 6

City of Burlingame

Drought Response Actions						
Action Description	End Use(s)	Implement Program	End Use Savings (%)	Implementation Rate	Source of Default Savings Estimate	Source of Default Implementation Rate
▶ **Residential Customer Actions to Encourage**						
Install Bathroom Faucet Aerators	Faucets and Dishwashers	☐			--	--
Install a Water-Efficient Showerhead	Showers/Baths	☐			--	--
Turn Off Water when Brushing Teeth, Shaving, Washing Dishes, or Cooking	Faucets and Dishwashers	☐			--	--
Fill the Bathtub Halfway	Showers/Baths	☐			--	--
Wash Only Full Loads of Clothes	Clothes Washers	☐			--	--
Install a High-Efficiency Toilet	Toilets	☐			--	--
Take Shorter Showers	Showers/Baths	☐			--	--
Run Dishwasher Only When Full	Faucets and Dishwashers	☐			--	--
Reduce Outdoor Irrigation	Irrigation	☐			--	--
Install Drip-Irrigation	Irrigation	☐			--	--
Use Mulch	Irrigation	☐			--	--
Plant Drought Resistant Trees and Plants	Irrigation	☐			--	--
Use a Broom to Clean Outdoor Areas	Misc. Outdoor	☐			--	--
Flush Less Frequently	Toilets	☐			--	--
Re-Use Shower or Bath Water for Irrigation	Irrigation	☐			--	--
Wash Car at Facility that Recycles the Water	Misc. Outdoor	☐			--	--

5 - Estimated Water Savings - Stage 6

City of Burlingame

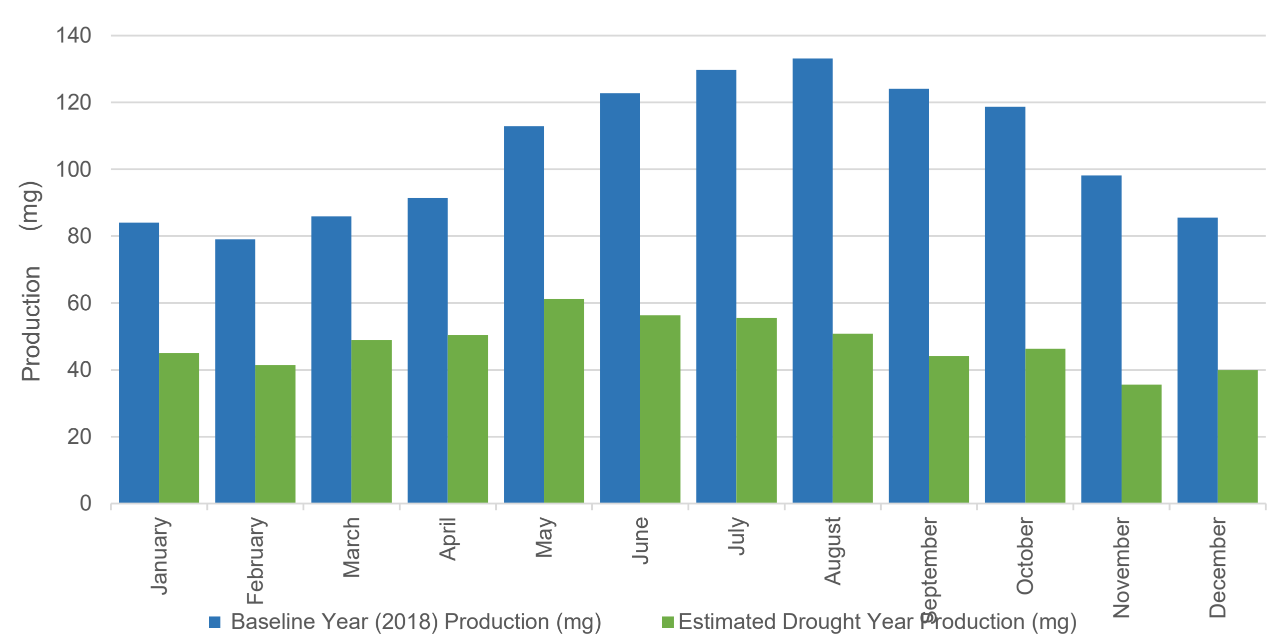
Estimated Monthly Water Use and Savings Summary

Units: (mg)

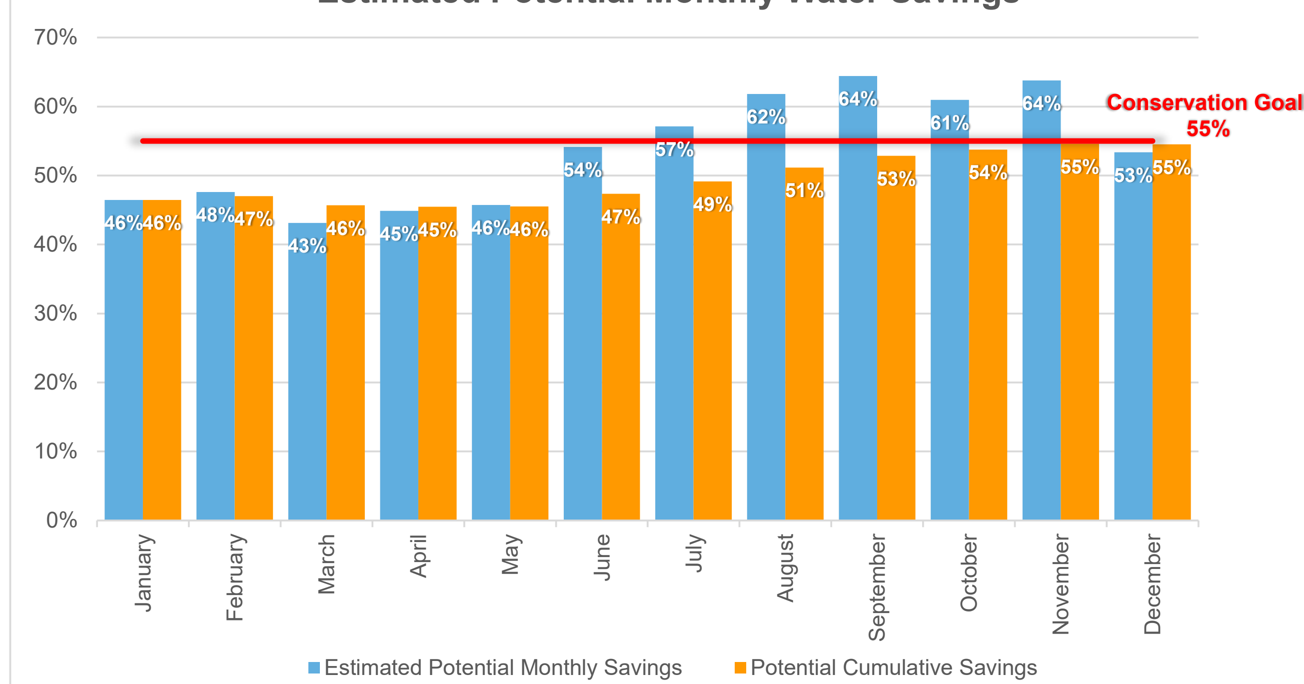
This provides a summary of the estimated production relative to Baseline Year production and potential water savings, assuming implementation of selected actions at the water savings and implementation rates indicated in the Drought Response Actions worksheet. Select the units that your production data are displayed in.

Month	Baseline Year (2018) Production (mg)	Estimated Drought Year Production (mg)	Estimated Potential Monthly Savings	Potential Cumulative Savings	Conservation Goal	Comments
January	84	45	46%	46%	55%	
February	79	41	48%	47%	55%	
March	86	49	43%	46%	55%	
April	91	50	45%	45%	55%	
May	113	61	46%	46%	55%	
June	123	56	54%	47%	55%	
July	130	56	57%	49%	55%	
August	133	51	62%	51%	55%	
September	124	44	64%	53%	55%	
October	119	46	61%	54%	55%	
November	98	36	64%	55%	55%	
December	86	40	53%	55%	55%	

Baseline Year(s) Production vs. Estimated Production



Estimated Potential Monthly Water Savings



ATTACHMENT 4
WATER SHORTAGE CONTINGENCY PLAN RESOLUTION

RESOLUTION NO. 113-2021

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF BURLINGAME ADOPTING THE 2020 WATER SHORTAGE CONTINGENCY PLAN

The City Council of the City of Burlingame, California resolves as follows:

WHEREAS, the 2020 Water Shortage Contingency Plan (WSCP) is a required element of the Urban Water Management Plan Act (UWMP), is included in Appendix I of the UWMP draft documents, describes the conditions that constitute a water shortage, and provides guidelines, actions, and procedures for managing water supply and demands during a declared (by the City Council) water shortage; and

WHEREAS, the WSCP uses six standard water shortage levels corresponding to progressive ranges of up to 10, 20, 30, 40, and 50 percent shortages and greater than 50 percent shortage, which is consistent with state guidelines for available water and how it would be allocated among various customer categories according to priority. It presents the recommended actions from cutback during a declared water shortage; and

WHEREAS, the City Council held a duly noticed public hearing regarding the draft 2020 WSCP on September 7, 2021, at which time all public comments were heard and considered;

NOW, THEREFORE, be it RESOLVED, DETERMINED AND ORDERED BY THE COUNCIL, AS FOLLOWS:

1. The City Council of the City of Burlingame finds all of the facts recited above, in the staff report, and during the presentation of this matter, to be true and correct.
2. The City Council of the City of Burlingame approves the City of Burlingame Water Shortage Contingency Plan, attached to the staff report.

Ann O'Brien Keighran, Mayor

I, Meaghan Hassel Shearer, City Clerk of the City of Burlingame, certify that the foregoing Resolution was introduced at a regular meeting of the City Council held on the 7th day of September, 2021 and was adopted thereafter by the following vote:

AYES: COUNCILMEMBERS: BEACH, BROWNRIGG, COLSON, O'BRIEN KEIGHRAN, ORTIZ
NOES: COUNCILMEMBERS: NONE
ABSENT: COUNCILMEMBERS: NONE

Meaghan Hassel-Shearer, City Clerk

APPENDIX J
LETTERS TO SWRCB

The City of Burlingame

PUBLIC WORKS DEPARTMENT
(650) 558-7230

CITY HALL - 501 PRIMROSE ROAD
BURLINGAME, CALIFORNIA 94010-3997

CORPORATION YARD
(650) 558-7670

March 1, 2017

Jeanine Townsend, Clerk to the Board
State Water Resources Control Board
Cal/EPA Headquarters
1001 "I" Street, 24th Floor
Sacramento, CA 95814-0100
commentletters@waterboards.ca.gov

Re: Comment Letter – 2016 Bay-Delta Plan Amendment & SED

Dear Ms. Townsend:

The City of Burlingame submits the following comments regarding the *Recirculated Draft Substitute Environmental Document in Support of Potential Changes to the Water Quality Control Plan for the San Francisco Bay-Sacramento/San Joaquin Delta Estuary: San Joaquin River Flows and Southern Delta Water Quality* (SED). In addition, Burlingame would like to incorporate by reference separate comments submitted by the Bay Area Water Supply and Conservation Agency (BAWSCA) and the San Francisco Public Utilities Commission (SFPUC) that provide more detail of the SED proposal's impact on Burlingame's service area and the region.

Under the SED, the State Water Resources Control Board (SWRCB) proposes substantial changes to flow objectives for the Tuolumne River. These changes are anticipated to result in significantly reduced surface water available for diversions, thereby causing significant, potentially unavoidable impacts to water supply and the environment. Below we provide relevant information that the SWRCB must consider in conducting its analysis of the SED's impacts:

- As a wholesale customer of SFPUC that purchases 100% of its potable water supply from the San Francisco Regional Water System, water supply available to Burlingame under the SED proposal could be reduced more than 50% under drought conditions for multiple consecutive years.

- Burlingame has made significant strides in water conservation in the past 10 years. Residential per capita water use decreased 30% from 162 gallons per capita per day (gpcd) in 2005 to 113 gpcd in 2015.

- Based on Burlingame's 2015 Urban Water Management Plan, this significant cut to water supply would force the City to take a number of significant actions including, but not limited to, prohibiting irrigation of all turf City-wide, prohibiting any new water service connections resulting in a moratorium on new development, and setting restrictive water budgets for every account in the City, to minimize nonessential uses of water so that water is available for human consumption, sanitation, and fire protection.

- Burlingame serves water to a population of over 31,000 residential customers and over 950 businesses and other non-residential customers. Potential consequences of the SED proposal include health and safety concerns due to lack of potable supplies, major job losses, slower economic growth and delayed community development in Burlingame's service area.

- Since outdoor use represents a relatively small proportion of Burlingame's commercial, industrial, and institutional account water demand, commercial, industrial, and institutional customers generally have fewer opportunities to reduce water use without changing their operations or incurring significant economic impacts.

- Such reductions in water supply from the SFPUC may force Burlingame to develop and use emergency local groundwater supplies at great expense and having unknown, and potentially significant undesirable results, such as groundwater overdraft, sea water intrusion, and subsidence, which were not adequately analyzed in the SED.

In the light of these aforementioned impacts as well as those articulated in the BAWSCA and SFPUC comment letters incorporated here by reference, Burlingame requests that environmental and economic impacts of any shortage on the San Francisco Regional Water System, and the associated lost jobs and delayed development, be fully and adequately analyzed as part of the SWRCB's proposed flow alternatives. Such full and adequate analysis should be given at least equal weight with all other elements of the SWRCB's subsequent deliberations and decision making.

Last, the Governor has indicated his strong support for negotiated voluntary agreements to resolve these issues. Burlingame requests that the SWRCB provide adequate time for voluntary agreements to be reached amongst the stakeholders prior to any action on the SED. Please give this settlement process a chance for success instead of expediting implementation of the current proposal. Burlingame shares BAWSCA's commitment to continue working closely with the diverse interests and stakeholders to develop that shared solution.

Sincerely,

THE CITY OF BURLINGAME

Syed Murtuza
Director of Public Works

The City of Burlingame

PUBLIC WORKS DEPARTMENT
TEL: (650) 558-7230
FAX: (650) 685-9310

CITY HALL - 501 PRIMROSE ROAD
BURLINGAME, CALIFORNIA 94010-3997
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TEL: (650) 558-7670
FAX: (650) 696-1598

October 23, 2018

The Honorable Malia Cohen, President
Members of the San Francisco Board of Supervisors
1 Dr. Carlton B. Goodlett Place
City Hall, Room 244
San Francisco, CA 94102-4689

Subject: Request to Delay Action on Resolution Urging Support of State Water Board Proposed Updates to the 2006 Bay-Delta Plan (File No. 181014)

Dear President Cohen and Members of the San Francisco Board of Supervisors,

The City of Burlingame (Burlingame) urges the San Francisco Board of Supervisors (SFBOS) to delay action on the proposed resolution that advocates support of the State Water Board's proposed updates to the 2006 Bay-Delta Plan to allow for the potential success of ongoing voluntary settlement negotiations.

Burlingame is a wholesale customer that purchases 100% of its potable water supply from the San Francisco Regional Water System and has done so for decades. Our City serves approximately 31,100 residents and 1,600 non-residential accounts. In terms of water use, residential gallons per capita per day (R-GPCD) presently averages sixty-four (64) GPCPD.

The State Water Board's proposed plan would challenge our ability to meet our customers' needs. The San Francisco Public Utilities Commission has developed an alternative to the State Board's plan, one that addresses both the environment's need for water and our region's need for water supply reliability.

Governor Brown has expressed his support for negotiated voluntary agreements to resolve this issue. State Board Chair Felicia Marcus has indicated her belief that such voluntary agreements provide the most durable solution to this challenging issue. We request that the SFBOS, in the interest of achieving good public policy, delay passing a resolution advocating a policy position while the current negotiations process is ongoing. Negotiations have the potential to recommend a path forward that respects the needs of the environment and ensures that a reliable water supply remains in place for our communities. That potential should not be dismissed as unlikely at this point in time.

Respectfully,

Art Morimoto

Art Morimoto
Assistant Director of Public Works

c: Angela Calvillo, Clerk of the San Francisco Board of Supervisors
Erica Major, Land Use and Transportation Committee Assistant Clerk

APPENDIX K
RESOLUTION NO. 112-2021, ADOPTING THE 2020 URBAN WATER MANAGEMENT PLAN, AND RESOLUTION NO. 113-2021, ADOPTING THE 2020 WATER SHORTAGE CONTINGENCY PLAN, FOR THE CITY OF BURLINGAME

RESOLUTION NO. 112-2021

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF BURLINGAME ADOPTING THE 2020 URBAN WATER MANAGEMENT PLAN

The City Council of the City of Burlingame, California resolves as follows:

WHEREAS, the Urban Water Management Plan Act requires water suppliers to update their Urban Water Management Plan (UWMP) and submit a complete UWMP to the State of California Department of Water Resources every five years; and

WHEREAS, the City has prepared its 2020 UWMP pursuant to the State of California's Urban Water Planning Act; and

WHEREAS, the 2020 Urban Water Management Planning Act requires a public hearing to discuss proposed revisions and updates to the City's UWMP; and

WHEREAS, UWMP's are planning documents prepared for water suppliers to assist them in evaluation of adequate water supplies to meet anticipated future needs and to assist them in managing the efficient use of water within their service area; and

WHEREAS, the UWMP will facilitate local and regional water planning activities and support the City's long-term water resource planning goals; and

WHEREAS, SBX7-7, otherwise known as the Water Conservation Bill of 2009, also requires that all water suppliers increase their water use efficiency; and

WHEREAS, a duly noticed public hearing regarding the draft 2020 UWMP and water use targets required by SBX7-7, was held by the City Council on September 7, 2021, at which time all public comments were heard and considered.

NOW, THEREFORE, be it RESOLVED, DETERMINED AND ORDERED BY THE COUNCIL, AS FOLLOWS:

1. The City Council of the City of Burlingame finds all of the facts recited above, in the staff report, and during the presentation of this matter, to be true and correct.
2. The City Council of the City of Burlingame approves the City of Burlingame Urban Water Management Plan, attached to the staff report.

Ann O'Brien Keighran

Mayor Ann O'Brien Keighran

I, Meaghan Hassel Shearer, City Clerk of the City of Burlingame, certify that the foregoing Resolution was introduced at a regular meeting of the City Council held on the 7th day of September, 2021 and was adopted thereafter by the following vote:

AYES: COUNCILMEMBERS: BEACH, BROWNRIGG, COLSON, O'BRIEN KEIGHRAN, ORTIZ
NOES: COUNCILMEMBERS: NONE
ABSENT: COUNCILMEMBERS: NONE

Meaghan Hassel-Shearer, City Clerk

RESOLUTION NO. 113-2021

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF BURLINGAME ADOPTING THE 2020 WATER SHORTAGE CONTINGENCY PLAN

The City Council of the City of Burlingame, California resolves as follows:

WHEREAS, the 2020 Water Shortage Contingency Plan (WSCP) is a required element of the Urban Water Management Plan Act (UWMP), is included in Appendix I of the UWMP draft documents, describes the conditions that constitute a water shortage, and provides guidelines, actions, and procedures for managing water supply and demands during a declared (by the City Council) water shortage; and

WHEREAS, the WSCP uses six standard water shortage levels corresponding to progressive ranges of up to 10, 20, 30, 40, and 50 percent shortages and greater than 50 percent shortage, which is consistent with state guidelines for available water and how it would be allocated among various customer categories according to priority. It presents the recommended actions from cutback during a declared water shortage; and

WHEREAS, the City Council held a duly noticed public hearing regarding the draft 2020 WSCP on September 7, 2021, at which time all public comments were heard and considered;

NOW, THEREFORE, be it RESOLVED, DETERMINED AND ORDERED BY THE COUNCIL, AS FOLLOWS:

1. The City Council of the City of Burlingame finds all of the facts recited above, in the staff report, and during the presentation of this matter, to be true and correct.
2. The City Council of the City of Burlingame approves the City of Burlingame Water Shortage Contingency Plan, attached to the staff report.

Ann O'Brien Keighran, Mayor

I, Meaghan Hassel Shearer, City Clerk of the City of Burlingame, certify that the foregoing Resolution was introduced at a regular meeting of the City Council held on the 7th day of September, 2021 and was adopted thereafter by the following vote:

AYES: COUNCILMEMBERS: BEACH, BROWNRIGG, COLSON, O'BRIEN KEIGHRAN, ORTIZ
NOES: COUNCILMEMBERS: NONE
ABSENT: COUNCILMEMBERS: NONE

Meaghan Hassel-Shearer, City Clerk

APPENDIX L
NOTIFICATION OF LATE SUBMITTAL TO DWR

From: PW/ENG-Kevin Okada
To: UWMPHelp@water.ca.gov
Cc: Tyler Colyer; Anona Dutton; PW/ENG-Jennifer Lee
Subject: City of Burlingame - Notice of late submission for 2020 UWMP & WSCP
Date: Monday, June 28, 2021 9:23:32 AM
Attachments: Late submittal.pdf

Dear Department of Water Resources,

The Urban Water Management Planning Act (California Water Code §10608–10656) requires the City of Burlingame (City) to update its Urban Water Management Plan (UWMP) and associated Water Shortage Contingency Plan (WSCP) every 5 years. Due to the City of Burlingame supplier's (San Francisco Public Utilities Commission) forecast for unprecedented multiple dry year water supply reductions, the City of Burlingame needs additional time to analyze the impacts, conduct public outreach and address concerns, and therefore will not be able to submit the UWMP by the July 1, 2021 DWR deadline.

The City Council held a study session on May 17, 2021 to review the draft UWMP and provide input. The City is continuing to develop the document and plans to hold a Public Hearing in August of 2021. Upon completion and adoption of the updated UWMP the City will submit the documents to the WUE portal within 30 days.

Thank you,

Kevin Okada P.E.
Senior Civil Engineer
City of Burlingame