

MILLBRAE

2020 Urban Water Management Plan

PREPARED FOR THE CITY OF MILLBRAE

MAY 2021

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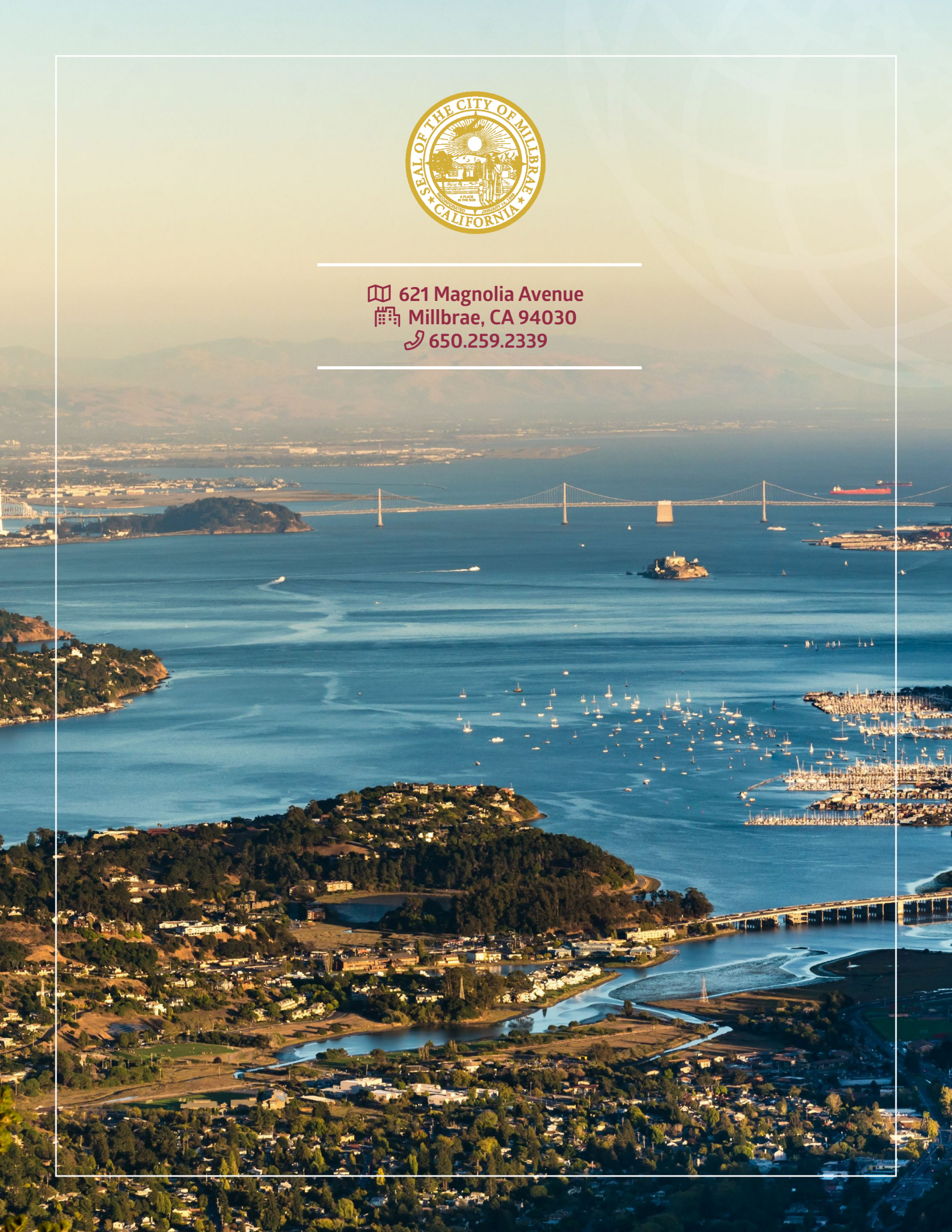


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Key Acronyms and Abbreviations

ABAG	Association of Bay Area Governments		HCD	State Department of Housing and Community Development
AB 1414	Assembly Bill 1414		HET	High efficiency toilet
AB 1668	Assembly Bill 1668		ISA	Interim Supply Allocation
ACDD	Alameda Creek Diversion Dam		ISG	Individual Supply Guarantee
Act	Urban Water Management Plan Act		ISL	Interim Supply Limitation
ACWD	Alameda County Water District		IWSAP	Interim Water Shortage Allocation Plan
AFY	Acre-feet per year		LOS	Level of Service
AWWA	American Water Works Association		MCTV	Millbrae Community Television
AWSP	Alternative Water Supply Planning Program		MFR	Multi-Family Residential
BAIRWMP	Bay Area Integrated Regional Water Management Plan		MID	Modesto Irrigation District
BARR	Bay Area Regional Reliability Partnership		MGD	Million gallons per day
BART	Bay Area Regional Transportation		MG	Million gallons
BAWSCA	Bay Area Water Supply and Conservation Agency		MGY	Million gallons per year
BAWSCA Strategy	Long-Term Reliable Water Supply Strategy		MSASP	Millbrae Station Area Specific Plan Update
Bay-Delta Plan	Bay-Delta Plan Phase 1		MG	Million gallons
BMP	Best Management Practice		MGY	Million gallons per year
CEQA	California Environmental Quality Act		MSASP	Millbrae Station Area Specific Plan Update
CCF	100 Cubic Feet		MOU	Memorandum of Understanding
CCR	Consumer Confidence Reports		NOP	Notice of Preparation
CCWD	Contra Costa Water District		PEIR	Programmatic Environmental Impact Report
CII	Commercial, Industrial and Institutional		PG&E	Pacific Gas and Electric Company
CIP	Capital Improvement Program		RWS	Regional Water System
City	City of Millbrae		RHNA	Regional Housing Needs Allocation
COG	Regional Council of Governments		SB 606	Senate Bill 606
Commission	SFPUC's five member governing commission		SBX7-7	Water Conservation Act of 2009
CUWCC	California Urban Water Conservation Council		SFO	San Francisco International Airport
CWC	California Water Code		SCADA	Supervisory Control and Data Acquisition
Demand Study	Regional Water Demand and Conservation Projections		SFPUC	San Francisco Public Utilities Commission
DMM	Demand Management Measure		SFR	Single Family Residential
DOF	California Department of Finance		SWRCB	State Water Resources Control Board
DPH	California Department of Public Health		TID	Turlock Irrigation District
DRA	Drought Risk Assessment		TOD	Transit-Oriented Development
DSS Model	Demand Side Management Least Cost Planning Decision Support System		UACFG	Upper Alameda Creek Filter Gallery
DWR	Department of Water Resources		UWMP	Urban Water Management Plan
EBMUD	East Bay Municipal Utility District		Valley Water	Santa Clara Valley Water District
EIR	Environmental Impact Report		WCIP	Water Conservation Implementation Plan
ETo	Evapo-transpiration of common turf grass		WPCP	Water Pollution Control Plant
ETWU	Estimated Total Water Use		WSA	Water Supply Assessment
FY	Fiscal Year		WSAP	Water Shortage Allocation Plan
FEMA	Federal Emergency Management Agency		WSCP	Water Shortage Contingency Plan
GPCD	gallons per capita per day		WSIP	Water System Improvement Program
GPF	Gallons per flush		WQD	Water Quality Division
GPM	Gallons per minute			

Executive Summary (Lay Description)

Purpose and Overview and Plan Preparation

In 1983 the Urban Water Management Plan Act (Act) came into existence, which requires all water suppliers designated as urban water suppliers to legally participate in water resources planning. An urban water supplier, as defined in the California Water Code (CWC), is one that supplies water to either 3,000 customers or supplies a total annual volume in excess of 3,000 acre-feet per year. As of the fiscal year 2020, the City of Millbrae supplied water to 6,591 municipal water connections, and therefore the City is required to complete an Urban Water Management Plan (UWMP).

To assist in the development of UWMP's, and to ensure that water suppliers can address all requirements as set forth in the CWC, the California Department of Water Resources (DWR) has developed the *2020 Urban Water Management Plans Guidebook for Urban Water Suppliers*. The guidebook presents a recommended structure for agencies to complete their UWMP, which is the structure used in this report. The outline is shown in Figure ES-1 below.

1. Introduction and Overview
2. Plan Preparation
3. System Description
4. System Water Use
5. Baselines and Targets
6. System Supplies
7. Water System Reliability
8. Water Shortage Contingency Planning
9. Demand Managment Measures
10. Plan Adoption, Submittal, and Implementation

Figure ES-1. 2020 Urban Water Management Plan Outline.

System Description

The City of Millbrae is located on the San Francisco peninsula approximately 15 miles south of downtown San Francisco. The City is located adjacent to the San Francisco International Airport. The City operates a municipal water system, with the boundaries of the service area coterminous with the City limits. The City has a mild Mediterranean climate, with annual average precipitation approximately 20 inches and an annual average temperature of 65 degrees Fahrenheit.



Figure ES-2. City of Millbrae vicinity map.

The City is essentially built out, with the expectation of a handful of development and redevelopment projects that have been planned in the vicinity of the City's Bay Area Regional Transportation (BART) train station (part of the Millbrae Station Area Specific Plan). As a result, the City's population is projected to

increase at a relatively steady pace as shown below (ABAG, 2017).[1]

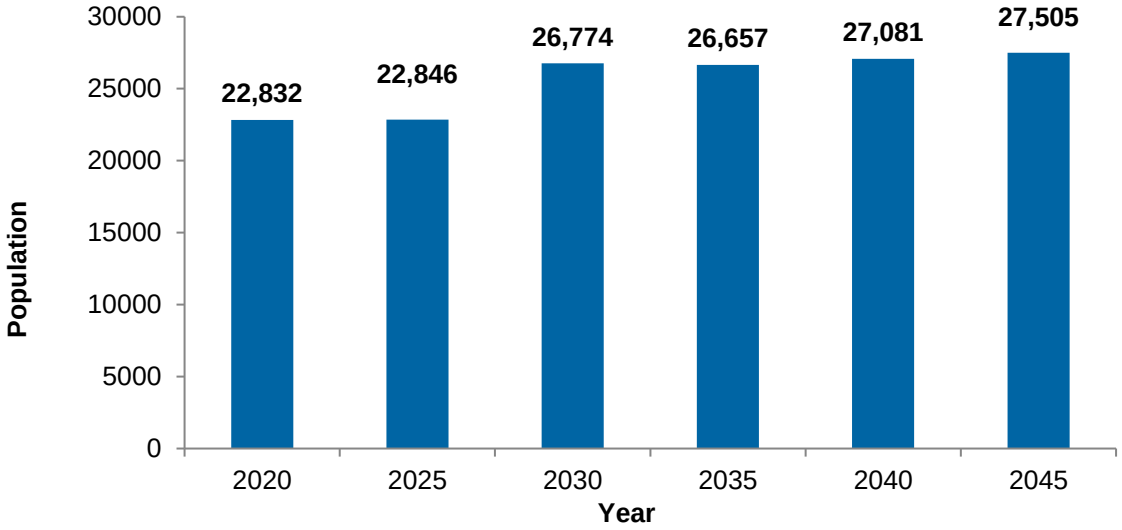
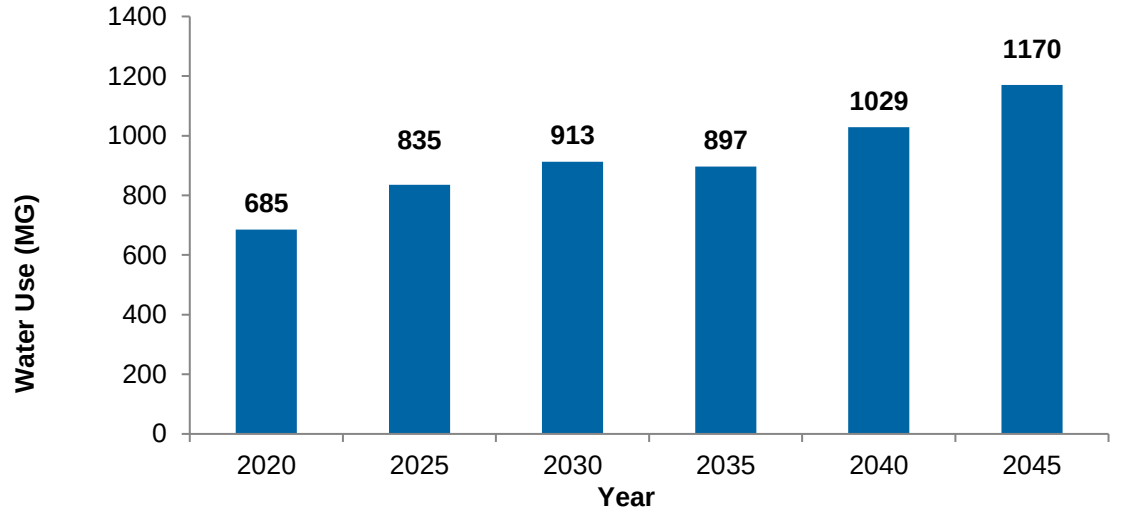


Figure ES-3. City's current and projected population (ABAG, 2017).

System Water Use

In general the City has experienced declining water demands over the past 10 years. This is likely due to a number of factors, including advances in water use efficiency, increased conservation awareness, periodic economic hardship, and drought regulations. Over the past 5 years average annual demand has been approximately 636 million gallons (MG). The lowest demand during this period occurred during fiscal year (FY) 2016, with a total demand of 583 MG. Based on the population projections presented above and the City's planned active and passive conservation measures, the water demand projections for the City through 2045 are shown in Figure ES-4.



[1] Due to the timing of the 2020 UWMP, the City is using ABAG population projections from Plan Bay Area 2017. An update to Plan Bay Area is underway and the City will incorporate the new population projections from the update for future planning.

Figure ES-4. Actual and projected water demands (MG) for the City (BAWSCA, 2020).

The City's water use projections incorporate the effect of passive conservation measures, which include updated building codes and natural fixture replacement, and planned active conservation measures, including the following:

- School education and outreach;
- Water loss control program;
- High efficiency water fixture rebates;
- Landscape water budgets; and
- Water sense fixture giveaways.

Water use in the City is primarily residential, with smaller but sizable demand contributions coming from commercial and landscape uses (Figure ES-5). System water losses have generally declined over the past 5 years, with a low of 52 MG in FY 2020.

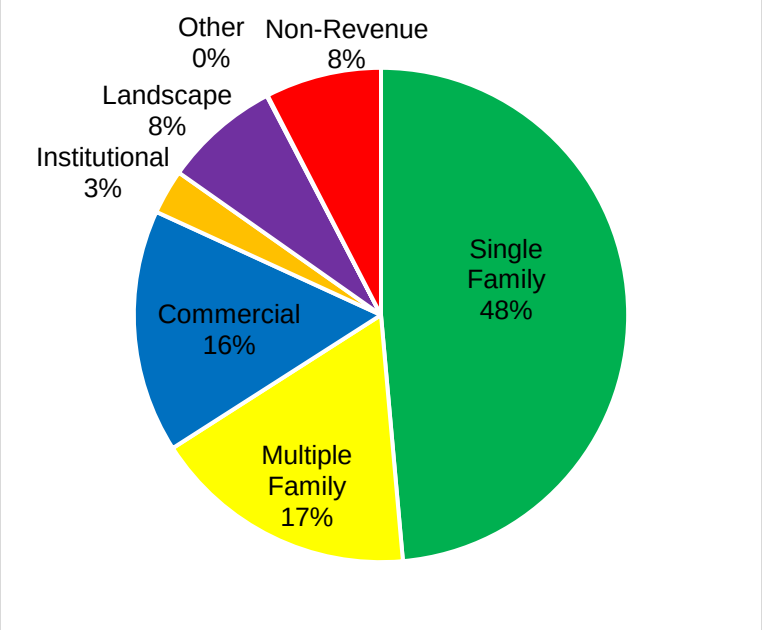


Figure ES-5. Percent water use by meter type.

Baselines and Targets

Pursuant to Senate Bill X7-7, which was passed in 2009, the City was required to reduce its overall water use per person (gross per capita water use) by 20% by the year 2020. The City's baseline water use for setting its 2020 reduction target was calculated using a methodology developed by the Department of Water Resources (DWR). As shown in Figure ES-6, the City achieved and surpassed this target, with a gross per capita water use in FY 2020 fiscal year of 82 GPCD, well below its target of 117 GPCD.

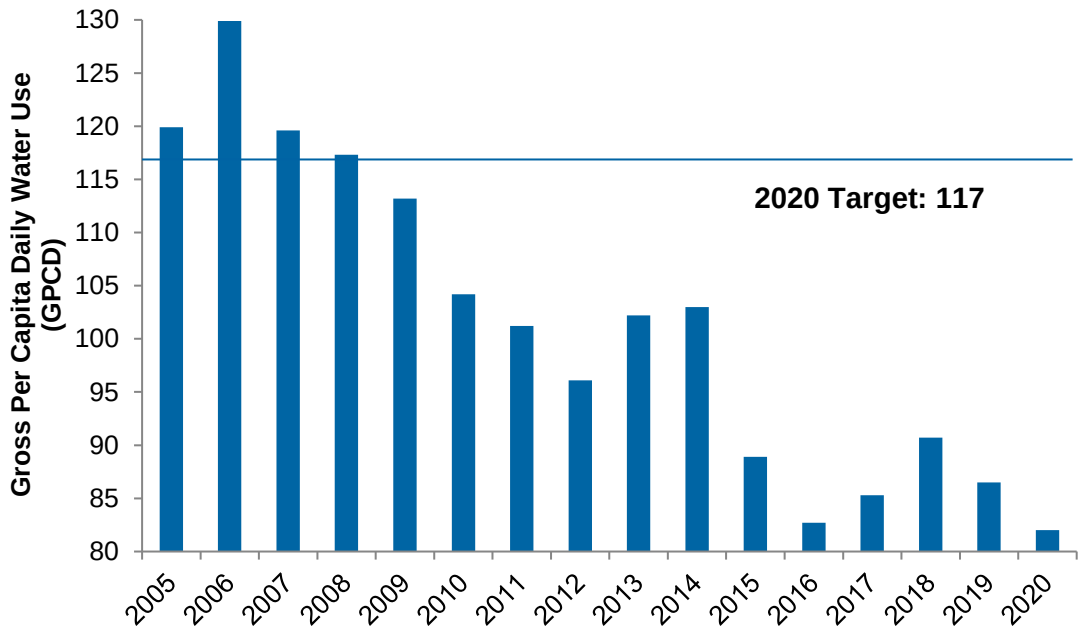


Figure ES-6. Past, and current gross per capita water use (GPCD).

System Supplies

Due to a number of geographical and economic constraints, the City does not produce any potable water from within the City service area. Like many of the cities in the greater San Francisco Bay area, the City purchases its entire potable water supply from the Regional Water System (RWS), operated by the San Francisco Public Utilities Commission (SFPUC).

The City is a member of the Bay Area Water Supply and Conservation Agency (BAWSCA), an agency that represents the interests of the 26 total agencies that purchase water at a wholesale level from the SFPUC RWS. BAWSCA has the authority to represent the agencies on issues pertaining to water supply and conservation throughout the region.

The total annual water supply available to the City is set forth in the Water Supply Agreement and subsequent Water Sales Contract, agreed upon between the City and the SFPUC (among other parties). During normal water years, the City's Individual Supply Guarantee (ISG) is 3.15 million gallons per day (MGD), which corresponds to an annual volume of 1,150 MG.

The City takes advantage of recycled water at the Water Pollution Control Plant (WPCP) operated by the City. Currently, uses are restricted to washing and maintenance activities at the plant, and are not included in reported supplies. The City has identified the opportunity for additional recycled water use; however, at this time these plans do not include a projected volume.

Water System Reliability

The City is solely dependent on drinking water from the RWS operated by the SFPUC. As such, the reliability of the City's water supply is directly related to the reliability of the RWS, which is impacted by multiple factors such as climate change and regulatory changes. In particular, 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. If the Bay-Delta Plan Amendment is implemented, the SFPUC would experience supply shortages of greater than 20% in single dry years or multiple dry years.

The availability of supply to the City during times of drought or other water shortage is outlined in the Water Shortage Allocation Plan (WSAP), which is composed of the following two components:

1. Tier One Plan: Allocates water between SFPUC and the wholesale customers of the RWS; and
2. Tier Two Plan: Allocates the collective wholesale water share between each wholesale customer.

Specifically, the Tier Two Plan allocates water to each wholesale customer based on an allocation factor, or percent of total available supply. Subsequently, the available water supply during a single dry year or multiple year drought are determined.

The Tier One and Tier Two Plans will be used to allocate water from the RWS between retail and wholesale customers during system-wide shortages of 20% or less. For the purposes of the 2020 UWMP, it is assumed that drought cutbacks among SFPUC wholesale customers will be equivalent (e.g. same cutback percentage to each wholesale customer) during RWS shortages in excess of 20%. However, in an actual shortage in excess of 20%, wholesale customers would have the opportunity to develop and agree upon a

more nuanced and equitable approach. Table ES-1 below shows the water supply available to the City in a multi-year shortage compared to the City's projected demands.

Table ES-1. Consecutive dry year supply and demand comparison (MG).

		2025	2030	2035	2040	2045
First year	Supply totals	533	580	569	653	635
	Demand totals	835	913	896	1,029	1,170
	Difference	(302)	(333)	(327)	(376)	(535)
Second year	Supply totals	456	500	489	558	635
	Demand totals	835	913	896	1,029	1,170
	Difference	(379)	(413)	(407)	(471)	(535)
Third year	Supply totals	456	500	489	558	635
	Demand totals	835	913	896	1,029	1,170
	Difference	(379)	(413)	(407)	(471)	(535)
Fourth year	Supply totals	456	500	489	493	540
	Demand totals	835	913	896	1,029	1,170
	Difference	(379)	(413)	(407)	(536)	(630)
Fifth year	Supply totals	456	500	445	493	540
	Demand totals	835	913	896	1,029	1,170
	Difference	(379)	(413)	(451)	(536)	(630)

As shown, implementation of the Bay-Delta Plan Amendment would significantly decrease the available water supplies to the City in dry year beginning as early as 2023, with shortages of up to 630 MG (54%) in years 4 and 5 of a multiple year drought beginning in 2045.

Water Shortage Contingency Planning

The City has a Water Shortage Contingency Plan (WSCP) to help guide the City in policy and decision-making during times of water shortage. The demand reduction strategy outlined by the plan is a six-stage approach, based on the supply deficiencies shown below. The City added an additional shortage level in the 2021 WSCP update to align with DWR standard shortage levels. Figure ES-7 demonstrates how the City's shortage levels align with DWR levels.

Stage	Water Shortage Magnitude	Stage Title
1	0-5%	Water Shortage Alert
2	6-15%	Water Shortage Warning
3	16-25%	Water Shortage Emergency
4	26-35%	Severe Water Shortage Emergency
5	36-50%	Critical Water Shortage Emergency
6	>50%	Water Shortage Disaster

2020 WSCP Level	Shortage Level
1	<10%
2	10-20%
3	20-30%
4	30-40%
5	40-50%
6	>50%

Figure ES-7. City's shortage level alignment with DWR standard levels

Contained within each of the City's water shortage stages is the following information:

- An overview of the response;
- A discussion of the key issues involved in that stage;
- A prepared public message; and
- A list of recommended restrictions and prohibitions on end uses, communication strategies, and operating actions to reduce municipal demand.

As noted above, each stage contains a number of mandatory prohibitions on water end use, including:

- Prohibiting water use to wash hard surfaces, including sidewalks, driveways, and patios;
- Limit irrigation times and days;
- Restaurants may only serve water upon request;
- Accelerated leak repair scheduling;
- Prohibit turf installation in new development; and
- Prohibit onsite vehicle washing.

An often-overlooked consequence of implementing demand reduction measures is the subsequent loss in water sales revenue. To estimate the possible effect of reduced water sales on the City's water system revenue, the following chart has been developed.

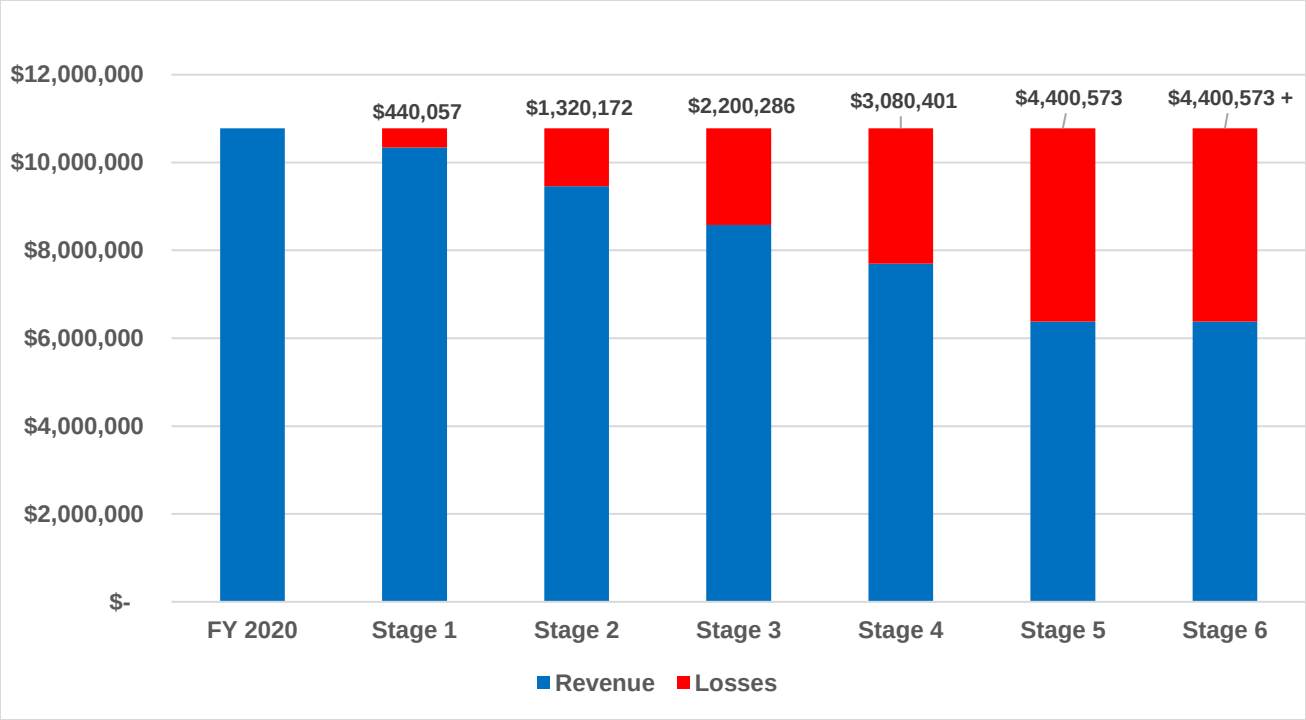


Figure ES-8. Estimated revenue losses associated with each water shortage stage.

The chart above is based solely on water sales; there are other factors that could act to increase revenue, such as penalty fees, and some factors that could further reduce revenue, such as an increased need for staffing.

Demand Management Measures

The City maintains a comprehensive water conservation program, which includes a host of Demand Management Measures (DMMs) implemented by the City to improve water use efficiency. A listing of these DMMs is shown below.

Table ES-2. Summary of City Demand Management Measures.

Demand Management Measure	Description/Components
Water Waste Prevention Ordinances	• City's Water Conservation Ordinance Title 8, Chapter 45 and CALGreen building codes
Metering	• All City water customers are currently metered • City has a meter testing, repair, and replacement program
Conservation Pricing	• City currently uses uniform rates for water usage • The City has a tiered excess use water rate structure outlined in the Water Shortage Contingency Plan during times of extreme shortage
Public Education and Outreach	• Displays at Millbrae Public Library and City Hall

	• Articles in City Chamber of Commerce e-newsletter • Postings on City's website and Facebook page • Messages on customer utility bills • New resident packets about water conservation • Annual consumer confidence reports (CCR) • Classroom education outreach and programs
Programs to Assess and Manage Distribution System Losses	• City Monitors water system losses by comparing metered usage to total SFPUC purchases • The City promptly repairs leaks upon detection
Water Conservation Program and Staffing Support	• City employs an Environmental Programs Manager who oversees the water conservation program, and other support staff assist from the Public Works Department
Other Demand Management Measures	• Residential landscape education • Water-Wise landscape award program • City Facility Water Conservation Program
Residential Conservation Program	• Water efficient toilet/washer and rain barrel rebates • Indoor water use surveys • Sprinkler nozzle head program • Free water efficient devices
Commercial, Industrial, and Institutional (CII) Conservation Programs	• Water audits and free water efficient devices • Water efficient toilet and rain barrel rebates • Conservation materials for hotels and restaurants • Participation in BAWSCA's Large Landscape Conservation Program

Over the past five years, the City has implemented DMMs to remain consistent with the goal of water use efficiency and statewide demand reduction targets.

Green Building Standards	•City adopted the CALGreen Building Code in 2019
Drought Emergency Regulations	•City implemented drought emergency regulations from 2014-2017
Water Shortage Contingency Plan	•City implemented Stage 2 from 2015-2017
Municipal Operations	•From 2015-2017, the City implemented operational and maintanance changes to reduce City water use
Education and Outreach	•Over the past five years, the City has implemented the Eduction and Outreach components listed in Table ES-2
Water Savings Devices and Rebates	•Since 2015, the City has issued 7,282 water efficient devices, 121 high efficiency washer rebates, 228 high efficiency toilet rebates, and 33 rain barrel rebates

Figure ES-9. DMMs implemented over the past five years.

Plan Adoption, Submittal, and Implementation

An UWMP requires proper notification of the public and stakeholder agencies during the process. The following table summarizes the notices that were sent during the preparation of the City's 2020 UWMP.

Table ES-3. Summary of stakeholder outreach and notification.

Stakeholder	Notification Type	Date(s)
San Mateo County Daily Journal (Public)	Notice of UWMP preparation, time and location of public hearing	February 6, 2021, May 13th and 20th 2021
San Mateo County Public Works Dept.	Notice of UWMP preparation, time and location of public hearing	February 4, 2021, May 13, 2021
Tuolumne River Trust	Notice of UWMP preparation, time and location of public hearing	February 4, 2021, May 13, 2021
BAWSCA	Notice of UWMP preparation, time and location of public hearing	February 1, 2021, May 13, 2021
City Website/Facebook (Public)	Notice of UWMP preparation, time and location of public hearing	April 13, 2021

The City is holding a public hearing to discuss and adopt the UWMP on May 25, 2021. Subsequently, the UWMP and associated data in the DWR standard tables will be submitted to the DWR via the WUEData submittal tool prior to July 1, 2021.

1. Introduction and Overview

This section provides context and purpose to this report with a discussion of the Urban Water Management Plan Act, an overview of this document, and a presentation of relevant changes to the California Water Code since the last update of the City of Millbrae's (City) Urban Water Management Plan (UWMP) in 2015.

1.1 Purpose

Water resource planning is an essential component in managing successful and sustainable communities and developments now and in the future. The Urban Water Management Plan Act (Act) of 1983, and all subsequent amendments to the California Water Code, have been enacted to help ensure that all urban water delivery agencies, both wholesale and retail, are conducting the long-term planning that is necessary for successful development and resource management. In general, the Act was established so that water suppliers report, describe, and evaluate:

- Water demand and uses for a 20-year planning period;
- How the identified demand will be met over the same planning period, during normal, single dry, and multiple dry year types;
- Water planning coordination with fellow stakeholder agencies and the public;
- Efficient water uses, demand management measures, and water system losses; and
- Water shortage contingency planning.

In addition to the Act, a subsequent bill was passed in 2009, the Water Conservation Act (SB X7-7), with the goal of reducing water consumption in California by 20% by the year 2020. This legislation introduced new requirements for UWMPs beginning in the year 2010, including:

- Calculating baseline gross water demand in units of gallons per capita per day (GPCD) using a 10- or 15-year base usage period;
- Calculating a target reduction from the baseline demands using one of four methodologies;
- Verifying reduction target goal using a five-year baseline usage period, calculated in GPCD; and
- Setting the reduction gross per capita water use target for 2020.

This 2020 UWMP update addresses the necessary issues of water management as noted above, as well as others required in the California Water Code (CWC). The subsections below outline how the requirements are presented in this document.

1.2 2020 UWMP Overview

To ensure consistency with the requirements of the CWC, this document uses the suggested format of the *2020 Urban Water Management Plans Guidebook for Urban Water Suppliers* from the Department of Water Resources (DWR), with some additional inclusions that are specifically relevant to the City. As a component of this outline, many of the tables used in this report are the same as the standardized tables as part of the 2020 UWMP requirements; these same tables are also submitted separately to the DWR through the WUEdata online submission tool. The outline of this report is presented in Table 1-1 below.

Table 1-1. 2020 UWMP document outline.

Section Number	Section Title	Description
1	Introduction and Overview	A brief discussion of the UWMP process and requirements, a document outline, and presentation of changes to the CWC since 2015.
2	Plan Preparation	Provides information on the UWMP process used for the City of Millbrae's 2020 UWMP update.
3	System Description	Describes water suppliers' water system and service area, including service boundary maps, population projections, and local climate.
4	System Water Use	A description and quantification of the City's current and projected water use.
5	Baseline and Targets	A description of the method used to comply with the water use reduction targets mandated by SB X7-7, and a discussion on meeting the 2020 target water use goal.
6	System Supplies	Describes and quantifies the current and projected water supply available to the City.
7	Water Supply Reliability	Describes the reliability of the water supply for the 20-year projection period. Reliability is assessed for normal, single-dry, and five consecutive dry water years.
8	Water Shortage Contingency Planning	Provides and describes the City's current Water Shortage Contingency Plan.
9	Demand Management Measures	Communicates the past, present, and current efforts to promote water conservation and meet the demand reduction goals of SB X7-7.
10	Plan Adoption, Submittal, and Implementation	A description of the steps taken to adopt and submit the final UWMP to the DWR. Also includes information on public availability and the City's plan to implement the UWMP.

In addition to the general outline shown above, the DWR has developed a checklist for each section to ensure that all components of the CWC are covered in the report. This checklist, with the location each item is addressed in this report, can be found in Appendix A.

1.3 Recent Changes to Water Code

Changes to the CWC over the past five years have resulted in additional requirements for the preparation of the 2020 UWMP. These additional requirements are listed below.

Table 1-2. Changes to water code since 2015 UWMP reporting (DWR, 2020).

Topic	CWC Section	Legislative Bill	Summary
Water Supply and Demand Assessment	10635.(a)	SB 606, 2018	Requires water supply and demand assessment to project for a normal water year, a single dry water year, and a drought lasting five consecutive water years.
Annual Water Supply and Demand Assessment	10632.1	AB 1414, 2019	Requires water suppliers conduct an annual water supply and demand assessment on or before July 1 of each year, starting 2022.
Drought Risk Assessment	10635.(b)	SB 606, 2018	Requires that water suppliers must include as part of its UWMP, a drought risk assessment. The drought risk assessment shall include a comparison of the total water supply sources available to the water supplier with the total projected water use for the drought period and 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.
Seismic Risk Assessment	10632.5.(a)	SB 606, 2018	Requires that the Water Shortage Contingency Plan (WSCP) include a seismic risk assessment and mitigation plan.
Water Shortage Contingency Plan	10632.(a)(1), (a)(2), (a)(3)(A), (a)(4), (a)(5), (a)(9), and (a)(10)	SB 606, 2018	Require that the WSCP include the following elements: Six standard shortage levels, locally appropriate “shortage response actions”, procedures for conducting an annual water supply and demand assessment, communication protocols and procedures, monitoring and reporting procedures, and a re-evaluation and improvement process for the WSCP.

Coordination with Local or Regional Use Authorities	10631.(a)	AB 1414, 2019	Requires that water suppliers coordinate with local or regional land use authorities to determine the most appropriate land use information for projecting water use.
Energy Intensity	10631.2.(a)	SB 606, 2018	Water suppliers must include information that can be used to calculate the energy intensity of their water service, based on information readily available.
Lay Description	10630.5	SB 606, 2018	Water suppliers shall provide a simple lay description of their projected water use for the foreseeable future.

1.4 Other Planning Efforts

This UWMP was prepared in coordination with the City's update to its WSCP The two documents have been updated in parallel to maximize the utility and relevancy of the information and projections contained in each report. Further information on the City's WSCP can be found in Section 8 of this report.

2. Plan Preparation

This section demonstrates the applicability of the Act to the City. Specific items of interest in this section include the City's selection of an individual UWMP and how the City has and plans to coordinate with both fellow stakeholder agencies and the public.

2.1 Basis for Preparing a Plan

In California, if a municipal water agency is categorized as an urban water supplier, then the agency must prepare an UWMP every five years in accordance with the Act. The CWC Section 10617, defines an urban water supplier as any supplier, whether publicly or privately owned, that provides water for municipal purposes to more than 3,000 customers or supplies an annual volume at or in excess of 3,000 acre-feet (AF) (978 million gallons [MG]). The number of municipal connections and the volume of water supplied by the City at the end of the fiscal year 2020 are shown in Table 2-1 below.

Table 2-1. Public water system information.

Public Water System Number	Public Water System Name	Number of Municipal Connections 2020	Volume of Water Purchased 2020 (MG)	Volume of Water Purchased 2020 (CCF)
4110018	City of Millbrae	6,591	685	915,448
TOTAL		6,591	685	915,448
NOTES: UWMP Guidebook Table 2-1.				

As shown in Table 2-1, the City supplies water to more than 3,000 total municipal connections; therefore, the City is an urban water supplier. The City shall in accordance with the CWC complete an update to their UWMP.

2.2 Regional Planning

Similar to many other planning documents, an UWMP can be addressed on a regional level as opposed to an individual agency level as long as all requirements of the CWC are satisfied. Agencies that choose to engage in regional reporting can either participate in a Regional Urban Water Management Plan (RUWMP) or a Regional Alliance. In a RUWMP, agencies combine to produce an UWMP that contains data for each individual agency. As part of a RUWMP, the agencies may choose to report on the water use reduction targets of SB X7-7 on an individual level, or form a Regional Alliance wherein a group of agencies sets a common water use reduction target for the region. It should be noted that a regional alliance can exist whether or not an agency chooses to take place in a RUWMP.

2.3 Individual or Regional Planning Compliance

The City of Millbrae has completed an individual UWMP to fulfill the requirements of the CWC (Table 2-2). Additionally, the City will report on the requirements of SB X7-7 on an individual agency level.

Table 2-2. UWMP preparation type.

Plan Identification		
☑	Individual UWMP	
☐	Regional UWMP (RUWMP)	
	Select One:	
	☐	RUWMP includes a Regional Alliance
	☐	RUWMP does not include a Regional Alliance
NOTES: UWMP Guidebook Table 2-2.		

2.4 Fiscal or Calendar Year and Units of Measure

For consistency with DWR requirements, the primary unit of measure for water volumes is million gallons (MG). However, some select tables throughout the plan include the units of 100-cubic feet (CCF), which are the billing units the City uses. The reporting years align with the City's fiscal year, which begins on July 1st. See

Table 2-3 below for a summary of this information.

Table 2-3. Agency identification.

Type of Agency	
☐	Agency is a wholesaler
☑	Agency is a retailer
Fiscal or Calendar Year	
☐	UWMP Tables Are in Calendar Years
☑	UWMP Tables Are in Fiscal Years
If Using Fiscal Years Provide Month and Day that the Fiscal Year Begins (mm/dd)	
07/01	
Units of Measure Used in UWMP	
Unit	MG
NOTES: UWMP Guidebook Table 2-3	

2.5 Coordination and Outreach

2.5.1 Agency Coordination

The 2020 UWMP has been prepared under the supervision of the Public Works Department. The Department has also coordinated with other agencies throughout the process, including the Bay Area Water Supply and Conservation Agency (BAWSCA) and San Francisco Public Utilities Commission (SFPUC). Public participation has been encouraged throughout the process, with efforts including making draft and final versions of the report available for public review. The following table summarizes the agency and public coordination efforts that have been undertaken by the City during this process.

Table 2-4. Summary of UWMP preparation outreach coordination.

Agency	Participated in UWMP Development	Received Copy of Draft	Comment on Draft	Attended Public Meetings	Contacted for Assistance	Sent Notice of Intent to Adopt
BAWSCA	X	X			X	X
Millbrae City Council	X	X		X		X
City of Millbrae Public Works Dept.	X	X		X		X
Public Library		X				X
SFPUC		X			X	X
San Mateo County		X				X

2.5.2 Public Participation and Outreach

The CWC recommends that water agencies encourage active participation from a diverse social, cultural, and economic representation of the service area. During the 2020 UWMP update process, the City actively conducted public outreach through a variety of methods, and provided information on the preparation of the Plan and Public Hearing.

Notifications regarding the preparation of the UWMP and the call for participation were also made targeting the public. Publications and print media outreach occurred through the following:

1. San Mateo Daily Journal (notice posted 2/6/2021)
2. Utility Bill Messages, May 2021
3. Millbrae Library E-Newsletter, May 2021
4. City Hall Display Windows, May 2021

The City also used electronic publications for the notice of preparation for the UWMP. This included an ad on the local cable TV station, MCTV Channel 27, and the posting of all information on the City's website (www.ci.millbrae.ca.us).

The San Mateo County Daily Journal (local newspaper) published a UWMP preparation notice dated February 6, 2021. Public plan preparation notices will also be published in the newspaper on May 13th and May 20th, 2021. As required, Plan preparation notices, public hearing notices, and draft UWMP notices were also sent to BAWSCA, the Tuolumne River Trust, and the San Mateo County Public Works Director.

Coordination between the City and other stakeholders has occurred throughout the UWMP update process. Notifications regarding the preparation of the UWMP were sent to the following agencies/stakeholders:

1. Millbrae Public Library
2. School District Superintendent
3. Peninsula Chinese Business Association
4. Tuolumne River Trust
5. City Committees and Commissions including
    I. Community Preservation Commission
    II. Planning Commission
    III. Cultural Arts Commission
    IV. Parks and Recreation Commission
    V. Senior Advisory Commission
    VI. Downtown Process Committee
    VII. Mayor's Civic Coordinating Council
    VIII. Youth Advisory Committee

Table 2-5 below presents a brief summary of the outreach and timeline that has occurred in order to comply with the CWC. Copies of all public hearing notices can be found in Appendix B, and further information on this topic can be found in Section 10.

Table 2-5. Summary of public participation timeline.

Date	Event	Description
April 13, 2021	Public notification of plan preparation	Describe UWMP requirements and process
May 13, 2021	Public review and comment	Release Draft UWMP and solicit input
May 25, 2021	City Council Meeting	Presentation of Final Draft UWMP
May 25, 2021	Public Hearing	UWMP considered for adoption by the City Council

2.5.3 Coordination with Water Wholesaler

In addition to coordination with stakeholder agencies, governmental organizations, and citizens, the City has coordinated with its water wholesaler, the SFPUC (Table 2-6). Pursuant to CWC 10631, the City has informed the wholesaler of its projected demands over the next 25 years, reported in five-year increments.

Table 2-6. Water supplier and wholesaler information exchange.

Wholesale Water Supplier Name*:*
San Francisco Public Utilities Commission
NOTES: UWMP Guidebook Table 2-4.

2.5.4 Notice to Cities and Counties

Consistent with CWC section 10621(b), the City notified the County of San Mateo about the 2020 UWMP update process. A copy of the notification can be found in Section 10.

3. System Description

This section provides an overview of the City's service area and municipal water system. To provide a clear picture of the circumstances that are unique to the City, the discussion includes a description of the City's water and wastewater system, service area boundary, local climate, and an overview of population, demographic factors, and land uses.

3.1 General Description

3.1.1 Location

The City is located on the San Francisco peninsula, approximately 15 miles south of San Francisco and directly west of San Francisco Airport (SFO). See Figure 1 for a vicinity map showing the City's location. The City is located in San Mateo County.

The City covers an area of approximately 3.25 square miles and is bordered to the west by Highway 280, the east by Highway 101. The city limits are coterminous with the City of San Bruno to the north and the City of Burlingame to the south.

The eastern portion of the City is located on relatively flat terrain with an average elevation of approximately 40 feet. Moving west through the City towards the Highway 280 boundary, the slope of the terrain increases significantly to an elevation of approximately 500 feet at the north city limits and 600 feet to the south city limits.

3.1.2 Potable Water System

The City purchases its water from the SFPUC's Regional Water System (RWS). The source water for SFPUC is primarily from the Hetch Hetchy water system, with some additional surface water contributions coming from Alameda County and San Francisco Peninsula. Further information on the SFPUC's RWS can be found in Section 6.

The City receives water through 5 connections to the RWS and distributes it to customers through approximately 76.1 miles of domestic water mains. The water distribution system boundary is coterminous within the City limits and consists of the following components:

- 450 fire hydrants;
- 1,500 valves (including hydrant and line valves);
- 11 pressure reducing stations;
- 6 water storage tanks (total storage capacity of approximately 2.1 MG);
- 2 water pump stations; and
- 6,611 service connections.

3.1.3 Wastewater System

The City operates a Water Pollution Control Plant (WPCP), which treats wastewater generated within the service area boundary. The plant is located on the eastern edge of the City limits, adjacent to Highway 101 and near San Francisco Bay (Figure 1). Wastewater reaches the WPCP through a network of approximately 57 miles of sanitary sewer lines, which are primarily under gravity flow conditions. The City also operates

three sanitary sewer pumping stations. The WPCP is designed for a dry-weather operation of 3 million gallons per day (MGD), with a wet-weather peak capacity of 9 MGD. The City disposes of its treated effluent through a force main into San Francisco Bay.

3.2 Service Area Boundary Maps

The municipal water service area for the City of Millbrae water system is shown in Figure 1. The boundaries of the City's water system service area are coterminous with the City limits.



Figure 1. City of Millbrae Vicinity Map.

3.3 Service Area Climate

The City is located on the Central Pacific west coast of California, which is generally characterized by a Mediterranean climate. The wet season typically occurs between October and May, with little-to-no precipitation occurring during the summer months. Annual average precipitation is approximately 20 inches and the annual average maximum temperature is 65.2 degrees Fahrenheit, as shown in Table 3-1.

Table 3-1. Average climate data for Millbrae area.

Month	Monthly Average Reference ETo (inches)[1]	Average Monthly Rainfall (inches)[2]	Average Maximum Temperature (Fahrenheit)[2]
January	1.86	4.31	55.8
February	2.24	3.58	59.1
March	3.41	2.88	61.2
April	4.80	1.38	63.8
May	5.27	0.39	66.7
June	5.70	0.13	70.0
July	5.58	0.02	71.4
August	5.27	0.04	72.0
September	4.20	0.17	73.4
October	3.41	1.00	70.2
November	2.40	2.31	62.9
December	1.86	3.73	56.4
Total	46.3	19.94	65.2

[1]ETo data from Reference ETO Zone 3 retrieved on September 17th, 2020 from http://www.cimis.water.ca.gov/App_Themes/images/etozonemap.jpg

[2]Temperature and precipitation data from the Western Regional Climate Center, reported from the SFO station for the period of record 07/1945 – 06/2016. Retrieved on September 17th, 2020 from <http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca7769>

3.4 Climate Change

Climate change is an issue of growing concern and awareness for water agencies around the world. In California, which recently experienced a historic drought, agencies have experienced first-hand how large a role climate plays in all facets of water management.

Some potential climate change effects that have been identified in California include increased average temperatures, decreased snowpack, earlier snow melts, sea level rise, and more intense precipitation events. To characterize some of the potential impacts and vulnerabilities that may be of issue to the City, the *Climate Change Vulnerability Assessment,* which is included in Appendix I of the DWR 2020 UWMP Guidebook Document, was performed for the City. Some of the specific vulnerabilities relevant to the City include:

- Water source vulnerability (snowmelt from the Sierra Nevada supply the SFPUC RWS);
- Water availability for outdoor use due to decreased supplies;
- Coastal structures and infrastructure vulnerable to sea level rise;
- Flooding (portions of the City are in the FEMA 100- and 500-year floodplain); and
- Increased fire risk.

The potential effects of climate change will have an impact on water supply, demand, and source reliability as time moves forward. Further discussions on these topics can be found in Section 7 of this report.

3.5 Service Area Population and Demographics

The population projections for the City are from the Association of Bay Area Governments (ABAG), which is a regional planning organization that was created to help meet the City's planning needs. These population estimates were obtained from ABAG's *Plan Bay Area 2040* data, released in 2017. [2]These estimates are also used in a recent study performed by BAWSCA, *Regional Water Demand and Conservation Projections Report (*June, 2020), discussed in further detail in subsequent sections. The current estimated population of the City is 22,832 residents. The population projections for the years 2020 through 2045, reported in five-year increments, are shown in Table 3-2 below.

Table 3-2. City population, current and projected.

	2020	2025	2030	2035	2040	2045
Population Served	22,832	22,846	26,774	26,657	27,081	27,505

NOTES: UWMP Guidebook Table 3-1. 2020 population is from DOF E-5 consistent with SBX7-7 calculation requirements.

3.5.1 Socioeconomic Factors

Socioeconomic information for the City was obtained from the 2010 US Census and ABAG *Plan Bay Area 2040*. The City's population consists of approximately 43% people aged 18-64, 19% under 18, and 19% 65 or older. Of the population aged 16 or older, 64% is in the labor force. According to ABAG's projections, jobs should increase over time in Millbrae from 5,920 to 11,595. The median household income in the City is $120,565. Approximately 64% of the residents own the house they occupy with a median home value of $1,230,900. Median rent in the City is $2,320. Over 93% of residents that are 25

[2] Due to the timing of the 2020 UWMP, the City is using ABAG population projections from Plan Bay Area 2017. An update to Plan Bay Area is underway and the City will incorporate the new population projections from the update for future planning.

or older are high school graduates and approximately 52% have a bachelor's degree or higher. The most recent poverty statistics show that there is a 4.7% rate of residents in poverty.

3.5.2 Service Area Land Use

Due to the highways and cities bordering Millbrae, the City at present is essentially built out. A large portion of the population growth projected is a result of urban redevelopment, in particular the Millbrae Station Transportation Oriented Development (TOD) projects outlined in the Millbrae Station Area Specific Plan (MSASP). As part of this plan, several sites located in the vicinity of the Bay Area Rapid Transit (BART) station would be redeveloped into mixed-use areas, including an increase in residential units and hotel rooms. A summary of the three redevelopment projects as reported in the MSASP Update Final Environmental Impact Report (EIR) is shown below:

- **TOD #1:** The proposed development is comprised of 267,000 SF of office space, 32,000 SF of retail space, and 500 high- to medium-density residential units. The estimated population growth as a result of this project is 1,325 permanent residents.
- **TOD #2:** The proposed development is comprised of approximately 164,535 SF of office space, 46,935 SF of retail space, 321 high- to medium-density residential units, and 116 hotel rooms. The estimated population growth as a result of this project is 851 permanent residents.
- **Other Allocations:** Includes all of the remaining buildout potential not included in TOD 1 and 2. This includes a net increase in approximately 1,213,300 SF of office space, 101,700 SF of retail space, 617 high- to medium-density residential units, and 124 hotel rooms. The project also includes the removal of approximately 335,240 SF of industrial space, which will be redeveloped. The estimated population growth as a result of this project is 1,635 permanent residents.

These developments will result in water use implications moving forward, with a net increase in permanent population and population density. The completion of these projects would increase the total population by an estimated 3,808 permanent residents. These projected land uses are incorporated in the ABAG population projections and the associated water use requirements are incorporated in the water demand forecasts in presented Section 4.

4. System Water Use

This section presents the projected water demands that have been developed for the City by BAWSCA, presented through the year 2045 in five-year increments, as well as related information on projected demand by sector, water system losses, and projected water savings.

4.1 Regional Water Demand and Conservation Projections

In June 2020, BAWSCA completed the *Regional Water Demand and Conservation Projections Report* (Demand Study).[3] The goal of the Demand Study was to develop transparent, defensible, and uniform demand and conservation savings projections for each BAWSCA member agency (SFPUC 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.

The demand projections developed for the City of Millbrae through the Demand Study modeling study are presented in this section and incorporated throughout the report.

4.2 Historical Water Use

To provide context to the current water demand, the City's historic water purchases and metered usage were obtained for the ten years prior to 2020. Figure 2 below shows the purchases from SFPUC and the corresponding gross daily per capita water usage for the City from FY 2010 through FY 2019.

[3] BAWSCA Regional Water Demand and Conservation Projections Final Report: http://bawsca.org/uploads/pdf/BAWSCA_Regional_Water_Demand_and_Conservation%20Projections%20Report_Final.pdf

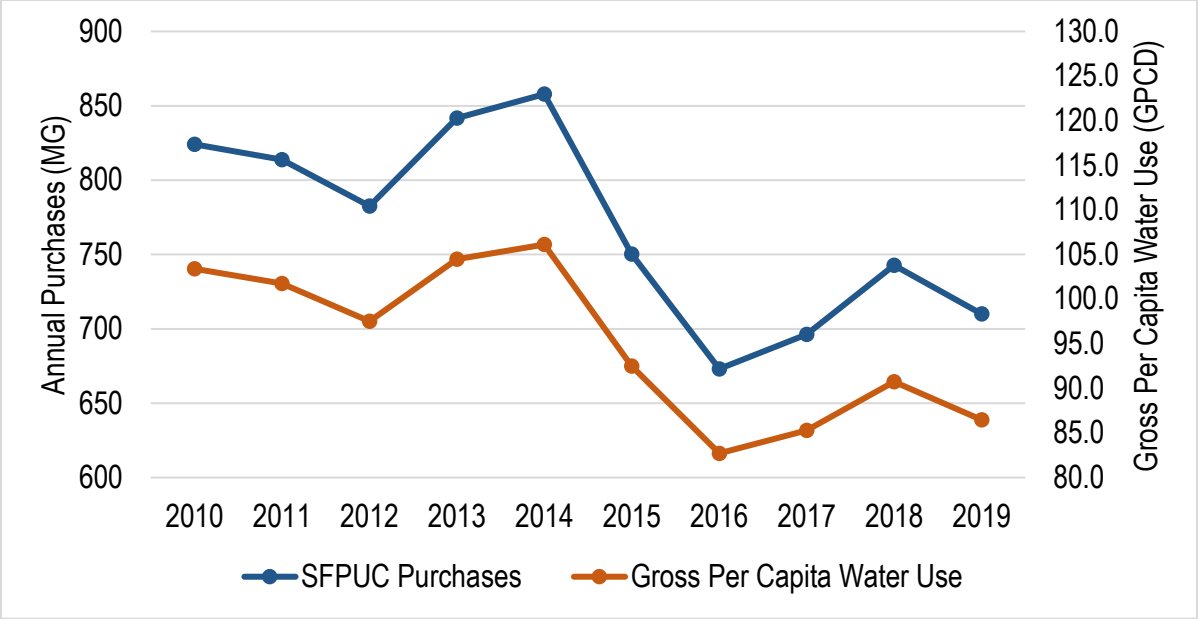


Figure 2. Water purchases from SFPUC from the years 2010-2019 (MGY).

The general trend over the past ten-years of water purchases and gross per capita water use shows a decline in average daily consumption. It is important to note that during this time period there was an economic recession (through 2012) and a major drought (2014-2016), both of which likely played an important role in decreasing demands. It should also be noted that the City's population grew by an estimated 663 residents during this time, making the decrease in total water purchases even more significant. From 2017 to 2019, increases in water use are largely associated with the end of the drought and the removal of associated water use restrictions.

4.3 Water Uses by Sector

The City collects metered water usage for a variety of use categories, including single- and multi-family, commercial, institutional, landscape, fire use, and temporary metered use. Based on the meter data from FY 2019-2020, Table 4-1 shows the total annual water demand (MG) for each measured use type.

Table 4-1. Retail demands for potable water by meter type (MG).

Use Type	2020 Actual Water Usage			
	Additional Description	Level of Treatment When Delivered	Volume (MG)	Volume (CCF)
Single Family	-	Drinking Water	333	444,659
Multi-Family	Multifamily and duplex units	Drinking Water	119	159,081
Commercial	Includes commercial, restaurants, and bars	Drinking Water	109	146,136
Industrial	-	Drinking Water	0	0
Institutional/Governmental	Includes schools, churches, and the City	Drinking Water	20	26,579
Landscape	-	Drinking Water	52	69,292
Losses	System losses from water audit	Drinking Water	52	69,184
Other	Includes temporary metered uses and fire service	Drinking Water	0.4	517
		TOTAL	685	915,448

NOTES: UWMP Guidebook Table 4-1. System losses are from the CY 2019 audit, all other usage is reported from FY 2019-20.

It should be noted that the value for system losses reported in the table above were calculated based on the American Water Works Association (AWWA) methodology discussed in Section 4.6. The total annual volume purchased from SFPUC was 685 MG, which corresponds to a daily average delivery of 1.88 MGD, approximately 60% of the City's Individual Supply Guarantee (ISG) from the SFPUC of 3.15 MGD. Comparing the 2020 water purchases to those made in the past 10-years (Figure 2), the overall trend of water use decline appears to be continuing. Consistent with the past two years, water use is anticipated to gradually increase over the next 5 years as demand continues to rebound from the drought. However, long-term trends of declining per capita water use are anticipated to continue.

One of the requirements of the CWC is to project total water demand over a 20-year period for each of the City's identified use types (i.e., Residential, Commercial, etc.). As noted previously, the demand projections used in the report were generated from the BAWSCA Demand Study (described in Section 4.1).

Table 4-2 below shows the resulting demands that were calculated for the City through this effort.

Table 4-2. BAWSCA projected demands (MG) for Millbrae using DSS model.

Year	2025	2030	2035	2040	2045
Total Demand[1]	835	913	897	1,029	1,169

[1]Demand projections include passive and active conservation measures identified by the City.

The total system demands shown above include both passive and active conservation measures, which are discussed in further detail in Section 4.6. Total water demand is defined as total water consumption plus non-revenue water. These demands are further defined based upon projected growth for each customer type. Demand projections do not include recycled water use for internal processes. Table 4-3 shows the demand by use type for the period 2025 through 2045, in five-year increments.

Table 4-3. Projected demands (MG) for potable and raw water.

Use Type	Additional Description	Projected Water Use				
		2025	2030	2035	2040	2045
Single Family	-	377	430	422	422	423
Multi-Family	Multifamily and duplex units	128	143	138	137	137
Commercial	Includes meters designated commercial, restaurants, and bars	136	133	132	213	293
Industrial	-	0	0	0	0	0
Institutional/ Governmental	Includes meters designated as schools, City of Millbrae, and churches	32	38	38	38	39
Landscape	Irrigation Uses	55	52	52	90	130
Losses	Calculated as water purchases less metered usage	106	117	114	127	145
Other	Includes temporary metered usage and fire service	1	1	1	1	2
	Total (MG)	835	913	896	1,029	1,170
	Total (CCF)	1,116,671	1,222,0695	1,198,508	1,375,505	1,563,599
NOTES: UWMP Guidebook Table 4-2.						

The total projected demands for the years 2025 to 2045 are projected to increase from 835 MG to 1,170 MG. The losses projected for each reporting year are modeled based upon historical losses as a percent of total water use, as shown in Table 4-6. Because the demands above include system losses, the totals shown above are the required volumes that would need to be purchased from SFPUC. It is important to

note that there will be some variability in usage percentages projecting into the future. As noted earlier, the largest potential developments that could occur are the Millbrae Station TOD projects, which are composed almost entirely of Commercial and Multifamily residential usage. When these projects are completed, usage percentages in the two categories would be expected to increase.

4.4 Total Retail Water Demands

The total retail water demands are equal to the potable water purchases from SFPUC. The total retail water demands for the City of Millbrae are listed in Table 4-4 below.

Table 4-4. Total water demands (MG).

	2020	2025	2030	2035	2040	2045
Potable and Raw Water	685	835	913	896	1,029	1,170
Total Demand (MG)	685	835	913	896	1,029	1,170
Total Demand (CCF)	915,775	1,116,210	1,221,166	1,198,637	1,375,975	1,562,963
NOTES: UWMP Guidebook Table 4-3.						

The City uses a constant annual volume of 9 MG of recycled water at the WPCP for washing and other maintenance activities. However, this recycled water use has not been included in the total retail water demands as the water is used for internal purposes only.

4.5 Distribution System Water Losses

Water losses were evaluated using the American Water Works Association (AWWA) methodology consistent with Water Code Section 10608.34. This method takes into account the water purchases from SFPUC versus the total metered water volumes and includes additional considerations such as unbilled metered usage and unauthorized consumption estimates. Water losses were calculated on a calendar year basis, rather than a fiscal year basis, for compliance with reporting deadlines. The total annual water loss for the City for calendar years 2015 through 2019 is presented in Table 4-5.

Table 4-5. 12-month water loss audit reporting

Reporting Period Start Date	Volume of Water Loss (MG)	Volume of Water Loss (CCF)
01/2015	85	114,491
01/2016	95	127,025
01/2017	88	117,502
01/2018	76	101,604
01/2019	52	69,184
NOTES: UWMP Guidebook Table 4-4. 2019 and 2018 value from AWWA Water Loss Audit on a calendar year basis. 2015-2017 calculated from subtracting consumption from SFPUC purchases for each year.		

4.6 Projected Water Use 2021 to 2025

Consistent with Water Code Section 10635(B), the City's characteristic five-year unconstrained water use for fiscal years 2021 through 2025 is presented in Table 4-6. These projections represent expected gross water use for the next five years without drought conditions. The projections incorporate planned active conservation and passive conservation savings for the City consistent with the Demand Study.

Table 4-6. Projected 5-year water demands.

	2021	2022	2023	2024	2025
Total Demand (MG)	715	745	775	805	835
Total Demand (CCF)	955,862	995,949	1,036,036	1,076,123	1,116,210

4.7 Estimating Future Water Savings

As noted above, the demands generated by BAWSCA that were subsequently used in this report include both active and passive water conservation measures. Passive water conservation measures are those that result in water use savings without direct financial contributions from water agencies. Most commonly, passive conservation measures result from building codes or ordinances. The passive water conservation measures included in the projected demands for the City are presented below:

1. The natural replacement of existing older plumbing fixtures and replacement with fixtures meeting new/updated plumbing codes; and
2. Installation of water-efficient fixtures in new buildings and retrofits as required under the CALGreen Building Code Standards (CCR Title 24, Part 11).
3. The Model Water Efficient Landscape Ordinance.

Active conservation measures are those that require direct financial or educational contribution from the water agency. For inclusion into the BAWSCA projected demands, each city indicated which of 25 active conservation measures they currently are or will be using in the future. The active conservation measures and anticipated water use savings used in the City's demands presented above are listed below.

Table 4-7. Active conservation measures used for City's water use projections.

Conservation Measure	Description	Anticipated Savings
CII Water Survey	Program provides free water surveys to CII customers to evaluate ways for the business to save water and money. The surveys may target large accounts (e.g., accounts that use more than 5,000 gallons of water per day) only such as hotels, restaurants, stores and schools. Emphasis may be on supporting the top 25 users for each individual water agency.	Savings of 15% per site for 0.5% of accounts annually.
Large Landscape Outdoor Water Surveys	Outdoor water audits offered for existing large landscape customers. Normally those with high water use are targeted and provided a customized report on how to save water. All large multifamily residential, CII, and public irrigators of large landscapes would be eligible for free landscape water audits upon request. Tied to the Water Budget Program.	Savings of 15% for 0.8% of accounts annually.
Large Landscape (Waterfluence) Program	Website provides feedback on irrigation water use (budget vs. actual). Current Waterfluence Program.	Savings of 30% for 5% of accounts.
Lawn Be Gone! And Rainwater Capture Rebates	Provide a per square foot incentive for to remove turf and replace with low water use plants or permeable hardscape. Landscape conversion includes conversion of turf to lower-water-using turf varieties. Rebate based on dollars per square foot removed, and capped at an upper limit for single family residence, multifamily residence and/or commercial account.	Savings of 18% over 5 years for 0.13% of accounts annually.
Residential Water-Savings Devices Giveaway	Utility provides free high efficiency showerheads, shower timers, toilet leak detection tablets, and aerators in bulk and	Savings of 6.9% for 1.25% of user accounts annually.

Conservation Measure	Description	Anticipated Savings
	gives them away at Utility office and community events.	
Flowmeter Rebate	Program provides rebates for flow measuring devices which inform customers of their water use and provide leak detection and remote shutoff with a smart phone interface. Devices are targeted to residential users and can monitor indoor only, whole site meter use, and/or irrigation only use.	Savings of 7% of total use for 0.5% of user accounts annually.
New Development Submetering	This is an existing code that, as of January 1, 2018, requires the metering of individual units in new multifamily, condos, townhouses, mobile-home parks and business centers (less than four stories and with water heater in the units).	Savings of 22% per account on indoor uses only for 50% of new multifamily accounts.
New Development Hot Water On Demand	Existing code which requires new residential development to include efficient hot water on demand systems. Systems reduce hot water waiting times. Coordination with building department and tracking.	Savings of 4.3 gpd for 100% of new residential accounts.
Public & School Education	Program includes in-person and online outreach to residential customers, schools and all CII customers, landscapers and contractors. Outreach includes tools and resources specific to outdoor water use efficiency (e.g. WaterWise gardening tool and landscape watering calculator) as well as general information on water conservation through community events, websites, and social media.	Savings of 1% on common indoor water uses for 5% of user accounts.

[1]See BAWSCA *Regional Water Demand and Conservation Projection Report* for full list of uses.

Many of the conservation measures in the table above are components of the demand management measures used by the City. Further discussion on demand management measures can be found in Section 9.

4.8 Water Use for Lower Income Households

Senate Bill 1087 requires that all urban water suppliers project the water demand for low-income households planned within their service area. The following section presents the demand projections for low-income housing based on the method outlined in Section 4.5 of the UWMP Guidebook.

In this method, projected low-income housing units are to be identified from a city's housing element or a county general plan. Housing elements are based on the Regional Housing Needs Allocation (RHNA), which are produced by the State Department of Housing and Community Development (HCD). The RHNA is then used to allocate the regional need for housing to the regional council of governments (COG) or the HCD for incorporation into their respective housing elements. If a City is part of a COG, it then falls upon the COG to allocate each individual City's "fair share" of the total regional housing needs. These fair shares are separated into income categories; extremely low, very low, low, moderate, and above moderate, and subsequently included in the City's housing element.

The COG for the City is the ABAG; the same organization noted above that produces information for the region including the population projections used in this report. ABAG and HCD used these population estimates, in conjunction with job growth estimates, available land, and proximity to transportation to develop the needs for the region. ABAG subsequently allocated the needs to each city. The ABAG allocated needs for Millbrae are found in Table 4-8 below. These needs are those found in the City's housing element for the planning period 2015-2023.[4]

Table 4-8. City housing element housing needs allocation ("fair share").

	Extremely Low	Very Low	Low	Moderate	Above Moderate	Total
Units	96	97	101	112	257	663
Percent	14.5%	14.5%	15%	17%	39%	100%

The total number of units needed for all three low-income categories is 294. To project the demand required for these units, the total unit occupancy is estimated by multiplying the number of units by the average population per household (2.67) as reported in the 2010 census. The total projected low-income population is then multiplied by the average per capita residential water use for fiscal year 2020 to determine the total annual projected water use for the planned low-income developments. A summary of these demands is shown in Table 4-9 below.

[4] The RHNA reporting data includes only units that have had a building permit for construction issued before January 1, 2021 and in the Above Moderate income level category, the City can only report 257 units per HCD, even though 310 total units have been issued building permits as of December 31, 2020. Surplus in an individual income category cannot count towards the RHNA reporting data based on current HCD rules. As a result, the State undercounts the actual number of housing units constructed. The City will need to issue 367 building permits allocated across income levels (186 very low, 95 low, and 86 moderate income units) between 2021-2023 to meet the City's RHNA allocation by the end of the housing element cycle.

Table 4-9. Future low-income housing development demands.

Income Category	Housing Units Allocated	Projected Annual Demand (MG)
Extremely Low	96	5.1
Very Low	97	5.2
Low	101	5.4
Total	**294**	**15.7**

The total projected demand for future low-income housing developments in the City is 15.7 MG, split relatively evenly between extremely-, very, and low-income housing. The projected housing needs allocation and subsequent low-income demands presented above are based on the ABAG population estimates. These population estimates are the same that were used by BAWSCA in the DSS model, which were used to determine the City's projected potable water demands. Therefore, the projected water demands presented in Section 4.3 include the anticipated demand for low-income housing. Table 4-10 below confirms this requirement as part of the CWC.

Table 4-10. Inclusion of specific data in water use projections.

Are Future Water Savings Included in Projections	Yes
Section found in UWMP	Section 4.7
Are Lower Income Residential Demands Included In Projections?	Yes
NOTES: UWMP Guidebook Table 4-5.	

4.9 Climate Change

The potential effects of climate change could have an impact on future water demand within the City service area. As noted above, possible climate outcomes such as decreased snowpack in the Sierra Nevada Mountains and increased temperatures could result in customer demand modifications. According to *California's Fourth Climate Change Assessment San Francisco Bay Area Summary Report*, the Bay Area's historical temperature increased 1.7 degrees Fahrenheit from 1950 to 2005. It is predicted that annual mean maximum temperatures will increase by 1 to 2 degrees Fahrenheit in the early 21st century from the years 2006 to 2039, then will increase by an additional 3.3 degrees Fahrenheit in the mid-21st century from 2040 to 2069. This increment for the mid-21st century rises to 4.4 degrees Fahrenheit if the Bay Area remains under the high emissions scenario of "business-as-usual." For the BAWSCA Demand Study, the annual mean temperature increase in the early 21st century of 1.7 degrees Fahrenheit was incorporated into the City's demand forecast for the time period of 2019 to 2045.

A decreased supply from the SFPUC RWS could lead to lower water usages as a necessary byproduct of available supply. Increased temperatures, which can lead to dryer soil conditions, could lead to increased water demand for irrigation accounts and at home outdoor water use. There is some uncertainty with exactly

what will happen as the climate continues to change. Due to this uncertainty, it is difficult to truly assess or predict how water demand will change in any area, including the City.

5. Baselines and Targets

With the adoption of the Water Conservation Act of 2009, also known as the SB X7-7, the State of California is required to reduce urban per capita water use by 20 percent by the year 2020. In order to achieve this statewide objective, each urban retail water supplier was required to develop an urban water use target to help the state collectively achieve a 20-percent reduction. This section outlines City's process for setting and complying with the SB X7-7 water use target .

5.1 Baseline Periods

The baseline gross per capita water usage is determined using the 10- or 15- year baseline period. The 10-year baseline period is used for urban water suppliers that do not deliver recycled water as more than 10% of their overall water supply. The City uses recycled water amounting to less than 10% of overall demand; therefore, a 10-year continuous baseline period is used to determine baseline gross demand. The 10-year baseline period used in the subsequent analysis occurs between 1999 and 2008.

A second baseline period is also determined using a 5-year continuous period, regardless of the volume of recycled water delivered. The 5-year baseline period is used as the water reduction target confirmation and establishes the minimum value that any water use reduction method must achieve. The 5-year baseline period used is from 2004-2008.

5.2 Service Area Population

The populations used to update the water use reduction targets in the 2020 UWMP were obtained from the DOF's Reports and Research page. Updating the population estimates using this data was selected based on the DWR UWMP Guidance and Methodologies document, which suggests that cities whose service boundary largely overlaps (e.g., greater than 95%) their city boundary use DOF data as their first choice. In addition to the populations for the baseline years, the population estimate for the compliance year 2020 was obtained from the DOF. The updated population estimates can be found in Table 5-1 presented below.

Table 5-1. Service area population during baseline years.

Year		Population	Year		Population
10 to 15 Year Baseline Population			**5 Year Baseline Population**		
Year 1	1999	20,888	Year 1	2004	20,427
Year 2	2000	20,718	Year 2	2005	20,359
Year 3	2001	20,696	Year 3	2006	20,375
Year 4	2002	20,583	Year 4	2007	20,468
Year 5	2003	20,481	Year 5	2008	20,947
Year 6	2004	20,427	2020 Compliance Year Population		
Year 7	2005	20,359	**2020**		22,832
Year 8	2006	20,375	NOTES:		
Year 9	2007	20,468	1. Population estimates from the DOF (http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-5/)		
Year 10	2008	20,947	2. SB X7-7 Table 3		

5.3 Gross Water Use

The City's entire water supply comes through SFPUC purchases, which are metered upon delivery to any of the City's connections to the SFPUC RWS. The SFPUC bills the City based on these metered volumes, which are reported in Table 5-2 below. The years reported in the table correspond to the baseline years used as part of the SB X7-7 analysis.

Table 5-2. Water purchase volumes (MG) from SFPUC from 1999-2008.

Baseline Year	Purchase Volumes from SFPUC (MG)
1999	960
2000	949
2001	1000
2002	905
2003	840
2004	942
2005	891
2006	967
2007	894
2008	898

Because these volumes are a result of metering before final delivery, storage, or loss in the City's distribution system, these volumes represent the total gross water use.

5.4 Baseline Daily per Capita Water Use

The gross water use and estimated population values presented in Sections 5.3-5.4 above are used to calculate the baseline daily per capita water use. Baselines are calculated for each of the target years in both the 5- and 10-year calculation ranges; they are determined by taking the total gross annual usage and averaging it over the entire population per day. Table 5-3 below shows the baseline water use for each of the target years.

Table 5-3. Daily per capita usage (GPCD) during baseline years 1999-2008.

Baseline Year		Service Area Population	Annual Gross Water Use (MG)	Daily Per Capita Water Use (GPCD)
10 to 15 Year Baseline GPCD				
Year 1	1999	20,888	960	126
Year 2	2000	20,718	949	125
Year 3	2001	20,696	1,000	132
Year 4	2002	20,583	905	120
Year 5	2003	20,481	840	112
Year 6	2004	20,427	942	126
Year 7	2005	20,359	891	120
Year 8	2006	20,375	967	130
Year 9	2007	20,468	894	120
Year 10	2008	20,947	898	117
10-15 Year Average Baseline GPCD				**123**
5 Year Baseline GPCD				
Baseline Year		**Service Area Population**	**Gross Water Use (MG)**	**Daily Per Capita Water Use (GPCD)**
Year 1	2004	20,427	942	126
Year 2	2005	20,359	891	120
Year 3	2006	20,375	967	130
Year 4	2007	20,468	894	120
Year 5	2008	20,947	898	117
5 Year Average Baseline GPCD				**123**
2020 Compliance Year GPCD				
2020		22,832	685	**82**
NOTES: SB X7-7 Table 5.				

Also shown in the table are the final baseline usages for each target (5- and 10-year). These final baselines are the average of the annual baselines in their respective reporting ranges. The baseline daily per capita water uses for the 5- and 10-year baseline periods are both 123 GPCD.

Also shown in the table is the baseline water usage for the compliance year 2020, which is 76 GPCD. This usage is significantly below the baselines determined using data from the years 1999-2008. It is important in this case to recognize the context of the 2015 value in comparison to the baseline periods, where there are two significant impacts that have occurred since 2008. First, the prolonged economic downturn occurred around 2008 and has likely played a role in lower demands, as noted in the 2020 UWMP. Second, the drought which the entire State faced from 2014 through 2016 forced many cities, including Millbrae, to enact

water shortage measures to lower water usage. These factors do play some role in the lower magnitude of usage as compared to the baseline periods.

5.5 2020 Target

The DWR has provided four methods with which to determine the 2020 urban water use target. As noted in Section 5.1, the City has chosen to use Method 3 which is the same method used in the 2010 UWMP. Method 3 is based on reducing demand to 95% of the Hydrologic Regional Target determined in the 20 x 2020 Water Conservation Plan. The City is located in the San Francisco Bay Hydrologic region, which has a total 2020 Plan baseline target of 131 GPCD. To determine the target usage using this method, the City must meet 95% of the target value, or 124 GPCD.

However, CWC 10608.22 states that regardless of the method used to determine the 2020 target, an urban retail water supplier's per capita daily water use reduction target shall be no less than 95% of the 5-year baseline daily per capita water use. The 5-year baseline water use, as shown in Table 5-3 above, is 123 GPCD. Therefore, the City's 2020 water use reduction target is 117 GPCD, as shown in the table below. In addition to the 2020 water use target, SB X7-7 requires the development of an interim target water use goal for the year 2015. The interim water use target is the average of the baseline water demand and the target water demand, which for the City is 120 GPCD (Table 5-4). As part of the bill, the City's 2020 per capita water use will need to be below this value in order to be in compliance.

Table 5-4. Baseline year reduction targets summary.

Baseline Period	Start Year	End Year	Average Baseline GPCD*	Confirmed 2020 Target*
10-15 year	1999	2008	123	-
5 Year	2004	2008	123	117
*All values are in Gallons per Capita per Day (GPCD)				
NOTES: UWMP Guidebook Table 5-1.				

5.6 2020 Compliance Daily per Capita Water Use

As noted above, a component of the 2020 UWMP is to assess whether the City has achieved compliance with the water use targets established as part of SB X7-7. Using the City's 2020 fiscal year water purchases and the population estimates obtained from the DOF, the City's gross per capita water use for 2020 was 82 GPCD, which is 35 GPCD below their water use target. This information is summarized in Table 5-5.

Table 5-5. 2020 SB X7-7 compliance summary.

Actual 2020 GPCD*	Optional Adjustments to 2020 GPCD Enter "0" if no adjustment is made *From Methodology 8*					2020 GPCD* *(Adjusted if applicable)*	Did Supplier Achieve Targeted Reduction for 2020? Y/N
	Extraordinary Events*	Economic Adjustment*	Weather Normalization*	TOTAL Adjustments*	Adjusted 2020 GPCD*		
82	0	0	0	0	82	82	Y
**All values are in Gallons per Capita per Day (GPCD)*							
NOTES: UWMP Guidebook Table 5-2							

The City of Millbrae is in compliance with SB X7-7. As noted in the 2010 UWMP, the City has been experiencing a decline in water use as a result of many factors, some of which may be overall changes in water use patterns, and some that may be short term. The City has promoted water conservation programs (detailed in Section 4.6) and has been active in promoting many other demand management measures (see Section 9) which will continue to reduce typical water use trends moving forward.

6. System Supplies

This section provides an overview of the City's present and future water sources. To remain consistent with the demands presented in Section 4, water supply availability projections are reported until the year 2045, in five-year increments. Discussions for both potable water use and recycled water use are included. In addition to anticipated supply volumes, this section also presents a discussion of current and future capital improvements that will help increase water supply (Section 6.8). A summary table of all anticipated water supplies is presented in Section 6.9

6.1 SFPUC Water Purchases

As noted previously, the City purchases its potable water from the SFPUC, delivered through the RWS. This section presents a physical overview of the SFPUC RWS, and then subsequently discusses some of the key components of the relationship between the City and its sole water wholesaler, the SFPUC.

6.1.1 SFPUC Regional Water System

The RWS operated by the SFPUC is the third largest municipal system in California, servicing more than 2.6 million commercial, residential, and industrial customers. These customers are split between two major categories; the retail customers in the City of San Francisco (approximately 1/3 of the delivered water), and the wholesale customers (receiving the remaining 2/3 of water supplied). The wholesale customers are composed of 26 member agencies located around the San Francisco Bay Area, including the City of Millbrae. (Figure 3 below), which captures snowmelt and runoff from California's Sierra Nevada Mountains. This source provides approximately 85% of the RWS's municipal demand. From the Hetch Hetchy reservoir system, diverted surface water travels through a system of approximately 280 miles of pipelines and intermediate reservoirs before being delivered to the customers of the RWS.

In addition to the Hetch Hetchy supply, the SFPUC operates several other water sources which contribute the remaining 15% of municipal demand. These sources are split into two major areas, those located in Alameda County and those located in the Peninsula area of San Mateo County. The Alameda County supplies include the Calaveras and San Antonio reservoirs and the Sunol Filter Galleries (groundwater); the Peninsula supplies include the Crystal Springs, San Andreas, Pilarcitos and Stone Dam reservoirs. As noted from the source description presented above, the RWS is almost entirely dependent on surface water runoff and snow pack.

6.1.2 Bay Area Water Supply and Conservation Agency

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 RWS.

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

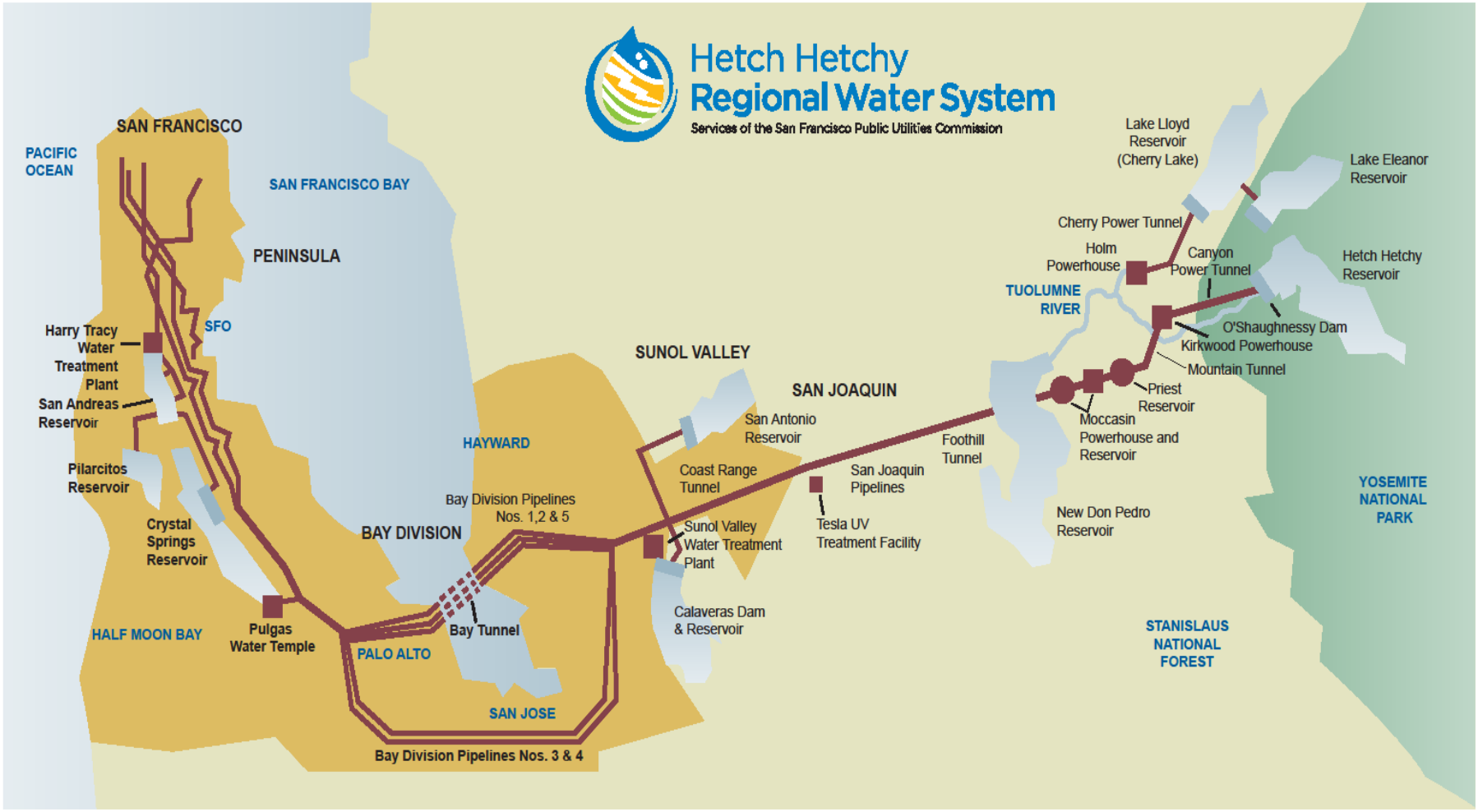


Figure 3. SFPUC Regional Water System (RWS) schematic (SFPUC, 2020)

6.1.3 Water Supply Agreement

The terms of the relationship between the City and County of San Francisco and the wholesale customers of the RWS are largely defined in the Water Supply Agreement (WSA), which came into effect in July of 2009. Among other issues, the WSA covers the Supply Assurance and Allocation during normal years, and the Water Shortage Allocation Plan. The Supply Assurance to the wholesale customers of the RWS is 184 MGD, expressed as an annual delivery average. The term of the current WSA is 25 years; however, the Supply Assurance established as part of the WSA survives the expiration of the contract. A full copy of the WSA can be found in Appendix D.

6.1.4 City of Millbrae Water Sales Contract

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. The City of Millbrae's ISG is 3.15 MGD, which corresponds to 1150 MG annually.

The City records its water supply volumes through billing from the SFPUC. The volumes for SFPUC billing are metered at the five municipal connections to the RWS.

6.1.5 SFPUC's Efforts to 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.

6.2 Groundwater

The City does not use any groundwater to supplement its water supply purchases from SFPUC. As reported in the 2015 UWMP, in the mid 1990's City staff investigated the potential to install its own wells to produce groundwater; however, no source was found within the City's boundaries. Presently, the City does not have plans to reinvestigate the development of groundwater.

6.3 Surface Water

The City does not supplement its water purchases from SFPUC with surface water diversion. It should be noted that the water supply source for the water purchased from SFPUC comes from surface water. This source is discussed in further detail in Section 6.1.

6.4 Stormwater

The City does not currently divert or treat stormwater for beneficial reuse on a municipal level. The City has participated in a workshop series, in conjunction with BAWSCA and the Millbrae Library, to teach and demonstrate rainwater harvesting and greywater reuse techniques, and currently offers rainwater harvesting rebates (further described in Section 9). However, these efforts are targeted for implementation by the end user.

6.5 Wastewater and Recycled Water

This section outlines the existing and planned recycled water use and coordination involving the City and surrounding area. Also presented in this section is the projected recycled water supply through 2045.

6.5.1 Recycled Water Coordination

The City's only municipal facility capable of producing recycled water is the Water Pollution Control Facility, which is located on the eastern boundary of the City's service area (see Figure 1). This facility, operated by the City, is responsible for collecting, treating, and discharging all effluent produced within the City limits. This facility is discussed in further detail in subsequent sections.

6.5.2 Wastewater Collection, Treatment, and Disposal

The City is responsible for the collection, treatment, and disposal of wastewater within the City's service area boundary. The City's cumulative wastewater system consists of a dedicated sanitary sewer system, a Waste Pollution Control Plant (WPCP), and a force main discharge outlet to San Francisco Bay.

Existing Facilities

The wastewater collection system consists of approximately 55 miles of underground sanitary sewer pipe of various sizes. The sewer system is predominantly gravity drained; however, the system does have three sewage pumping stations.

The City's WPCP is a secondary treatment facility with a design flow capacity of 3 MGD. The peak wet weather flow for the plant is approximately 9 MGD. Table 6-1 below shows the volume of wastewater entering the plant during the 2020 fiscal year.

Table 6-1. Wastewater collected within service area in FY 2020.

Retail: Wastewater Collected Within Service Area in 2020						
☐	There is no wastewater collection system. The supplier will not complete the table below.					
100%	Percentage of 2020 service area covered by wastewater collection system					
100%	Percentage of 2020 service area population covered by wastewater collection system					
Wastewater Collection			**Recipient of Collected Wastewater**			
Name of Wastewater Collection Agency	**Wastewater Volume Metered or Estimated?**	**Volume of Wastewater Collected in 2020 (MG)**	**Name of Wastewater Treatment Agency Receiving Collected Wastewater**	**Treatment Plant Name**	**Is WWTP Located Within UWMP Area?**	**Is WWTP Operation Contracted to a Third Party?**
City of Millbrae	Metered	529	City of Millbrae	City of Millbrae WPCP	Yes	No
Total Wastewater Collected from Service Area in 2020 (MG):		529				
NOTES: UWMP Guidebook Table 6-2.						

In 2020 the facility metered a total inflow volume of 529 MG, which is an annual average inflow of approximately 1.45 MGD. The facility's treatment processes include headworks with bar screens and grit removal, primary sedimentation, biological activated sludge treatment, secondary clarification, disinfection, and effluent skimming. Solids generated from the sedimentation processes are treated through mechanical thickening, mesophilic anaerobic digestion, and belt filter press dewatering. The finished solids are off-hauled from the site. During the anaerobic digestion process, methane gas is collected and used for energy generation onsite.

The WPCP produces restricted use disinfected secondary effluent. This effluent is used as recycled water for onsite activities and stored onsite in a 5,000 gallon storage tank. This is not included as a water supply source within the context of the UWMP.

Treated effluent is discharged though a force main into San Francisco Bay. The force main is also used for effluent disposal by the cities of Burlingame, South San Francisco, San Bruno, and the San Francisco International Airport. The force main outfall is located approximately 5,300 feet offshore and 20 feet below the mean low ocean level.

Table 6-2 shows the volume of wastewater treated and discharged from the City's WPCP during fiscal year 2020. The City is allowed to discharge up to an annual average of 3 MGD under the discharge requirements outlined by the Regional Water Quality Control Board's Order No. R2-2019-0009 and NPDES Permit No. CA0037532. This order was adopted by the Regional Board in March of 2019 and will expire on April 30, 2024. The total treated wastewater, as noted above, is 529 MG for the fiscal year 2020. The total effluent being discharged through the force main into San Francisco Bay is 548 MG, which is an annual average of 1.50 MGD.

Table 6-2. Wastewater treatment and discharge within service area in FY 2020.

Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Method of Disposal	Does This Plant Treat Wastewater Generated Outside the Service Area?	Treatment Level	2020 volumes				
						Wastewater Treated (MG)	Discharged Treated Wastewater (MG)	Recycled Within Service Area (MG)	Recycled Outside of Service Area (MG)	Instream Flow Permit Requirement
City of Millbrae WPCP	2	Lower San Francisco Bay Marine Outfall	Ocean outfall	No	Secondary, Disinfected - 23	529	548	9	0	0
					Total	529	548	9	0	0

NOTES: UWMP Guidebook Table 6-3.
Records show slight discrepancy of 3.6% between influent and effluent flows.

6.5.3 Recycled Water System

Recycled Water History

Since 1994, the City has actively engaged in the investigation or use of recycled water for various purposes within the City service area. The City's first recycled water project occurred through an agreement with the California Department of Transportation (CalTrans), where disinfected effluent was used for landscape irrigation at a CalTrans property and in Highway 101 landscape medians.

In 1996, recycled water was trucked offsite and used for dust control and soil compaction during the construction of the BART station.

The City is undertaking a process to update the Millbrae Station Area Specific Plan (MSASP), which was initially developed and adopted in 1998. The MSASP guides future public improvements and private development in the Plan Area surrounding the BART Station over the next 25 years. The project area is in close proximity to the City's WPCP; therefore, as a component of the plan the City had investigated using recycled water onsite during development and potentially reused water onsite post-development. To provide post-development reuse water onsite, a new tertiary treatment unit would need to be installed at the WPCP. Currently, no recycled water facilities exist within the Plan area; however, the MSASP requires all development projects to use recycled urban water for the irrigation of landscapes, plazas, and playgrounds to reduce demand for potable water. All new projects are required to provide purple pipes in the street adjacent to their property for future hook-up to the citywide purple pipe network.

Current Recycled Water Use

The City's current recycled water use is limited to applications onsite at the WPCP. The recycled water is used to wash down and clean equipment, including the bar screens and clarifiers, and for dust control at

the facility. The total monthly volume of recycled water used onsite is 9 MG. Recycled water for this purpose is planned to continue indefinitely. This on-site recycled water use is not included in calculations of water supply.

6.5.4 Recycled Water Beneficial Uses

The City has in the past and will continue to explore recycled water as a means of offsetting potable water use within the service area. There are several potential beneficial use applications for recycled water in the City, including use for irrigation, construction, dust control, and commercial uses. A brief discussion of potential recycled water use is presented below.

- As noted previously, the MSASP includes using recycled water for future development projects.
- The City participated in a feasibility study to evaluate using the WPCP's effluent for a recycled water program. The study concluded that the WPCP has sufficient developable space for the estimated maximum footprint of 3.0 MGD recycled water treatment facilities. The City will continue planning efforts and pursue grant funding to support the project.
- The City is looking into participating in a joint project with the cities of South San Francisco and San Bruno. This project would recycle effluent from the cities of Millbrae, San Bruno, South San Francisco, and SFO, and use it for various applications in the South San Francisco area.

Although the City will continue to evaluate the benefit and financial feasibility of expanding recycled water use, at present there are no firm plans to expand beyond the existing uses at the WPCP. The City will continue to evaluate the feasibility of expanding the use of recycled water. It is anticipated that for the purpose of this planning projection that recycled water use will be restricted to onsite activities at the WPCP. Table 6-3 below presents the current and projected recycled water usage in the service area through 2045.

Table 6-3. Current and projected recycled water for direct beneficial uses within the service area (MG).

Beneficial Use Type	Potential Beneficial Uses of Recycled Water	Amount of Potential Uses of Recycled Water	General Description of 2020 Uses	Level of Treatment	2020	2025	2030	2035	2040	2045
Agricultural irrigation			-							
Landscape irrigation (excludes golf courses)			-							
Golf course irrigation			-							
Commercial use			-							
Industrial use			-							
Geothermal and other energy production			-							
Seawater intrusion barrier			-							
Recreational impoundment			-							
Wetlands or wildlife habitat			-							
Groundwater recharge (IPR)			-							
Surface water augmentation (IPR)			-							
Direct potable reuse			-							
Other			-							
				Total:	0	0	0	0	0	0
NOTES: UWMP Guidebook Table 6-4. Internal Reuse not included in totals based upon DWR guidance.										

6.5.5 Recycled Water Comparison

Projections for recycled water use were included in the City's 2015 UWMP. At the time, the City projected 28 AFY (9 MG) for use at the WPCP that is not included in the UWMP projections. There were no additional projected uses for recycled water. As noted in Section 6.5.4, the City currently uses 9 million gallons per year at the WPCP for cleaning activities. A summary of the comparison can be found in the Table below.

Table 6-4. 2015 UWMP recycled water use projection compared to 2020 (MG).

Use Type	2015 Projection for 2020	2020 Actual use
Agricultural irrigation	-	-
Landscape irrigation (excludes golf courses)	-	-
Golf course irrigation	-	-
Commercial use	-	-
Industrial use	-	-
Geothermal and other energy production	-	-
Seawater intrusion barrier	-	-
Recreational impoundment	-	-
Wetlands or wildlife habitat	-	-
Groundwater recharge (IPR)	-	-
Surface water augmentation (IPR)	-	-
Direct potable reuse	-	-
Other	-	-
Total	0	0
NOTES: UWMP Guidebook Table 6-5. Does not include recycled water used for cleaning activities at WPCP.		

6.5.6 Methods to Encourage Recycled Water Use

The City has made efforts to promote recycled water use in the service area and explore opportunities for expanding recycled water use beyond the WPCP.

As noted previously, the City has explored using recycled water at the MSASP development projects, and has also investigated implementing a water reuse system at the site that would be supplied with tertiary effluent from the WPCP. To successfully implement this type of project, a new tertiary treatment unit, storage, and dedicated distribution system would need to be installed.

The City actively promotes water conservation and efficiency measures through various public outreach efforts. A component of the outreach efforts has been for greywater reuse on the residential level. Specific greywater outreach methods have included workshops at the Millbrae public library and links to resources on greywater technology on the City's website and in newsletters and other water conservation brochures the City provides.

In 2010, the City passed the Indoor Water Conservation Ordinance, which amended chapter 9.6 of the Millbrae Municipal Code. This section of code applies to new developments and remodels of a specified size, and outlines the water conservation measures and water fixture requirements for these developments. Some of the standards set forth in the code have implications on recycled water use, including the following:

1. Section 9.60.040. Automatic vehicle wash facilities are required to use 50% or more recycled water from onsite.

2. Section 9.60.040. Separate meters to be installed for outdoor landscaping areas greater than 5,000 square feet in area.

Although the City actively promotes recycled water use, both on the residential and municipal level, at this time the only planned recycled water projects will be what is included in the MSASP, and other than that the only recycled water use is the 9 MG currently used at the WPCP. Through various work in the past, the City has found that implementing municipal level recycled water projects is currently cost prohibitive, and would require grant funding to make financial sense. As such, the City plans to continue using recycled water at the WPCP, and will continue to evaluate possibilities to expand recycled water use. Projects of this type will be implemented when the need for such a product is identified and the project can be made financially feasible, either through grant funding or other financial incentives.

6.6 Desalinated Water Opportunities

For many water agencies around California, the development of desalination facilities has become a potential solution worth exploring to help diversify or replace existing water supplies. However, due to traditionally high capital and operating costs and plant siting constraints, many smaller water agencies find desalination projects infeasible. For these same reasons the City has found desalination of either sea water or brackish groundwater not applicable to their near term water supply plans.

As noted in the 2015 UWMP, the Bay Area's larger wholesale water agencies have partnered to begin developing a desalination project in the Bay Area. As the City could benefit if such a project were to take place, Section 6.6.1 below summarizes the program.

Similar to the feasibility analyses mentioned above, BAWSCA has also conducted feasibility studies on developing desalination projects that would serve the member agencies. These efforts have been documented in the BAWSCA report titled *Long-Term Reliable Water Supply Strategy,* and are discussed in Section 6.6.2 below.

6.6.1 Bay Area Brackish Water Desalination

The Bay Area's five largest water agencies including Contra Costa Water District (CCWD), the East Bay Municipal Utility District (EBMUD), the SFPUC, the Santa Clara Valley Water District (Valley Water), and the Zone 7 Water Agency partnered together on the Bay Area Regional Brackish Water Desalination (Regional Desalination) Project. The Alameda County Water District (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. Further details on the Regional Desalination Project can be found in Section 7.6.3.

6.6.2 BAWSCA Desalination Projects

As part of the Long-Term Reliable Water System Strategy, BAWSCA led the investigation of two specific desalination project scenarios. These included two intake methods and two potential project areas. The intake methods investigated were an open intake in San Francisco Bay and a shallow brackish well either near or under the bay. The two greater regions identified as feasible siting locations were termed the Central Focus Area and the Southern Focus Area.

Upon completion of an analysis which included among other criterion effective cost, facility reliability, and permitting requirements, it was concluded that desalination could potentially provide substantial yield; however, at a cost and permitting requirement that make the option less attractive than other supply augmentation methods. However, even with the costs and permitting associated with this alternative, desalination does provide one of the most intriguing alternatives to produce water within the BAWSCA service area, and continuing this feasibility analysis warrants further investigation.

6.7 Exchanges or Transfers

Currently, the City has no firm plans to engage in direct water transfers or exchanges with other water agencies. There is however the possibility of either the SFPUC or BAWSCA securing transferred water to be used by the wholesale customers of the RWS. The discussion below summarizes these opportunities.

The current WSIP provides the ability for the SFPUC to engage in water purchases for its wholesale or retail customers. The discussion in the WSIP includes the potential of purchasing additional water from Modesto Irrigation District (MID). In 2012, negotiations were taking place between the two agencies on a dry-year water transfer averaging 2 MGD. Negotiations were not successful and the talks have since been terminated. Subsequently, the SFPUC has begun engaging in ongoing conversations with Oakdale Irrigation District for a one-year water transfer agreement for an annual average of 2 MGD. 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 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), a partnership among eight Bay Area water utilities (including the SFPUC, Alameda County Water District, BAWSCA, Contra Costa Water District, Valley Water) to identify opportunities to move water across the region as efficiently as possible, particularly during times of drought and emergencies.

BAWSCA facilitated two transfers of portions of 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. The City may consider an ISG transfer from another BAWSCA agencies in the future to meet increasing demands.

6.8 Future Water Projects

The City maintains a thorough Capital Improvement Program (CIP) to ensure that all components of the water system can be maintained as needed, in a timely fashion. A sample of current projects in the City's CIP include:

- Fire hydrant upgrades/replacements;
- Water main replacements;
- Water tank replacement;
- Water Wise landscaping; and
- Valve replacements and refurbishments.

Currently, there are no projects planned outside of the CIP projects that would have an appreciable outcome on water supply. Projects relevant to supply increases for the RWS are discussed in Section 6.1.3.

6.9 Summary of Existing and Planned Sources of Water

As developed in the previous sections, the City's total current and anticipated water supply come from the City's purchases from the SFPUC and from recycled water at the WPCP. For the year 2020, the total water purchases and recycled water use is shown in Table 6-5 below.

Table 6-5. 2020 actual water supplies (MG).

Water Supply	Additional Detail on Water Supply	FY 2020		
		Actual Volume (MG)	Actual Volume (CCF)	Water Quality
Purchased or Imported Water	From SFPUC	685	915,775	Drinking Water
Recycled Water		0	0	Recycled Water
Total		685	915,775	
NOTES: UWMP Guidebook Table 6-8.				

The total drinking water purchased by the City in 2020 was 685 MG. The total supply available to the City from the SFPUC is 1,150 MG annually; therefore, the 2020 water usage represents approximately 60% of total available supply. Recycled water was used solely at the WPCP for cleaning purposes and was not included in the water supply totals for the UWMP. The total projected potable water supply between 2025 and 2045 is based on the City's current ISG of 3.15 MGD (1,150 MGY). The individual and total projections to the year 2040 are shown in Table 6-6 below.

Table 6-6. Projected water supplies 2025-2045 (MG).

Water Supply	Additional Detail on Water Supply	Projected Water Supply *Report To the Extent Practicable*				
		2025	2030	2035	2040	2045
		Reasonably Available Volume (MG)	Reasonably Available Volume (MG)	Reasonably Available Volume (MG)	Reasonably Available Volume (MG)	Reasonably Available Volume (MG)
Purchased/ Imported Water	SFPUC Purchases	1,150	1,150	1,150	1,150	1,150
Total		1,150	1,150	1,150	1,150	1,150
NOTES: UWMP Guidebook Table 6-9.						

6.10 Energy Intensity

A new requirement for the 2020 UWMP, the City investigated the energy intensity of its water supply. Using the Total Utility Approach, The City used its energy meter data from its water supply system over a one-year period (June 17, 2019 to June 15, 2020) and the volume of water produced during the same time span to calculate the energy intensity of its water supply. The data used and the resulting calculation are presented below in Table 6-7. The calculation showed that the City's water supply system energy intensity was 0.3 kWh/AF.

Table 6-7. Energy Intensity of Water Supply

	Urban Water Supplier Operational Control		
	Sum of All Water Management Processes	Non-Consequential Hydropower	
	Total Utility	Hydropower	Net Utility
Volume of Water Entering Process (AF)	845,437	0	845,437
Energy Consumed (kWh)	212,984	0	212,984
Energy Intensity (kWh/AF)	0.3	0	0.3
NOTES: UWMP Guidebook Table O1-B. Data is from June 17, 2019 to June 15, 2020.			

6.11 Climate Change Impacts to Supply

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 2019 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 was established as 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. Though the BAIRWMP was updated in 2019 to align with DWR standards for Proposition 1 implementation funding, the Climate Change chapter and contents remained largely unchanged.

Table 6-8. 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.

Vulnerability Areas	General Overview of Vulnerabilities
Water Quality	**Imported Water** – For sources derived from the Delta, sea-level rise could result in increases in chloride and bromide (a disinfection by-product (DBP) precursor that is also a component of sea water), potentially requiring changes in treatment for drinking water. Increased temperature could result in an increase in algal blooms, taste and odor events, and a general increase in DBP formation. **Regional Surface Water** – Increased temperature could result in lower dissolved oxygen in streams and prolong thermocline stratification in lakes and reservoirs forming anoxic bottom conditions and algal blooms. Decrease in annual precipitation could result in higher concentrations of contaminants in streams during droughts or in association with flushing rain events. Increased wildfire risk and flashier or more intense storms could increase turbidity loads for water treatment. **Regional Groundwater** – Sea-level rise could result in increases in chlorides and bromide for some coastal groundwater basins in the Region. Water quality changes in imported water used for recharge could also impact groundwater quality.
Sea-Level Rise	Sea-level rise is additive to tidal range, storm surges, stream flows, and wind waves, which together will increase the potential for higher total water levels, overtopping, and erosion. Much of the bay shoreline is comprised of low-lying diked baylands which are already vulnerable to flooding. In addition to rising mean sea level, continued subsidence due to tectonic activity will increase the rate of relative sea-level rise. 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 armouring (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 cold water 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.

7. Water System Reliability

This section discusses the reliability of the water supply for the City. Topics covered include the City's relationship with BAWSCA, the reliability of the RWS operated by the SFPUC, and the water delivery volumes made available to the City during drought years.

7.1 Constraints on Water Sources

The City purchases its entire potable water supply from the SFPUC regional water system. Therefore, any constraints on the wholesale water supply are directly relevant to the reliability of the potable water supply for the City. Constraints that are applicable to the SFPUC water supply are discussed in detail below and include water quality and climactic effects to the water source.

7.1.1 Water Quality

Water quality is one of the most common constraints imposed on a water supply, in particular when surface water is the primary source. The SFPUC supply is composed of several sources, including snowmelt/rainfall from the Sierra Nevada, surface water from the Alameda and San Mateo watersheds. As part of the SFPUC operations, water quality monitoring and reporting is an important and regular task.

SFPUC performs annual Watershed Sanitary Surveys to evaluate the sanitary conditions, water quality, and potential contamination sources. Additionally, these surveys provide the results of watershed management activities with partner agencies, which include the National Parks Service and United States Forest Service.

The SFPUC water sources deliver excellent quality water for use in the RWS. The majority of the water, approximately 85%, originates from the upper Tuolumne River watershed, which is outside the influence from urban development and pollution. This source has been deemed as pristine as to not require filtration prior to delivery to the customer; only primary disinfection and pH adjustment is required. The remaining 15% of the SFPUC supply comes from the Alameda and San Mateo watersheds. These watersheds do require treatment, including filtration, to meet water quality standards before being blended with water from the Hetch Hetchy. During all stages of treatment, the water quality at the treatment plant is monitored closely.

To ensure that water treatment facilities are capable of producing high-quality drinking water, the Harry Tracy Water Treatment Plant, which treats water from the San Mateo watersheds, has recently been upgraded. The $280 million upgrade project included significant upgrades to the ozonation system (used for primary disinfection), the construction of five new filters, and a new 11-million gallon treated water reservoir. These upgrades will help to increase the reliability of the RWS to deliver high-quality water to the RWS retail and wholesale customers.

The SFPUC Water Quality Division (WQD) regularly takes water samples from a variety of sampling points throughout the RWS. These samples are taken to ensure that water quality meets or exceeds federal and state drinking water standards. In 2019, the WQD staff conducted in excess of 53,000 drinking water tests in the RWS transmission and distribution system. This sampling is in addition to monitoring that occurs at the RWS water treatment plants, which treat water collected in the San Mateo and Alameda watersheds.

The SFPUC does not anticipate that water quality impacts will have an effect on the available water supply in the future. The Hetch Hetchy source is quite pristine, and with no planned urban development within the upper Tuolumne watershed there is no anticipated impact that could greatly reduce water quality. The Alameda and San Mateo sources are more vulnerable to reductions in water quality, due primarily to their proximity to human development. However, all of these sources are treated prior to entrance into the RWS delivery mains, and any reductions in water quality should be taken care of at the treatment plants.

If water quality should be affected for any reason, the City has formulated an emergency plan to protect the health and safety of the City's residents. In addition to the emergency plan, the City also uses the "Suburban Customer Water Supply Emergency Operations and Notifications Plan", which is supplied by the SFPUC. The plan advises the City to isolate the City's water system by closing turnouts connected to the RWS, and temporarily rely on City storage as the primary water source. While the system is isolated from the RWS, notices would go out to the public to require demand reductions.

In addition to the City's emergency plans, the City also conducts various activities to ensure that water moving through their distribution system meets water quality standards. The City conducts water quality sampling throughout the water system, which includes over 40 samples per month. In 2019, the City reported no violations of coliform or any other drinking water related Maximum Contaminant Level (MCL). Other periodic sampling efforts by the City include sampling for lead and copper, disinfection byproducts, and general physical components required by state and federal regulations. A copy of the City's Consumer Confidence Report (CCR) can be found in Appendix G.

The City regularly monitors the five connection points between the City water system and the RWS and key components of the City water system such as storage tanks with a computerized SCADA system. The system continuously monitors incoming water for water quality information.

The City also performs regular operational and maintenance activities to ensure high water quality. These activities include regular water system flushing, water line/main replacement, and water line dead-end removal (to reduce stagnant water).

7.1.2 Climatic Effects

Several climatic conditions could have an effect on the availability of the water supply moving forward. These effects include decreased snowpack in the Sierras and increased drought frequency and duration.

Snow in the Sierras acts as water storage, which during the melt periods slowly meters flow into the Tuolumne River watershed and Hetch Hetchy system. Decreased snowpack would result in less water entering the watershed late in the water year, and more water moving through the system in large-flow or runoff events.

Some climate science has suggested that droughts on the magnitude that California recently experienced may become more common. During these droughts, surface water supplies can significantly decrease, which could significantly affect available water for the RWS.

7.1.3 Bay-Delta Plan Amendment

In December 2018, the State Water Resources Control Board (SWRCB) adopted amendments to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan Amendment) to establish water quality objectives to maintain the health of the Bay-Delta ecosystem. The SWRCB is required by law to regularly review this plan. The adopted Bay-Delta Plan Amendment was developed with the stated goal of increasing salmonid populations in three San Joaquin River tributaries (the Stanislaus, Merced, and Tuolumne Rivers) and the Bay-Delta. The Bay-Delta Plan Amendment requires the release of 30-50% of the "unimpaired flow" 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 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.

7.1.4 Plans to Increase Supply Reliability

To address the potential impacts on the water supply from climate change, both the SFPUC and BAWSCA have set in place projects or studies to help address these vulnerabilities.

The SFPUC has been completing the WSIP, which has the stated goal of increasing supply reliability for the wholesale and retail customers of the RWS. Many of the projects included in the WSIP involve increasing storage capacity or otherwise improving storage function and reliability. Improved storage in particular will help normalize water supply availability if snow storage in the Sierras decreases, or if melt times and runoff

rates change. Additionally, this plan has explored acquiring additional supply sources, which could include water transfers or desalination. Further information on the SFPUC WSIP can be found in Sections 6.1.3 and 7.6. The SFPUC is also looking into acquiring additional water supplies and exploring other projects that would increase overall water supply resilience through the Alternative Water Supply Planning Program, discussed further in Section 7.6.3.

BAWSCA has been completing the *Long-Term Reliable Water Supply Strategy*. One goal of this effort has been to identify projects that can increase water supply reliability, and address water supply shortages during drought years when the SFPUC decreases available water supply to the wholesale customers. Further information on this project can be found in Section 7.4.

7.2 2028 SFPUC Decisions

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

- Whether or not to make the cities of San 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.

7.3 Environmental Enhancement Surcharge

As an incentive to keep Regional Water System (RWS) deliveries below the ISL of 265 MGD, the SFPUC adopted an Environmental Enhancement Surcharge for collective deliveries in excess of the ISL effective at the beginning of fiscal year 2011-12. This volume-based surcharge would be unilaterally imposed by the SFPUC on individual wholesale customers and San Francisco retail customers, when an agency's use exceeds their ISA and when sales of water to the wholesale customers and San Francisco retail customers, collectively, exceeds the ISL of 265 MGD. Actual charges would be determined based on each agency's respective amount(s) of excess use over their ISA. To date, no Environmental Enhancement Surcharges have been levied.

7.4 BAWSCA's 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 SFPUC's wholesale customers 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 [5](BARR), a partnership among eight Bay Area water utilities (including the SFPUC, Alameda County Water District, BAWSCA, Contra Costa Water District, Valley Water) 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 re-evaluate 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.

7.5 Tier One and Tier Two Drought Allocations

This section describes the Tier One and Tier Two drought allocations, which distribute the available supply from the SFPUC RWS amongst the wholesale and retail customers of the RWS during system-wide shortages. The Tier One drought allocations outline how water is distributed amongst the SFPUC's wholesale and retail customers; the Tier Two drought allocations outline how the wholesale supply is split among the wholesale customers.

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

7.5.1 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% 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% less than projected system-wide water purchases. The following table shows the SFPUC share and the wholesale customers' share of the annual water supply available during shortages depending on the level of system-wide reduction in water use that is required. The wholesale customers' share will be apportioned among the individual wholesale customers based on a separate methodology adopted by the wholesale customers, known as the Tier Two Plan, discussed further below.

Table 7-1. Tier One drought allocation percentages based on system wide supply shortfalls.

Level of System-Wide Reduction in Water Use Required	Share of Available Water	
	SFPUC Share	Wholesale Customers Share
5% or less	35.50%	64.50%
6% through 10%	36.00%	64.00%
11% through 15%	37.00%	63.00%
16% through 20%	37.50%	62.50%

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[6]) then the excess percentage would be re-allocated to the wholesale customers' share. The additional water conserved by retail customers up to the minimum 5% level is deemed to remain in storage for allocation in future successive dry years.

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

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

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

7.5.2 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. BAWSCA recognizes that this is not an ideal method and that in the event of actual RWS shortages greater than 20 percent, the wholesale customers would have the opportunity to develop and agree upon a more nuanced and equitable approach. Such an approach would likely consider basic health and safety needs such as a per capita minimum, critical institutions such as hospitals, and minimizing economic impacts on individual communities and the region.

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.

7.6 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:

Table 7-2. WSIP goals and objectives.

Program Goal	System Performance Objective
Water Supply – *meet customer water needs in non-drought and drought periods*	• Meet all state and federal regulations to support the proper operation of the water system and related power facilities. • Meet average annual water demand of 265 MGD from the SFPUC watersheds for retail and wholesale customers during non–drought years for system demands consistent with the 2009 Water Supply Agreement. • Meet dry-year delivery needs while limiting rationing to a maximum 20 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.

The adopted WSIP had several water supply elements to address the WSIP water supply goals and objectives. The following provides the water supply elements for all year types and the dry-year projects of the adopted WSIP to augment all year type water supplies during drought.

7.6.1 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
- 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, Stone Dam, and San Andreas Reservoirs. The adopted WSIP retains this mix of water supply for all year types.

7.6.2 Water Supply – Dry-Year Types

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.

7.6.3 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[7], 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.

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.

[7] 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.

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.

7.6.4 Projected SFPUC Regional Water System Supply Reliability

The SFPUC has provided the following table (**Table 7-3**) presenting the projected RWS supply reliability. This table assumes that the wholesale customers purchase 184 MGD from the RWS through 2045 and the implementation of the dry-year water supply projects included in the WSIP. The numbers represent the wholesale share of available supply during historical year types per the Tier One Water Shortage Allocation Plan and the additional cutbacks under the current plans for Bay-Delta Plan implementation beginning in 2023. This table does not reflect any potential impact to RWS yield from the additional fishery flows required as part of Calaveras Dam Replacement Project and the Lower Crystal Springs Dam Improvements Project.

Table 7-3. Projected deliveries for consecutive dry years. (2020-2025)

	Base year 2020 (Non-Dry)	Single Dry Year	Deliveries During Consecutive Dry Years				
			Year 1	Year 2	Year 3	Year 4	Year 5
System Wide-Shortage	0%	10%	10%	20%	55%	55%	55%
Annual Wholesale Allocation (MG)	67,160	57,488	57,488	48,363	27,193	27,193	27,193
Annual Wholesale Allocation (CCF)	89,786,100	76,855,615	76,855,615	64,656,417	36,354,278	36,354,278	36,354,278

Notes: Values from SFPUC memo dated January 22, 2021. Assumes Bay-Delta Plan takes effect in 2023.

Compared to the projected shortages from the 2015 UWMP, no extra shortfall is anticipated in the system during single dry years between 2020 and 2022. However, the SFPUC has projected a significant increase in shortfall in single dry year or multiple dry year conditions beginning in 2023, increasing the shortfall from 20% to 55%.

The volumes shown in Table 7-3 are the total deliveries to the wholesale customers from the RWS during dry year types. For the volume of the total allocation made available to the City during these same year types, see Section 7.7.

7.6.5 Impact of Recent SFPUC Actions on Dry-Year Reliability

As noted earlier, in adopting the Calaveras Dam Replacement Project and the Lower Crystal Springs Dam Improvements Project, the SFPUC committed to providing fishery flows below Calaveras Dam and Lower Crystal Springs Dam, as well as bypass flows below Alameda Creek Diversion Dam. The fishery flow schedules for Alameda Creek and San Mateo Creek represent a potential decrease in available water supply of an average annual 9.3 MGD and 3.5 MGD, respectively with a total of 12.8 MGD average annually. The Alameda Creek Recapture Project, described above, will replace the 9.3 MGD of supply lost to Alameda Creek fishery flows. Therefore, the remaining 3.5 MGD of fishery flows for San Mateo Creek will potentially create a shortfall in meeting the SFPUC demands of 265 MGD and slightly increase the SFPUC's dry-year water supply needs.

The adopted WSIP water supply objectives include (1) meeting a target delivery of 265 MGD through 2018 and (2) rationing at no greater than 20 percent system-wide in any one year of a drought. Participation in projects outlined in the Alternative Water Supply Planning Program may help manage the water supply loss associated with the fishery flows.

As a result of the Individual Supply Guarantees described above, the SFPUC has a responsibility to provide 184 MGD to its wholesale customers in perpetuity, regardless of demand. Therefore, the current projections for purchase requests through 2018 remain at 265 MGD, which includes wholesale and retail demand. The implementation of the Bay Delta Plan in 2023 will severely limit the wholesale volume available, cutting down to 74.5 MGD starting in the third consecutive dry year. The implications of this shortfall for the City are discussed in Section 7.8.

7.7 Reliability by Type of Year

The City relies on water purchases from the SFPUC RWS for the entirety of its demand during all water year types. Therefore, the projected availability of water, and subsequent annual supply shortfalls, are a result of the water supply available from SFPUC. Given the uncertainty surrounding implementation of the Bay Delta Plan, the reliability analysis and supply and demand assessment by water year type is provided for two scenarios:

- Implementation of the Bay-Delta Plan Amendment beginning in 2023
- No Implementation of the Bay-Delta Plan Amendment

The Tier One and Tier Two drought allocation plans, described in Section 7.5.2, provide the basis for allocating water between SFPUC and the wholesale customers for systemwide shortages up to 20%. However, there is currently no adopted methodology for allocating water among the wholesale customers for shortages greater than 20%. For scenarios in which projected systemwide shortages would exceed 20%, BAWSCA has provided recommended numbers for each member agency to use for available water supply in each type of year through the 25-year planning horizon.

7.7.1 Reliability Assessment with Bay-Delta Plan Amendment

The Bay-Delta Plan Amendment, if implemented as adopted by the SWRCB, would have significant impacts on the City's water supply availability in dry years. Table 7-4 below shows the City's expected annual water supply during average, single dry, and consecutive dry years under 2020 infrastructure conditions for 2021-2025, assuming implementation of the Bay-Delta Plan Amendment beginning in 2023.

Table 7-4. Basis of water supply data (MG) 2020 infrastructure conditions with Bay-Delta Plan

Year Type	Base Year	Available Supplies if Year Type Repeats	
		Volume Available (MG)	% of Average Supply
Average Year		1150	100%
Single-Dry Year	1967-1977	712	62%
Consecutive Dry Years 1st Year	1987-1988	712	62%
Consecutive Dry Years 2nd Year	1988-1989	785	68%
Consecutive Dry Years 3rd Year	1989-1990	416	36%
Consecutive Dry Years 4th Year	1990-1991	416	36%
Consecutive Dry Years 5th Year	1991-1992	416	36%
NOTES: UWMP Guidebook Table 7-1.			

Through 2023, the City anticipates during single dry years to receive 62% of normal annual supply. During the third through fifth dry year, when it is assumed that the Bay-Delta Plan will go into effect, the total available supply reduces to as low as 36% of normal. Drought cutbacks for single-year and multiple-year drought sequences are projected to increase through 2045 as overall demands on the SF RWS increase for Millbrae and other wholesale customers.

The available supplies during normal, single-, and multiple-dry are compared to the projected demands presented in Section 4.4. As shown in Table 7-5 below, the City is projected to meet its normal year retail demands between 2025 and 2040. In the year ending 2045, the projected supply deficit is 20 MG, which is approximately a 1.7% exceedance. During normal years, it is anticipated that is small exceedance could be met through additional SFPUC purchases, as the SFPUC wholesale customers overall are not projected to reach the overall 184 MGD supply guarantee by 2045. Alternately, this demand could be met through additional conservation or purchase of an ISG transfer, as discussed in Section 6.7.

Table 7-5. Normal year supply and demand comparison (MG).

	2025	2030	2035	2040	2045
Supply total (MG)	1,150	1,150	1,150	1,150	1,150
Demand total (MG)	835	913	896	1,029	1,170
Difference (MG)	315	237	254	121	(20)
NOTES: UWMP Guidebook Table 7-2.					

With implementation of the Bay-Delta Plan Amendment, the City is projected to experience supply shortfalls of up to 46% in 2045 in a single dry year, based on the reliability analysis provided by SFPUC and BAWSCA. The single dry year supply and demand comparison is shown in Table 7-6 below.

Table 7-6. Single dry year supply and demand comparison (MG).

	2025	2030	2035	2040	2045
Supply totals (MG)	533	580	569	653	635
Demand totals (MG)	835	913	896	1,029	1,170
Difference (MG)	(302)	(333)	(327)	(376)	(535)
NOTES: UWMP Guidebook Table 7-3					

Similar to the single dry year scenario, the City is also projected to experience significant supply shortfalls in multiple dry years scenarios with implementation of the Bay-Delta Plan Amendment, shown in Table 7-7 below. In years 2 through 5 of a multiple dry year event, the City is projected to experience shortages of up to 54% in 2045 based on projected demands and the reliability analysis provided by SFPUC and BAWSCA.

Table 7-7. Consecutive dry year supply and demand comparison (MG).

		2025	2030	2035	2040	2045
First year	Supply totals	533	580	569	653	635
	Demand totals	835	913	896	1,029	1,170
	Difference	(302)	(333)	(327)	(376)	(535)
Second year	Supply totals	456	500	489	558	635
	Demand totals	835	913	896	1,029	1,170
	Difference	(379)	(413)	(407)	(471)	(535)
Third year	Supply totals	456	500	489	558	635
	Demand totals	835	913	896	1,029	1,170
	Difference	(379)	(413)	(407)	(471)	(535)
Fourth year	Supply totals	456	500	489	493	540
	Demand totals	835	913	896	1,029	1,170
	Difference	(379)	(413)	(407)	(536)	(630)
Fifth year	Supply totals	456	500	445	493	540
	Demand totals	835	913	896	1,029	1,170
	Difference	(379)	(413)	(451)	(536)	(630)
NOTES: UWMP Guidebook Table 7-4.						

The supply cutbacks presented in the single dry year and multiple dry year analysis represent equal cutbacks to projected SFFUC purchases across all wholesale customers to stay within available supply. The supply cutbacks also assume that the Bay Delta Plan takes effect in 2023 and that no alternative water supply sources to address the projected deficit are implemented before 2045.

The City WSCP, discussed in Section 8, identifies the shortage response actions that would be taken to provide the necessary demand reductions in response to single year and multiple year shortages.

7.7.2 Reliability Assessment without Bay-Delta Plan Amendment

If the Bay-Delta Plan Amendment is not implemented, the City's projected available water supply in dry years would increase significantly. Table 7-8 shows the City's expected annual water supply during average, single dry, and consecutive dry years under 2020 infrastructure conditions for 2021-2025, without implementation of the Bay-Delta Plan Amendment.

Table 7-8. Basis of water supply data (MG) 2020 infrastructure conditions w/o Bay-Delta Plan

Year Type	Base Year	Available Supplies if Year Type Repeats	
		Volume Available (MG)	% of Average Supply
Average Year		1150	100%
Single-Dry Year	1967-1977	712	62%
Consecutive Dry Years 1st Year	1987-1988	712	62%
Consecutive Dry Years 2nd Year	1988-1989	738	64%
Consecutive Dry Years 3rd Year	1989-1990	738	64%
Consecutive Dry Years 4th Year	1990-1991	743	65%
Consecutive Dry Years 5th Year	1991-1992	751	65%
NOTES: UWMP Guidebook Table 7-1.			

The City would generally be able to receive over 62% of its normal annual supply throughout consecutive dry years without implementation of the Bay-Delta Plan Amendment. In a single dry year, the City would face at most a 3% shortfall in 2045. **Table 7-9** shows the single dry year supply and demand comparison.

Table 7-9. Single dry year supply and demand comparison w/o Bay-Delta Plan (MG)

	2025	2030	2035	2040	2045
Supply totals (MG)	836	913	894	1029	1132
Demand totals (MG)	835	913	896	1,029	1,170
Difference (MG)	1	0	(2)	0	(38)
NOTES: UWMP Guidebook Table 7-3					

In a multiple year drought, supply availability in the the first and second consecutive dry years would mirror the single dry year availability. Years 3-5 of consecutive dry years would see additional cutbacks and result in minor shortfalls ranging from 9% in 2025 to 24% in 2045. Table 7-10 below shows the supply and demand comparison in consecutive dry years.

Table 7-10. Consecutive dry year supply and demand comparison w/o Bay-Delta Plan (MG)

		2025	2030	2035	2040	2045
First year	Supply totals	836	913	894	1029	1132
	Demand totals	835	913	896	1,029	1,170
	Difference	1	0	(2)	0	(38)
Second year	Supply totals	836	913	894	1029	1132
	Demand totals	835	913	896	1,029	1,170
	Difference	1	0	(2)	0	(38)
Third year	Supply totals	836	913	894	1029	1132
	Demand totals	835	913	896	1,029	1,170
	Difference	1	0	(2)	0	(38)
Fourth year	Supply totals	756	818	788	847	894
	Demand totals	835	913	896	1,029	1,170
	Difference	(79)	(95)	(108)	(182)	(276)
Fifth year	Supply totals	756	818	788	847	894
	Demand totals	835	913	896	1,029	1,170
	Difference	(79)	(95)	(108)	(182)	(276)

NOTES: UWMP Guidebook Table 7-4.

7.8 Drought Risk Assessment

The City completed a Drought Risk Assessment (DRA) to determine the reliability of water service under a severe drought period lasting for the next five consecutive years. The DRA provides an opportunity to evaluate the functionality of the City's Water Shortage Contingency Plan (WSCP), discussed in Section 8. Results of this evaluation can be used to help identify undesired risks and allow for proactive steps to be taken prior to the next actual long-term drought. The DRA can be modified or updated on an interim cycle, as needed, to allow for the incorporation of new information as it becomes available or in the event of unforeseen circumstances.

7.8.1 Data and Methodology

Per UWMP requirements, the DRA is based on the five driest consecutive years on record. To align with SFPUC's DRA, the historical period used in this analysis is the period from 1988-1992. This represents the

five-year period determined by the SFPUC to have the lowest available water supply. Demands are escalated annual to reflect projected growth in demands anticipated to occur from 2021 through 2025. WSCP use reduction benefits are based upon the WSCP shortage response actions described in Section 8. The DRA assumes that the Bay-Delta Plan Amendment will go into effect beginning in 2023. Table 7-11 below shows the City's DRA.

Table 7-11. Five-Year Drought Risk Assessment Table (MG)

	2021	2022	2023	2024	2025
Gross Water Use	712	785	785	785	785
Total Supplies	712	785	416	422	426
Surplus/Shortfall w/o WSCP Action	0	0	(369)	(363)	(359)
Planned WSCP Actions					
WSCP Supply Augmentation Benefit	0	0	0	0	0
WSCP Use Reduction Savings Benefit	42	42	415	415	415
Revised Surplus/Shortfall	42	42	46	52	56
Resulting % Use Reduction from WSCP	6%	5%	53%	53%	53%
NOTES: UWMP Guidebook Table 7-5					

7.9 Regional Supply Reliability

The water code requires all water suppliers to describe methods, tools, or options that are being implemented or planned for implementation that will maximize the use of local water resources. The City receives its entire potable water supply from the Hetch Hetchy system through the SFPUC RWS, and therefore is dependent upon imported water from other regions to meet municipal potable demand. Any local water projects, or methods to reduce demand, would therefore increase the regional supply reliability.

The City has explored means of obtaining water within its service area, including through desalination and groundwater development; however, neither of these options has presented a feasible opportunity for supplementing the SFPUC supply.

As mentioned in Section 7.4, BAWSCA has also led efforts to increase the supply reliability for the member agencies, and has found that regional desalination may provide a local means to increase local water supply reliability. The costs of such a facility may be less prohibitive if spread across multiple member agencies.

The City has implemented several demand management measures, further discussed in Section 9, which have actively reduced municipal demand and therefore increased supply reliability. In addition, the City's continued exploration of recycled water is a work in progress towards increasing local supply reliability.

The City will continue to explore and implement measures to increase water supply reliability through demand reduction, which essentially reduces the City's reliance on imported water. However, due to the infrastructure in place with the RWS, and the existing demand regionally, it is unlikely that there would be a shift away from imported supplies moving forward.

8. Water Shortage Contingency Planning

8.1 Overview

The City has a Water Shortage Contingency Plan (WSCP), which was updated in parallel with the 2020 UWMP. The Plan is available in its entirety in Appendix K of this report. The descriptions of the Plan described in this section are summaries of the information available in the full Plan; for further detail on any of the topics in this section please refer to the full WSCP.

The goals that have been identified in the City's WSCP are as follows:

- To conserve the water supply of the City for the greatest public benefit;
- To mitigate the effects of a water supply shortage on public health and safety, economic activity, and customer lifestyle; and
- To budget water use so that supply will be available for the most essential purposes for the entire duration of the water shortage.

8.2 Coordinated Drought Planning

The City is a member of BAWSCA, an association of 26 member agencies that purchase water from the SFPUC RWS for resale to municipal customers. The City is dependent on these purchases for the entirety of their potable water supply. As noted previously, opportunity to augment the water supply from sources within the City, including from desalination, groundwater, surface water, or other system interties, has limited or no feasibility. The dependence on purchases from SFPUC places added importance on the agreements in place between the BAWSCA member agencies and the SFPUC, in particular the Tier One Plan (Section 7.5.1).

Under the Tier One Plan, the SFPUC will determine whether voluntary or mandatory actions will be required to reduce the purchases of SFPUC water to necessary levels to meet water supply availability during times of water shortage. If SFPUC determines that only voluntary reductions are necessary to meet reduced supply levels, the wholesale customers (including the City), will make good-faith efforts to reduce their water purchases to stay within water use targets. The SFPUC will not impose excess use charges during periods of voluntary rationing, but may suspend the prospective accumulation of water bank credits. If the SFPUC determines that mandatory demand management actions are necessary, the SFPUC may implement excess use charges.

As shown in the Tier One allocations plan summary table (Table 7-1), the allocation plan only covers system wide shortages up to 20%. The SFPUC and BAWSCA member agencies recognize that during times of drought, and as a component of drought planning, preparing for shortages larger than 20% is necessary. If a reduction of supply of this magnitude or greater occurs, the SFPUC and the wholesale customers would agree to meet within 10 days and discuss whether a change in the allocations set forth in Table 7-1 would be necessary. These changes could be made to ensure that there is no undue hardship to any individual agency and their retail customers.

Following the meeting mentioned above, the water allocation established by the Tier One Plan or a modified version may be adopted by mutual written consent of the SFPUC and the wholesale customers. If the SFPUC and wholesale customers cannot agree on an appropriate allocation within 30 days of the SFPUC's determination of water shortage greater than 20 percent, then the provisions of the Master Contract will apply unless all the wholesale customers direct in writing that an allocation methodology agreed to by them

be used to apportion the water to be made available to the wholesale customers collectively, in lieu of the provisions of the Master Contract.

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. BAWSCA recognizes that this is not an ideal method and that in the event of actual RWS shortages greater than 20 percent, the wholesale customers would have the opportunity to develop and agree upon a more nuanced and equitable approach. Such an approach would likely consider basic health and safety needs such as a per capita minimum, critical institutions such as hospitals, and minimizing economic impacts on individual communities and the region.

8.3 Annual Supply and Demand Assessment

A new requirement for the 2020 UWMP, urban water suppliers are required to submit an annual water shortage assessment report to DWR by July 1st of each year following the adoption of the 2020 UWMP. The procedures for conducting this annual supply and demand assessment are described further in the City's WSCP.

8.4 Stages of Action

The City has a six-stage WSCP, recently updated to align with the new Water Code requirements, which has triggering levels based on percent reductions in normal supply. These stages range in magnitude from less than 5% to over 50%, and include measures to help reduce water use, prohibit non-essential uses, and allocate available supplies to the uses deemed most critical. The six stages, as outlined in Section 3 of the City's WSCP, are shown in Table 8-1 below. Figure 4 demonstrates how the City's six stages align with DWR standard shortage levels.

Table 8-1. Stages of water shortage contingency plan.

Stage	Percent Supply Reduction[1]	Water Supply Condition
1	0-5%	Water shortage alert
2	6-15%	Water shortage warning
3	16-25%	Water shortage emergency
4	26-35%	Severe water shortage emergency
5	36-50%	Critical water shortage emergency
6	>50%	Water shortage disaster
NOTES: UWMP Guidebook Table 8-1.		

Stage	Water Shortage Magnitude	Stage Title
1	0-5%	Water Shortage Alert
2	6-15%	Water Shortage Warning
3	16-25%	Water Shortage Emergency
4	26-35%	Severe Water Shortage Emergency
5	36-50%	Critical Water Shortage Emergency
6	>50%	Water Shortage Disaster

2020 WSCP Level	Shortage Level
1	<10%
2	10-20%
3	20-30%
4	30-40%
5	40-50%
6	>50%

Figure 4. DWR shortage level alignment.

The City's strategy for approaching water shortages in each of the six stages above is uniform. Each stage includes the following four major components:

1. An allocation system to establish reduction goals for different customer groups;
2. Demand reduction measures;
3. Publicity and communications (outreach); and
4. Operating actions.

Also included in each demand stage is a prepared public message to be used in the event the City enacts the corresponding stage of the plan. The allocation system mentioned above is established in detail in Section 3.3 of the WSCP. The backbone of the allocation plan is the understanding that certain uses are higher priority than others when a water supply shortage occurs. The priorities used in the City's allocation system are as follows:

1. **Indoor Use:** This is the highest priority use, which includes residential and non-residential interior domestic and sanitary uses for health and safety purposes.
2. **Business:** This category is the second highest priority and includes all non-sanitary usage related to commercial and industrial activity.
3. **Outdoor/Irrigation:** This is the lowest priority and includes all irrigation and outdoor usage in the single family, multiple family, and irrigation categories.

Based on these priorities, the City has developed the following allocations based on normal deliveries during each stage of the WSCP.

Table 8-2. Water delivery allocation by priority (based on normal deliveries).

Stage	System Shortfall	Indoor	Business	Outdoor/Irrigation
2	15%	95%	95%	63%
3	25%	95%	90%	33%
4	35%	90%	85%	12%
5	50%	75%	60%	0%
6	>50%	<75%	<60%	0%

The goal of this allocation system is to balance available supplies in times of water shortage as much as feasible. This is achieved primarily through reductions in outdoor water use, as shown in the table above. At each level of supply reduction, health and safety and business are given the highest priority. In all system shortfalls, however, each usage suffers greater reductions in available allocation, which is necessary to balance available supplies with demand.

As noted above, the primary concern for the allocations in each stage of the water shortage contingency plan is to maintain sufficient water for public health, safety, and sanitation use. Table 8-3 below shows the residential indoor water use allocation in terms of available daily water on a per capita basis for each stage of the WSCP.

Table 8-3. Health and safety indoor water use allocations.

Deficiency Condition	Health/Safety Allocation	Combined Residential Use (GPCD)
No deficiency	100%	55
15%, 25%	95%	49
35%	90%	41
50%	75%	33
>50%	<75%	30

Essential indoor health and safety water use is commonly estimated at 45-50 GPCD. As shown in the table above, in all but the most extreme cases of water supply listed, the plan above meets this standard. Further explanation as to how the estimates in the table above were developed can be found in Section 3.3 of the City's WSCP.

The water shortage strategy developed by any water agency can only be as effective as the process in place to implement the plan. The following section describes the process in place for moving through the water shortage process.

8.4.1 Implementation Strategy

The City can implement the water shortage stages in two ways. First, as the City is solely dependent on the SFPUC supply, movement through these stages could occur based on the supply as reported available for purchase from SFPUC. Second, the City could implement and move through these stages based on drought or emergency declarations from the City or State. Although actual shortages may occur at any point in the year, a typical drought shortage is usually forecasted by the SFPUC between March and April.

In addition to drought emergencies, the staged water shortage contingency plan can also be used to manage demand during shortages caused by other phenomena, such as water quality issues. During such an event, the same supply reduction triggering levels would be used.

The process in place for the City to declare a water shortage is summarized below:

- The City Council holds a public hearing on the matter;
- The public hearing be properly noticed (minimum of publishing once in newspaper at least seven days prior to the date of the hearing);
- Upon determining and declaring the existence of a water shortage or drought, City Council may then adopt regulations and restrictions governing the use and delivery of water.

The stages outlined above include various prohibitions, regulations, and other associated polices. These components are discussed in further detail in subsequent sections.

8.5 Demand Reduction Actions

Mandatory prohibitions on water use are vital measures to outline in an agency's WSCP. These measures, combined with a proactive public information campaign, give the City the ability to implement and enforce measures that can play a large role in reducing demand during times of water shortage emergency. Table 8-4 below summarizes the demand reduction actions relevant to each stage of water shortage emergency outlined in the City's WSCP. The actions in this table are a summary of the material contained throughout Section 3 of the WSCP. For full explanation on all of these measures, or for any other restrictions and prohibitions not listed here, refer to the WSCP included in Appendix K. The stages listed in the table represent the water shortage stage when each specific measure becomes active. Note that most measures remain active through the stages beyond which the measure is implemented.

Table 8-4. Demand Reduction Actions

Stage	Demand Reduction Actions	Volume Reduction of Shortage Gap	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
1	Expand Public Information Campaign	2.4%	Implement Media Campaign including newspaper and web announcements	Yes
1	Increase Water Waste Patrols	1.4%	Enforce existing water waste ordinances	Yes
1	Other	0.8%	Non-essential uses banned	Yes

Stage	Demand Reduction Actions	Volume Reduction of Shortage Gap	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
1	Landscape - Other landscape restriction or prohibition	0.4%	Graywater and Customer Conservation to Drip, Low-Volume Irrigation	Yes
2	Expand Public Information Campaign	4.3%	Expand campaign to include regular media briefings; publish weekly consumption reports	Yes
2	Other	3.8%	Accelerate System leak detection and repair	Yes
2	Landscape - Other landscape restriction or prohibition	0.2%	Conduct workshops on Large Landscape Requirements	Yes
2	Landscape - Limit landscape irrigation to specific times	0.7%	Landscape irrigation restricted to designated watering days	Yes
2	Landscape - Other landscape restriction or prohibition	0.7%	Require large landscapes to adhere to water budgets	Yes
2	Other - Prohibit use of potable water for washing hard surfaces	0.6%	Prohibit exterior washing of structures	Yes
2	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	0.6%	Require large users to audit premises and repair leaks	Yes
2	Water Features - Restrict water use for decorative water features, such as fountains	0.6%	Use re-circulated water to operate decorative fountains, ponds, and lakes	Yes
2	Other	0.6%	Use a bucket and a hand-held hose with a positive shut-off nozzle, mobile high-pressure/low-volume wash system, or at a commercial site to wash vehicles	Yes
3	Expand Public Information Campaign	6.5%	Expand campaign to include regular media briefings; publish weekly consumption reports	Yes
3	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	1.4%	Leak repair within 72 hours	Yes
3	Landscape - Other landscape restriction or prohibition	4.6%	Reduce water budgets for large landscapes	Yes
3	CII - Other CII restriction or prohibition	3.0%	Require all commercial customers to prominently display "save water" signage and develop conservation plans	Yes
3	Other water feature or swimming pool restriction	0.3%	No operation of ornamental fountains	Yes

Stage	Demand Reduction Actions	Volume Reduction of Shortage Gap	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
4	Increase Water Waste Patrols	0.7%	Expand water waste enforcement to 24/7	Yes
4	Other	7.2%	Institute water rationing for residential customers	Yes
4	CII - Other CII restriction or prohibition	1.6%	Institute water rationing for commercial customers	Yes
4	Landscape - Other landscape restriction or prohibition	5.3%	Minimal water budgets for large landscape customers	Yes
4	Landscape - Other landscape restriction or prohibition	0.4%	Prohibit turf irrigation installation in new development	Yes
4	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	0.2%	Prohibit car washing everywhere except commercial facilities	Yes
4	Other	0.1%	Rescind hydrant and bulk water permits	Yes
4	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	1.6%	Leaks must be fixed within 48 hours	Yes
5	Other	10.6%	Reduce residential water allocations	Yes
5	CII - Other CII restriction or prohibition	3.3%	Reduce commercial water allocations	Yes
5	Landscape - Prohibit all landscape irrigation	16.3%	Prohibit outdoor irrigation with 24/7 enforcement	Yes
5	Other water feature or swimming pool restriction	0.0%	No water for recreation, close pools	Yes
5	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	0.0%	Leaks must be fixed within 24 hours	Yes
6	Other	13.6%	Reduce residential water allocations to health and safety minimums	Yes
6	CII - Other CII restriction or prohibition	4.9%	No water for non-essential commercial uses	Yes

NOTES: See the City's Water Shortage Contingency Plan for further detail.
UWMP Guidebook Table 8-2

Enforcement methods for violating mandatory prohibitions and excess water use charges that complement Table 8-4 are presented in the subsequent section.

8.6 Penalties, Charges, Other Enforcement Prohibitions

The City has methods in place to communicate, warn, enforce, and penalize customers that violate mandatory water restriction measures outlined in the previous section. In addition, the City has developed monthly excess use fees for customers that exceed allocated water use levels when they are in force resulting from a Water Shortage Stage. Table 8-5 below presents the excess use charge for customers exceeding their allocations during times of enforced drought.

Table 8-5. Excessive use charge schedule.

% Over Allocation	Excess Use Charge Per CCF
0-10%	$5.00
10.1-20%	$13.00
20.1% or greater	$25.00

The table above can be found in Section 3.5.1 of the WSCP. This excess use fee would be added in addition to the customer's regular water use rates (found in Appendix E), and is designed to act as a deterrent to excess water use during times of shortages. If a customer's water use exceeds the allocation by a large amount, penalties would be greater and may include the following:

- **Flow Restriction:** Some customers will continue to exceed their allotment regardless of the water bill amount. In such cases, the Public Works Department is authorized to install a flow restriction device to reduce flow to the customer, to an amount just enough for health and safety purposes. In these cases, the customer is charged a fee to cover the staff time needed to install the flow restrictor and another fee for its removal. Staff would not use this method where fire suppression sprinklers are on the same supply line as domestic water.
- **Disconnection/reconnection fees:** Water suppliers have the legal authority to enforce water shortage regulations by terminating service for egregious violations. In such cases, the customer would be charged for both disconnection and reconnection.
- **Citations:** The City's water conservation ordinance authorizes staff to issue citations that would have to be paid or challenged in court.

The City also has in place methods to engage, warn, and enforce violations of the mandatory end use prohibitions listed in Table 8-4 above. Initially in cases of end use violation, the violator is contacted via phone, letter, door tag, or in person and City staff will educate them as to why the prohibitions are in place. If this step does not modify the customer's behavior, and further violations were reported, City staff could then issue a written notice of violation. If violations continue to occur, the City could elect to assess a penalty fee, which would be added in addition to the customer's existing utility bill. The City's penalty fee schedule is shown below:

- 1st Violation: $100;
- 2nd Violation: $200; and
- 3rd Violation: $500 (and for each additional violation).

The City could consider higher penalty fees for large users that wilfully violate water restrictions. There are exceptions to the enforcements summarized above, and a process for appeals. Both of these topics can be found in the City's WSCP found in Appendix K.

8.7 Consumption Reduction Methods

Supply augmentation is a strategy some water suppliers use to help offset the effects of drought scenarios on their customers. Since the City receives its supply from SFPUC, there is no real opportunity for supply augmentation in concert with WSCP shortage levels. The City may explore options for supply augmentation as the need arises, but do not have any plans at present.

8.8 Determining Water Shortage Reductions

As noted previously, the City and its water system is fully metered. Additionally, each connection between the City and the RWS is metered. Metered water consumption is reported on a bi-monthly basis, which is generated from the utility billing system. During a water shortage, large water consumers would be monitored on a more frequent basis. During severe water shortages, consumption would be monitored on a daily basis and daily status reports would be given to the Public Works Director.

8.9 Revenue and Expenditure Impacts

An often overlooked consequence of implementing demand reduction to address water shortages is the corresponding reduction in revenue that occurs to the City's Water Enterprise Fund as a result of reduced water sales. To better understand the magnitude of revenue losses that the Water Enterprise Fund might experience, a table was developed based on 2020 fiscal year revenues. The table assumes the "ready-to-serve" or fixed monthly service charge that is based on meter size would remain unaffected. The volumetric portion of the Water Fund's revenue is based on water sales and would vary by customer class in accordance with the allocation presented in Table 8-2 over the seven month period in which water shortage regulations are likely to be in effect. Results are summarized in Table 8-6 below.

Table 8-6. Estimated revenue losses associated with each water shortage stage.

Customer Category	FY 2020 Revenue			Revenue Losses Due to Reduced Water Sales					
	From Water Service Charges	From Water Sales	Total	Stage 1 (5%)	Stage 2 (15%)	Stage 3 (25%)	Stage 4 (35%)	Stage 5 (50%)	Stage 6 (>50%)
Single Family Residential	$1,734,000	$4,624,454	$6,358,454	$231,223	$693,668	$1,156,113	$1,618,559	$2,312,227	$2,312,227+
Multi-Family Residential	$84,000	$1,654,442	$1,738,442	$82,722	$248,166	$413,611	$579,055	$827,221	$827,221+
Business	$88,200	$1,519,814	$1,608,014	$75,991	$227,972	$379,954	$531,935	$759,907	$759,907+
Municipal	$13,500	$276,422	$289,922	$13,821	$41,463	$69,105	$96,748	$138,211	$138,211+
Irrigation	$28,200	$720,637	$748,837	$36,032	$108,096	$180,159	$252,223	$360,318	$360,318+
Other	$29,400	$5,377	$34,777	$269	$807	$1,344	$1,882	$2,688	$2,688+
Totals	$1,977,300	$8,801,146	$10,778,446	$440,057	$1,320,172	$2,200,286	$3,080,401	$4,400,573	$4,400,573+
Estimated Net Revenue				$10,338,389	$9,458,274	$8,578,160	$7,698,045	$6,377,873	>$6,377,873

Table 8-6 shows revenue losses ranging from just over $440,000 in a 5% water shortage situation to over $4.4 million in a water shortage disaster of over 50%. Compared to the 2020 revenues of just approximately $10.8 million, the City's net revenue would be reduced to approximately $10.3 million in Stage 1 and to under $6.4 million in Stage 6. These revenue loss projections are the best estimates at this time and may underestimate the problem. There are other factors that could affect revenue during times of mandatory demand reduction that are more difficult to quantify, which include the following reasons:

- It is unlikely that system water use would immediately recover to normal levels in the months following a period of curtailment as modelled, thereby further depressing income;
- The table above does not include added operating costs of staff, equipment, and materials related to the water shortage response;
- The table above does not include potential penalties or excess use charges; and
- There would be relatively minor cost savings associated with reduced power and chemical usage at the WPCP.

Whatever the situation, one element of implementing this WSCP involves examining the Water Enterprise Fund budget for the coming year and recommending action(s) to reduce expenditures to lessen or overcome the revenue shortfall. Options include the following:

- Deferring planned capital improvements
- Considering possible rate adjustments or surcharges

Another implementation issue associated with pricing is the Proposition 218 procedure for increasing water rates, fees, and charges. It is assumed that the proposed changes to both penalty fees and excess use fees discussed in Section 8.5 would require written notice to all customers, a public hearing, and consideration of written protests and comments before implementing the new fees. Given the minimum 45 day protest period, the entire Proposition 218 process can take several months to complete.

8.10 Resolution or Ordinance

The City's water shortage contingency plan resolution can be found in Appendix C.

8.11 Plan Refinement/Re-Evaluation Process

The Water Shortage Contingency Plan is a living document and will need to be responsive to the effectiveness of conservation measures in the midst of a water shortage. The City will analyze monthly monitoring data, consult with all City Departments, and convene the Water Appeals Board to determine if adaptive measures need to be taken to achieve the necessary shortage reduction levels. In the case that the measures are not working as desired, the City will add new actions or refine current actions to achieve greater savings. Measures from a higher stage can be adopted into the current stage, such as requiring leak repairs within 24 hours rather than 72 hours in Stage 3. When updates are needed, the City will coordinate amongst all City Departments to refine the plan and provide updated information and measures to the City Council for approval.

8.12 Catastrophic Supply Interruption

The CWC grants the authority for the governing body of a water agency to declare a water shortage emergency, in particular under a catastrophic interruption event. After having done so, the agency is given

the authority to enact measures to regulate demand during the shortage. In these situations, water needed for domestic, sanitary, health, and fire protection purposes is given ultimate priority. Discrimination between customers using water for the same purposes is not permitted.

Catastrophic water supply interruptions or shortages can result from a variety of causes, including earthquake, vandalism, flood, pipeline break, or other large scale natural disaster. The WSCP is meant to address short and long term water supply shortages as a result of drought or other dry year conditions; however, many provisions in Stage 6 of the WSCP are directly relevant to a catastrophic supply interruption. Stage 6 is a situation where there is an imminent and extraordinary crisis threatening health, safety, and security of the entire community. During Stage 6, water use is reserved for health, sanitation, and safety needs, and the measures to achieve the required reductions are extreme. Measures in Stage 6 include water rationing for all customers, irrigation prohibitions, vehicle and building washing prohibitions, and required leak repair within 48 hours. For further explanation of Stage 6, and how it may be relevant to a catastrophic supply interruption, see the WSCP attached in Appendix K.

During shorter, high intensity emergency incidents or disasters, the City maintains a separate Emergency Operations Plan. As a component of this plan, the City has developed an emergency water shortage event chart, which can be found in Appendix D of the WSCP. As shown in the chart, City response actions are planned for based on a hierarchy of severity, beginning with the loss of individual City interties to the RWS, and moving up to loss of function of the Sunol and Harry Tracy Water Treatment Plan Supply lines. In addition to where the loss of service occurs, the chart takes into account the duration of the interruption, with durations of less than or greater than 24 hours. For each potential scenario, the corresponding City pressure zones are identified, possible scenarios/reasons are formulated, and City response measures are outlined. As there is a host of information in the emergency water shortage event chart, please refer to Appendix D of the WSCP for further explanation.

8.12.1 Seismic Risk Assessment and Mitigation Plan

The City also has a Hazard Mitigation Plan that is contained within the County of San Mateo Hazard Mitigation Plan (Section 2, Chapter 12). The City and portions of the RWS are located in seismically active areas, making catastrophic supply interruption due to a natural disaster such as an earthquake a tangible threat and the natural hazard that poses the highest risk to the City. Past natural hazard events within the City have included landslides and earthquakes.

The County Hazard Mitigation Plan identifies several specific vulnerabilities for the City, including:

- City water storage tanks are not up to current seismic codes. Tanks have been in service since 1970 and have passed their useful life. The City of Millbrae recently completed the Water Storage Tanks Master Plan and is actively seeking funding to implement the projects recommended in the Master Plan.
- Aging water distribution system. The majority of the 75 miles of water distribution system are also over 60 years old and in urgent need of replacement and retrofit.

The County Hazard Mitigation Plan also includes an action plan for mitigation of the identified vulnerabilities. Specific actions for the water system include:

- Water system intertie with the San Francisco Airport
- Water storage tanks seismic upgrades, retrofits and replacement
- Actively participate in the plan maintenance protocols

Relevant sections of the County Hazard Mitigation Plan are included in the Appendix K.

8.12.2 SFPUC Preparations

Because the City relies on the RWS, it is important to note the procedures in place for the SFPUC given a catastrophic water supply interruption. For emergency response, the SFPUC has prepared the Regional Water System Emergency Response and Recovery Plan (ERRP). The purpose of this document is to describe the SFPUC RWS emergency management organizations, along with their roles and responsibilities, and other emergency management procedures. These procedures outline how to respond to and recover from a major seismic event, or other type of natural disaster.

The SFPUC has also prepared the Regional Water System Notification and Communications Plan. This plan provides contact information, procedures, and guidelines to follow when a potential or actual water quality issue occurs.

Increasing the reliability of the RWS has been prepared for through the WSIP that has been undertaken by the SFPUC. Several of these projects have been focused on increasing the seismic reliability of several key water system features.

8.13 Minimum Supply Next Three Years

The minimum anticipated potable water supply for the next three years would occur during a multiple dry year water scenario as presented in Section 7. During this type of event, the City would receive its full average base year water deliveries from SFPUC for the first year and second consecutive dry years, then roughly 60% of normal for the third year. The total volumes available during these years are shown in Table 8-7 below.

Table 8-7. Minimum water supply for the next three years.

Year	2021	2022	2023
Available Water Supply (MG)	712	785	416
NOTES: UWMP Guidebook Table 8-4			

9. Demand Management Measures

This section provides an overview of the City's efforts to promote water conservation and reduce demands on water supplies.

9.1 Water Conservation Background

In compliance with applicable State and local laws, the City has an ongoing Water Conservation Program. Chapter 9 of Title 8 of the Millbrae Municipal Code establishes the City's program. Ordinance No. 593, found in Appendix L amended the Code to update the City's program in 1993. Local and regional water conservation programs are being implemented. The drought regulations adopted in 2014 and 2015 and extended drought regulations helped to reduce water use in the City. In addition, the implementation and continuing programs with BAWSCA have continued to contribute towards water conservation. In addition, the CALGreen Building Codes, which the City began adopting in 2011 (Appendix L) will continue to reduce water consumption in the City through increased plumbing code requirements.

9.2 Regional Coordination on Demand Management

The City participates in a number of regional programs in coordination with BAWSCA and its other member agencies. The City also looks for opportunities to work with other water agencies, including the SFPUC, to leverage available resources to implement water use efficiency projects. Cooperative programs with BAWSCA include school education; landscape budgets; rain barrel, smart irrigation controller, and lawn replacement rebates; water loss management; and medium- and long-term planning efforts.

BAWSCA and its participating member agencies are part of the Bay Area Integrated Regional Water Management Plan (see Section 6.10). Together with other major Bay Area water utilities, BAWSCA has submitted a Proposition 1 Implementation Grant proposal to support regional water conservation efforts that offer long-term water savings. The project includes a package of water conservation programs to improve water use efficiency throughout the San Francisco Bay Area. The project provides direct funding, financial incentives (rebates), and/or subsidies for the implementation of programs that achieve reduced water demand by all classes of users (residential, commercial, industrial, institutional, and system water loss). Five specific programs were selected for the project because they were determined to provide the most quantifiable and sustainable water savings and support compliance with the upcoming statewide urban water use objectives. These programs include:

- Qualified Water Efficient Landscaper training program
- Smart irrigation controller rebates
- Lawn replacement rebates
- Flowmeter rebates
- Component analysis to support system water loss management

The City will continue participation in the rebate programs for the near term as described in the Section 9.3.8.

Since the 2015 UWMP, the BAWSCA Demand Study was implemented in coordination with BAWSCA and its member agencies to identify additional measures for the City to meet ever increasing goals for additional water conservation and water allocations. The Demand Study included water conservation savings for

programs planned for future implementation. Specific measures identified for implementation by the City and associated water savings are presented in Table 9-1.

Table 9-1. Water conservation measures.

Conservation Measure	Description	Anticipated Savings
CII Water Survey	Program provides free water surveys to CII customers to evaluate ways for the business to save water and money. The surveys may target large accounts (e.g., accounts that use more than 5,000 gallons of water per day) only such as hotels, restaurants, stores and schools. Emphasis may be on supporting the top 25 users for each individual water agency.	Savings of 15% per site for 0.5% of accounts annually.
Large Landscape Outdoor Water Surveys	Outdoor water audits offered for existing large landscape customers. Normally those with high water use are targeted and provided a customized report on how to save water. All large multifamily residential, CII, and public irrigators of large landscapes would be eligible for free landscape water audits upon request. Tied to the Water Budget Program.	Savings of 15% for 0.8% of accounts annually.
Large Landscape (Waterfluence) Program	Website provides feedback on irrigation water use (budget vs. actual). Current Waterfluence Program.	Savings of 30% for 5% of accounts.
Lawn Be Gone! And Rainwater Capture Rebates	Provide a per square foot incentive for to remove turf and replace with low water use plants or permeable hardscape. Landscape conversion includes conversion of turf to lower-water-using turf varieties. Rebate based on dollars per square foot removed, and capped at an upper limit for single family residence, multifamily residence and/or commercial account.	Savings of 18% over 5 years for 0.13% of accounts annually.
Residential Water-Savings Devices Giveaway	Utility provides free high efficiency showerheads, shower timers, toilet leak detection tablets, and aerators in bulk and gives them away at Utility office and community events.	Savings of 6.9% for 1.25% of user accounts annually.

Conservation Measure	Description	Anticipated Savings
Flowmeter Rebate	Program provides rebates for flow measuring devices which inform customers of their water use and provide leak detection and remote shutoff with a smart phone interface. Devices are targeted to residential users and can monitor indoor only, whole site meter use, and/or irrigation only use.	Savings of 7% of total use for 0.5% of user accounts annually.
New Development Submetering	This is an existing code that, as of January 1, 2018, requires the metering of individual units in new multifamily, condos, townhouses, mobile-home parks and business centers (less than four stories and with water heater in the units).	Savings of 22% per account on indoor uses only for 50% of new multifamily accounts.
New Development Hot Water On Demand	Existing code which requires new development to include efficient hot water on demand systems. Systems reduce hot water waiting times. Coordination with building department and tracking.	Savings of 4.3 gpd for 100% of new residential accounts.
Public & School Education	Program includes in-person and online outreach to residential customers, schools and all CII customers, landscapers and contractors. Outreach includes tools and resources specific to outdoor water use efficiency (e.g. WaterWise gardening tool and landscape watering calculator) as well as general information on water conservation through community events, websites, and social media.	Savings of 1% on common indoor water uses for 5% of user accounts.

9.2.1 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.
- [8]
- 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*.

9.3 Demand Management Measures for Retail Agencies

The following sections describe the individual demand management measures used by the City.

9.3.1 Water Waste Prevention Ordinance

The City's Water Conservation Ordinance, Title 8, Chapter 8.45, has been in place since 1976 and prohibits water waste. The ordinance includes a number of restrictions including the following:

- The prompt repair of broken or leaky plumbing, sprinklers, or irrigation systems;
- Positive shutoff valves for hoses;
- Disallowing flooding or runoff in gutters, driveways, or streets;
- Use of recycled water for all cooling purposes and for car washes; and
- All connections to the City water system must be metered with City-approved meters.

These are just a sampling of the restrictions included in the ordinance; see Appendix L for a full listing of restrictions. In addition to the restrictions listed above, the ordinance includes other water use conservation measures that are encouraged, which include:

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

- Watering/irrigation time is recommended between 6 pm and 10 am;
- Sidewalks, driveways, and other hard surfaces should not be cleaned from hoses or faucets;
- Restaurants and similar facilities should only serve water upon customer request; and
- Water used to maintain decorative fountains should be recycled.

The City also follows the CALGreen Building Code for indoor water use conservation.

In addition to the Water Conservation Ordinance, the City in 2014 and 2015 adopted and implemented drought regulations per the State's imposed regulations. Additionally, the City declared Stage 2 of its Water Shortage Contingency Plan. These regulations were lifted in June 2017.

9.3.2 Metering

The City meters water use for all customers. The water rates, found in Appendix E, are uniform and include a service charge based on the meter size. The City has a program to test, repair, and replace meters.

9.3.3 Conservation Pricing

As noted previously, the City's current water rates are uniform and based on per unit (100 cubic feet) usage. As such, regardless of the volume used the City's metered customers pay for what they use. As shown in the water rates attached in Appendix E, the water rates have increased over five-year period ending in 2019. Due to COVID-19, the rate increase that was supposed to take effect on July 1, 2020 was deferred. At present, the City's water rates are in line with average County-wide water rates. With the rate increases, the City has noticed increased conservation from City water users.

True conservation pricing would include tiers of water usage, where per volume charges would increase as more water was used by a customer. These types of rate structures can be very effective for water conservation and can also be incorporated into a City's Drought Contingency Plan to provide a mechanism for increased conservation during supply shortages. The City has in the past and is currently evaluating tiered water rates.

9.3.4 Public Education and Outreach

Public outreach, information, and educational programs are the backbone of the City's Water Resources & Conservation Program. Water conservation, and the City's available resources to encourage conservation, is promoted to residential and commercial customers through a variety of outreach efforts and media types. These types include displays, printed media, presentations, staffing events, and electronic and social media.

Visitors to City Hall receive an information and resources packet that includes various printed brochures on water conservation topics and free water savings devices including low-flow kitchen and bathroom aerators, low-flow showerheads, shower timers, toilet leak detection tablets, moisture meters, and a flow meter displacement bag. Outreach is conducted at a number of City-wide annual events including the Art and Wine Festival, the Health and Wellness Fair, the Lunar New Year Festival, Beats & Brews Concerts, and the Japanese Culture Festival. Educational tables are also staffed in the Downtown during seasonal events such as Earth Week and Pollution Prevention Week. The direct contact between City conservation employees and volunteers provides a great opportunity to have interactive conversations with the community while providing educational handouts in person.

Electronic media outreach promotes available conservation resources and other timely information. The media postings include the City's Facebook, Twitter and NextDoor pages, airing public service announcements, and showing environmental movies on the local cable channel MCTV Channel 27. General information topics include workshops, water savings devices and fixtures, available rebates, and other water savings tips will be promoted. The City also has a dedicated water conservation hotline and an information water conservation webpage to assist customers. A number of resources, including an online water-wise gardening tool, free guides and brochures, tips, and links to other agencies water conservation resources have been made available.

Printed media outreach includes placing regular messages on residential and commercial utility bills and brochure distribution. The City develops and distributes a variety of brochures and literature to the community on water conservation topics, resources, and water efficient landscaping. A water-wise street banner is placed Downtown on a regular basis. Water conservation tips are also included in the annual Consumer Confidence Report. (Appendix G) that is mailed to each household, and in informational packets that are sent to new residents and businesses in the City.

Presentations are also conducted with community groups to highlight the many programs and resources available. Attendees receive program handouts and other printed media mentioned above.

The City provides also provides school assemblies which are conducted by local performers, EarthCapades. These assemblies combine age-appropriate state science standards to teach environmental awareness, water science, and conservation, while engaging the audience with music, juggling, and humor. At these presentations program handouts are given to students and their families.

Educational outreach is also performed through the Library. Students are reached through a cooperative education program which includes providing water savings handouts at their after-school programs and showing environmental movies. Periodically, the City has staffed a booth at the Library entrance to further engage students and the community.

9.3.5 Programs to Assess and Manage Distribution System Water Loss

As noted in Section 4.5, the City's water losses for the year 2019 were approximately 52 MG, which is 7.6% of the total water purchased from SFPUC during the same time period.

The City monitors the water losses regularly, and repairs system leaks promptly upon detection. The City is also continuing several projects that will work to reduce system water losses. The City prepares annual water audits, which are conducted using the AWWA water audit methodology and validated by a third party. In addition, the City participates in BAWSCA's Loss Evaluation and Knowledge work group to support water loss management efforts.

During Fiscal Year 2015-2016, the City implemented a water main replacement program and replaced 8,000 feet of piping at a cost of $2,495,000. When funding is available, there is a five-year plan to continue with this program. This program reduces or eliminate leaks from many older pipes. The intent of this program is to replace water main pipes before a major break occurs.

In addition to the water main replacement program, the City is actively testing and replacing commercial water meters each year (three-quarter, one-inch meters, and other size meters as well). These new meters will increase the accuracy of water used by customers and help close the gap between real and apparent water system losses.

9.3.6 Water Conservation Program Coordination and Staffing Support

The City employs a water conservation coordinator, and has since 1991. Currently, the Environmental Programs Manager serves in this position and oversees the water conservation efforts. There is also one part-time assistant who periodically works on water conservation but mostly works on other environmental programs, and there is one administration staff member who assists with the rebate program and answers the hotline as a part of their many duties in the City Public Works Department. The Environmental Programs Manager oversees the Water Resources & Conservation Program, which includes implementing the many programs for water conservation, and complying with conservation reporting requirements. The City will continue to employ staff for these purposes in the future.

In 2020-2021, the budget for these operations was $120,214. The budget includes costs for personnel, services, and necessary supplies.

9.3.7 Other Demand Management Measures

In addition to the active conservation DMMs described above, the City implements additional programs, which are described in this section.

Residential Landscape Education

In coordination with BAWSCA, water-wise workshops are held for the community in the spring and fall on native and low-water use plants, landscape design, sustainable gardening, efficient irrigation systems, rainwater harvesting, and graywater reuse. The workshops are widely advertised and well attended. Participants are provided with water conservation handouts and water saving devices. In addition, water-wise landscaping brochures are distributed to the public at various locations and at events, which are also posted on the City's website.

Water-Wise Landscape Award Program

The City's Community Enhancement Advisory Committee has a Water-Wise Landscape Award Program which provides a quarterly award to a homeowner that has a water-wise landscape. The award winners receive recognition at a City Council meeting and a plaque to put in their yard.

City Facility Water Conservation Program

The City leads by example with their environmental programs, including for water conservation. An example of this is that City Hall and the Library are certified Green Businesses. A water audit was done previously for City facilities to assess water use and the flow of various fixtures. Water saving devices were installed, including showerheads and faucet aerators, at all City facilities. City facilities will continue to be monitored. In addition, the parks and all of the sports fields use efficient weather-based irrigation systems, and some of these locations are a part of the Large Landscape Water Budget Program.

9.3.8 Residential Conservation Programs

The largest customer class in the City service area is residential, which includes single family, duplex, and multi-family meter accounts. The City has approximately 5,780 single family (SF) and 280 multi-family (MF) residential accounts. Residential accounts make up approximately 92% of total water system connections and 65% of total gross water demand, based on data for the fiscal year 2019-2020. Because residential water use is such a large portion of the total demand, the City has focused the majority of its conservation efforts on residential use. Summaries of the residential programs are found below.

Residential Assistance Program and Water Surveys

The City distributes a variety of residential plumbing retrofit devices and materials to help conserve water. These devices are available as a package at the Public Works Department counter, and they are also distributed at various community events and fairs throughout the year. The contents of these packages include:

- Water efficient showerheads;
- Kitchen and bathroom sink aerators;
- Flow meter displacement bags;
- Shower timers;
- Moisture meters;
- Toilet leak detection tablets; and
- Literature on water conservation and workshops.

The City distributes some of the lowest-flow devices (faucet aerators and showerheads) available. Toilet tank leak detection tablets are widely distributed and test for leaks that are neither seen nor heard, which often time are the most problematic for homeowners. Shower timers encouraging five minute or less showers and moisture meters are also distributed.

The City distributes surveys upon request to residential customers. Customized water usage reports are provided upon request to customers that show the trend over the last four years on their water use. The water survey addresses indoor and outdoor water use and includes information on the free water saving devices and rebate programs. For indoor water use, the survey asks about the:

- Gallons per flush (GPF) of the household's toilets;
- Gallons per minute (GPM) of the kitchen and bathroom faucets; and
- GPM of the showerheads.

For outdoor water use, the survey inquires about:

- How lawns and landscapes are watered (irrigation or hose);
- How often and how long landscaping is watered, and the type of plants; and
- Lawn and landscaping areas and if pools are on-site.

The survey also provides information on how to read water meters and refers to another document for how to find leaks.

The Water-Wise newsletter is distributed to the community through different means and includes information on the rebate programs, water saving tips, water efficient landscaping, and local regulations. In addition, water audits are performed for businesses as a part of the Green Business Certification process, and also when providing assistance on conserving water.

Rebate Programs

The City has had rebate programs in place for a number of years. In the last few years, rebate programs for high-efficiency clothes washers and high efficiency toilets were discontinued. These programs ended regionally due to Pacific Gas & Electric (PG&E) ending the program for washers and saturation for HETs,

as well as due to the market having efficient toilets due to building codes. The City also had a nozzle head replacement program in place from 2015-2018 where residents could obtain free nozzle heads.

Rainwater Harvesting Rain Barrel and Cistern Rebate Program

The City has provided rebates for the purchase and installation of rain barrels and cisterns since 2012. In 2014, the City joined the regional rebate program with BAWSCA and San Mateo County's Water Pollution Prevention Program to offer rain barrel rebates. In 2020, this program expanded to include larger rainwater harvesting barrels and cisterns.

Lawn Be Gone! Rebate Program

The City started participating in the Lawn Be Gone! Rebate Program in 2020 in coordination with BAWSCA to provide rebates tor residents for converting lawn into water-wise landscaping by planting native and drought tolerant plants. This program also includes providing rebates for installing rain gardens.

Smart Irrigation Controller Rebate Program

The City started participating in the Smart Irrigation Controller Rebate Program in 2020 in coordination with BAWSCA by providing an instant rebate for residents to purchase the Rachio 3 smart controller.

New Residential Development

The City adopted a California Green Building Standard in 2011. The City previously adopted an Indoor Water Use Efficiency Ordinance in 2010. Both of these policies reduced water consumption through the increased plumbing code requirements.

The 2010 California Green Building Standards Code (CALGreen Code) went into effect in January 2011 and included a 20% reduction in indoor water use, as well as dedicated meter requirements and regulations addressing landscape irrigation and design. Local jurisdictions, at a minimum, had to adopt the mandatory measures. CALGreen Code also identified voluntary measures that set a higher standard of efficiency, which could also be adopted.

The City's adopted Green Building Standard set forth minimum green building requirements within the City of Millbrae for all construction projects requiring a building permit. This ordinance incorporated all of the Mandatory Measures of the 2010 California Green Building Code and added additional requirements for additions and remodel projects. The Green Building Standard also included green building compliance for non-residential projects. In 2019, the City adopted the new CALGreen Code Green Building requirements and since then has followed that for all affected projects/developments and the respective water conservation measures.

9.3.9 Commercial, Industrial, and Institutional (CII) Conservation Programs

Based on the 2019-2020 fiscal year water delivery data, the number of CII customers in the City service area is 339, accounting for approximately 5.1% of connections and 20% percent of total gross demand. There is no large industry in the City service area, thus the number of industrial customers is reported as zero. Commercial accounts mainly include commercial, restaurants, and bars. Institutional accounts include the City, schools, and churches.

Similar to the residential programs noted above, the City provides water audits, water saving devices and other resources for commercial accounts. City staff continues to work with larger water account users, which primarily includes the local hotels/motels. Hotels/motels have also been provided with Project

Planet linen reuse and towel reuse cards for guest rooms. These cards are helpful in encouraging guests to reuse these items, which help to save water attributed to washing machine use.

Large Landscape Conservation Program

In the 2020 fiscal year, the City delivered approximately 52 MG of potable water to irrigation accounts. Currently, there are 94 irrigation customers (parks, golf courses, and other irrigation accounts), accounting for approximately 1.4% of connections and 7.6% of total demand.

The City participates in a regional large landscape water budget program which is administered by BAWSCA. This includes providing customers with customized water budgets each billing period based on weather conditions and site characteristics. The program also provides site surveys in which an irrigation expert visits selected sites to collect information and provide advice to improve irrigation efficiency and scheduling. Participants receive regular reports showing actual water use in comparison to provided water budgets and the lost dollar amount for going over budget.

The City has promoted regional landscape irrigation auditor workshops for landscape professionals and irrigation workshops for the community.

9.4 Implementation over the Past Five Years

This section presents and discusses how DMMs have been implemented over the past five years. This discussion includes many of the DMM's presented in the previous sections.

Pursuant to CWC section 10631, the DMMs implemented over this time frame will be discussed in the context of the nature and extent to which they have been implemented. For the purpose of this section, the nature of a DMM refers to specifics about how the program works, and the extent refers to the scale of the implementation.

9.4.1 Green Building Codes

The City adopted the most recent CALGreen Building Codes in 2019, which became effective on January 1, 2020.

9.4.2 Drought Emergency Regulations

The City implemented many measures and programs to help reduce municipal water demand during the recent drought. Listed below are the measures that were implemented from 2014 through 2017, when drought emergency regulations were lifted.

1. Watering of grass and ornamental landscapes is limited to two days per week as follows:
    a. Odd numbered addresses: Monday and Thursday
    b. Even numbered addresses: Tuesday and Friday
    c. No addresses, such as medians and parks: Monday and Thursday
        i. Water accounts that use an irrigation meter and 250 units of water or more per year may apply for the Alternate Irrigation Plan program to achieve a 25% water use reduction.
2. Watering of grass and ornamental landscapes is only allowed between 6 p.m. and 10 a.m.
3. Watering of grass and ornamental landscapes is prohibited during and 48 hours following rain.

4. Hoses used for any purpose must be fitted with shut-off nozzles.
5. Use of water is not allowed which results in flooding or runoff in gutters, driveways or streets.
6. Washing of hard surfaces is prohibited, including but not limited to driveways, patios, parking lots or other paved surfaces, and buildings.
7. Fountains or decorative water features are prohibited, unless the water is recirculated.
8. Restaurants and anywhere food or drink are served can only serve drinking water upon request.
9. Hotels and motels must offer guests the option of not washing towels and linens daily.

As noted above, the City has worked with larger irrigation accounts more closely to achieve water use reductions. The approach for achieving these reductions was through the voluntary Alternate Irrigation Plan (AIP). Four large irrigation accounts participated in the AIP program during the drought, and all four participants achieved the required 25% water use reduction goals through their proposed actions.

9.4.3 Stage 2 Water Shortage Contingency Plan Regulations

In addition to the drought regulations that have been implemented, the City enacted Stage 2 of their Water Shortage Contingency Plan on May 26, 2015. The resolution to enact Stage 2 of the WSCP can be found in Appendix M. These measures remained in place into 2017 and included:

- All water use restrictions for Stage 1;
- Draining and refilling of swimming pools prohibited;
- Water efficient indoor fixtures should be used, including, but not limited to, faucet aerators and showerheads (available for free at City Hall's Public Works Counter);
- Use of drip and other low volume irrigation systems encouraged;
- Appropriate use of graywater encouraged;
- Large water users must audit premises and repair leaks; and
- All customers encouraged to read meters and regularly check for leaks.

9.4.4 Municipal Operations

The City recognizes their responsibility to set an example for conservation. During the drought years, several measures were put in place in order to reduce municipal water demand. The City:

- Eliminated unidirectional hydrant flushing;
- Started using water from dead-end hydrants where possible to water the parks (using a water tanker truck);
- Reduced dead-end water main flushing from quarterly to twice a year and reduced the flushing time;
- Had the street sweeper start filling up at dead end hydrants when possible;
- Used the water discharged from the Helen Tank for watering the medians;
- Minimized water use for cleaning vehicles;
- Adjusted the City's irrigation controllers to reduce watering by 25%;

- Updated the remaining irrigation controllers with CalSense weather based controllers and switched older nozzle heads with more water efficient rotating nozzle heads;
- Stopped power washing of sidewalks;
- Used recycled water in the Water Pollution Control Plant (WPCP) operations for cleaning belts and the facility;
- Installed water saving fixtures, including low flow aerators and showerheads, inside City facilities;
- Re-certified City Hall and the Library as Green Businesses in 2013 and an Environmental Policy was also approved that includes implementing water conserving measures for City operations;
- Conducted outreach and education for employees on the drought regulations and conserving water;
- Enacted a program where water meters are evaluated for accuracy;
- Installed smart/weather based irrigation control systems in most of the parks and sports fields. Staff checks irrigation nozzle heads on a regular basis for missing parts or broken fixtures to reduce water waste. Staff review water budget allocations at identified sites to ensure compliance with water budgets; and
- Used drought tolerant plants in landscaped areas.

9.4.5 Education and Outreach

The education and outreach discussed in Section 9.3.4 above has been implemented throughout the past five years. To demonstrate the nature and extent of the outreach the City has performed, the City generated materials on water conservation and held workshops.

As part of the recent drought, the City had performed extensive outreach to inform and alert customers of regulations being implemented and other pertinent information. Specific actions were taken for outreach on the drought including the related material and regulations listed below:

- Mailed two postcard mailers to all water account customers;
- Created a drought regulation fact sheet/flyer;
- Included messages on utility bills;
- Aired ads and announcements on the local cable station, MCTV Channel 27;
- Posted information on the City's website and Facebook page;
- Wrote newsletter articles, press releases, and ads;
- Put in displays in City Hall and the Library;
- Installed a sign near City Hall's fountain that stated: "This fountain is turned off due to the drought. Thank you for conserving water!";
- Placed a roadside solar digital sign stating: "We're in a serious drought. Use water wisely.";
- Made announcements at various workshops, events, meetings;
- Provided restaurants with table tent cards with the message for customers to ask for water upon request;

- Conducted outreach and provided hotels/motels with free linen and towel reuse cards for guests; and
- Included articles in the City's, Chamber of Commerce's, and Garbage/Recycling Hauler's newsletters.

9.4.6 Water Saving Devices and Rebates

For many years free water savings devices and rebates have been provided to the residents of the City through a variety of mechanisms. Fixtures are available at the City Public Works Office counter, and they have been available at City events and other gatherings. Rebates have been available through joint programs with BAWSCA and PG&E for water efficient items including toilets, clothes washers, and rain barrels/cisterns. Current rebate values for each item are shown below:

- Rain barrels: $100 , 50-99 gallons and $150 for larger rain barrels, 100-199 gallons for a maximum of two rain barrels; and
- Cisterns: $200 for one cistern, 200 plus gallons.
- Smart irrigation controllers: $82.13 instant rebate for one controller
- Turf removal rebates: $1 per square foot of turf replaced with water-efficient landscaping
- Rain Garden Rebate: $300 rebate is available for those that also participate in the turf removal program.

In fiscal years 2015 through 2020, the City has provided 7,282 water efficient devices and has issued 121 high efficiency washer rebates, 228 high efficiency toilet rebates, and 33 rain barrel rebates.

9.5 Implementation to Achieve Water Use Targets

As discussed in Section 5.6, the City is in compliance with the water use targets established as part of SB X7-7. The City's gross per capita water use for 2020 was 82 GPCD, which is 35 GPCD below its water use target. The individual DMMs employed by the City to support water use compliance with its targets are described above in Section 1.3.

Beginning in 2023, the City will be required to calculate and report on new urban water use objectives per Water Code requirements. These water use objectives will be based on specific standards for certain water use sectors. The City, in coordination with BAWSCA, has initiated efforts to prepare for these new requirements and to align its water conservation efforts with changing water use patterns and future obligations. As part of the BAWSCA Demand Study, the City evaluated conservation savings potential for a range of water conservation programs based upon the City's current and projected future water use profile. Programs identified for future implementation are described above in Table 9-1.

10. Plan Adoption, Submittal, and Implementation

This section summarizes notifications to Cities, Counties, Agencies, and the Public that have been identified as stakeholders throughout the preparation of the 2020 UWMP. All notices were made in accordance with the requirements set forth in the relevant sections of the CWC.

10.1 Inclusion of all 2020 data

This UWMP used reporting data ending in the Fiscal Year 2020, which ended in June 2020. All data included in this report is reflective of this time period, and all drafts of this document were completed with complete 2020 data.

10.2 Notice of Public Hearing

10.2.1 Notice to Cities and Counties

To remain consistent with CWC sections 10621 and 10642, the City has been timely in 2020 UWMP preparation notification. Notices of UWMP preparation were posted in the San Mateo County Daily Journal on February 6, 2021. Notices were sent to BAWSCA on February 1, 2021, to the San Mateo County Public Works Department on February 4, 2021, and the Tuolumne River Trust on February 4, 2021. These postings are well before the 60 day limit prior to the public hearing, which occurred on May 25, 2021. Postings of UWMP preparation were posted on the City's website and Facebook page on April 13, 2021. The Millbrae City Council was also presented with an informational report on the 2020 UWMP at the April 13, 2021 Council Meeting.

Notices stating the time and location of the public hearing were sent to BAWSCA, the San Mateo County Public Works Director, and the Tuolumne River Trust on May 13, 2021. Table 10-1 below summarizes the City and County that were notified during this UWMP preparation process.

Table 10-1. Cities and counties notified during plan preparation.

City Name	60 Day Notice	Notice of Public Hearing
City of Millbrae (Public)	☑	☑
County Name	**60 Day Notice**	**Notice of Public Hearing**
San Mateo County	☑	☑
NOTES: UWMP Guidebook Table 10-1		

10.2.2 Notice to the Public

As noted in Section 2.5.2, the City published Plan preparation in the local newspaper on February 6, 2021 and Public Hearing notices in the local newspaper for two consecutive weeks. The notices were published in the San Mateo County Daily Journal on the dates May 13th and 20th (2021). A copy of the public hearing notice published in the newspaper can be found in Appendix B. A notice was posted on the City's Facebook page and website in May 2021.

10.3 Public Hearing and Adoption

The 2020 Draft UWMP was posted on the City's website by May 13, 2021 for public review. The City council adopted the 2020 UWMP in a session immediately following the public review hearing on May 25, 2021. The Resolution that was adopted by the City Council on the date of the hearing can be found in Appendix C.

10.4 Plan Submittal

Pursuant to CWC 10621, this UWMP has been submitted to DWR through the WUEdata submittal tool by July 1, 2021. Submittal at this time is consistent with CWC 10644, as adoption of the Plan occurred on May 25, 2021, which is within 30 days of the deadline submittal date to DWR.

To remain consistent with CWC 10644, a hard copy of the Plan was sent to the California State Library within 30 days after Plan adoption.

To remain consistent with CWC 10635, the Plan will be made available to the public and San Mateo County within 60 days of the submittal date to DWR.

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Appendix A- DWR UWMP Checklist

Appendix F: UWMP Checklist

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Chapter 1	10615	A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses, reclamation and demand management activities.	Introduction and Overview	Executive Summary: System Supplies Water Shortage Contingency Planning, and Demand Management Measures
x	x	Chapter 1	10630.5	Each plan shall include a simple description of the supplier's plan including water availability, future requirements, a strategy for meeting needs, and other pertinent information. Additionally, a supplier may also choose to include a simple description at the beginning of each chapter.	Summary	Executive Summary
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

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 2.6	10620(d)(2)	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	Plan Preparation	Section 2.5
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	Appendix B
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 2.5.3

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
	x	Section 2.6	10631(h)	Wholesale suppliers will include documentation that they have provided their urban water suppliers with identification and quantification of the existing and planned sources of water available from the wholesale to the urban supplier during various water year types.	System Supplies	N/A
x	x	Section 3.1	10631(a)	Describe the water supplier service area.	System Description	Section 3.1
x	x	Section 3.3	10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 3.3
x	x	Section 3.4	10631(a)	Provide population projections for 2025, 2030, 2035, 2040 and optionally 2045.	System Description	Table 3-2
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 3.5.1
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 3.5
x	x	Section 3.5	10631(a)	Describe the land uses within the service area.	System Description	Section 3.5.2

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 4.2	10631(d)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Figure 2 Table 4-1 Table 4-3
x	x	Section 4.2.4	10631(d)(3)(C)	Retail suppliers shall provide data to show the distribution loss standards were met.	System Water Use	Section 4.5
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 4.7
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 4.3 Section 4.6
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	Table 4-5
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 4.8 Table 4-9
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 4.9

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x		Chapter 5	10608.20(e)	Retail suppliers shall provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.	Baselines and Targets	Section 5.4 Section 5.5 Section 5.6
x		Chapter 5	10608.24(a)	Retail suppliers shall meet their water use target by December 31, 2020.	Baselines and Targets	Section 5.6
	x	Section 5.1	10608.36	Wholesale suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their retail water suppliers achieve targeted water use reductions.	Baselines and Targets	N/A
x		Section 5.2	10608.24(d)(2)	If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.	Baselines and Targets	N/A

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x		Section 5.5	10608.22	Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5-year baseline. This does not apply if the suppliers base GPCD is at or below 100.	Baselines and Targets	Section 5.5
x		Section 5.5 and Appendix E	10608.4	Retail suppliers shall report on their compliance in meeting their water use targets. The data shall be reported using a standardized form in the SBX7-7 2020 Compliance Form.	Baselines and Targets	Section 5.6
x	x	Sections 6.1 and 6.2	10631(b)(1)	Provide a discussion of anticipated supply availability under a normal, single dry year, and a drought lasting five years, as well as more frequent and severe periods of drought.	System Supplies	Section 6.1
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

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 6.1	10631(b)(2)	When multiple sources of water supply are identified, describe the management of each supply in relationship to other identified supplies.	System Supplies	N/A
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 6.9
x	x	Section 6.2	10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 6.2
x	x	Section 6.2.2	10631(b)(4)(A)	Indicate whether a groundwater sustainability plan or groundwater management plan has been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	System Supplies	Section 6.2
x	x	Section 6.2.2	10631(b)(4)(B)	Describe the groundwater basin.	System Supplies	N/A

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 6.2.2	10631(b)(4)(B)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the supplier has the legal right to pump.	System Supplies	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

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 6.2.5	10633(b)	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	System Supplies (Recycled Water)	Section 6.5.2
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
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 6.5.4
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)	Table 6-3
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

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 6.2.5	10633(g)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.6
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
x	x	Section 6.2.8, Section 6.3.7	10631(f)	Describe the expected future water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and for a period of drought lasting 5 consecutive water years.	System Supplies	Section 6.8
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 6.10

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 7.2	10634	Provide information on the quality of existing sources of water available to the supplier and the manner in which water quality affects water management strategies and supply reliability	Water Supply Reliability Assessment	Section 7.1.1
x	x	Section 7.2.4	10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water Supply Reliability Assessment	Section 7.6
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	Table 7-5 Table 7-6 Table 7-7 Table 7-9 Table 7-10
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	Table 7-11

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 7.3	10635(b)(1)	Include a description of the data, methodology, and basis for one or more supply shortage conditions that are necessary to conduct a drought risk assessment for a drought period that lasts 5 consecutive years.	Water Supply Reliability Assessment	Section 7.8
x	x	Section 7.3	10635(b)(2)	Include a determination of the reliability of each source of supply under a variety of water shortage conditions.	Water Supply Reliability Assessment	Section 7.7
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	Table 7-7 Table 7-10
x	x	Section 7.3	10635(b)(4)	Include considerations of the historical drought hydrology, plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.	Water Supply Reliability Assessment	Section 7.1
x	x	Chapter 8	10632(a)	Provide a water shortage contingency plan (WSCP) with specified elements below.	Water Shortage Contingency Planning	Appendix K

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Chapter 8	10632(a)(1)	Provide the analysis of water supply reliability (from Chapter 7 of Guidebook) in the WSCP	Water Shortage Contingency Planning	WSCP Table 2-2
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	WSCP Section 4.12
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	WSCP Section 2.3
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	WSCP Table 1-2

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 8.3	10632(a)(3)(A)	Define six standard water shortage levels of 10, 20, 30, 40, 50 percent shortage and greater than 50 percent shortage. These levels shall be based on supply conditions, including percent reductions in supply, changes in groundwater levels, changes in surface elevation, or other conditions. The shortage levels shall also apply to a catastrophic interruption of supply.	Water Shortage Contingency Planning	WSCP Table 3-1
x	x	Section 8.3	10632(a)(3)(B)	Suppliers with an existing water shortage contingency plan that uses different water shortage levels must cross reference their categories with the six standard categories.	Water Shortage Contingency Planning	WSCP Table 3-2
x	x	Section 8.4	10632(a)(4)(A)	Suppliers with water shortage contingency plans that align with the defined shortage levels must specify locally appropriate supply augmentation actions.	Water Shortage Contingency Planning	N/A
x	x	Section 8.4	10632(a)(4)(B)	Specify locally appropriate demand reduction actions to adequately respond to shortages.	Water Shortage Contingency Planning	Table 8-4 WSCP Section 3.2.2

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 8.4	10632(a)(4)(C)	Specify locally appropriate operational changes.	Water Shortage Contingency Planning	WSCP Section 3.2.4
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	Table 8-4
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	Table 8-4
x	x	Section 8.4.6	10632.5	The plan shall include a seismic risk assessment and mitigation plan.	Water Shortage Contingency Plan	WSCP Section 3.2.5
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	WSCP Section 3.2.3
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	WSCP Section 3.2.3

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x		Section 8.6	10632(a)(6)	Retail supplier must describe how it will ensure compliance with and enforce provisions of the WSCP.	Water Shortage Contingency Planning	WSCP Section 3.5
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	WSCP Section 3.5
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	WSCP Section 4.2
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	WSCP Section 4.3
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	WSCP Section 4.5
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	WSCP Section 4.5

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x		Section 8.8	10632(a)(8)(C)	Retail suppliers must describe the cost of compliance with Water Code Chapter 3.3: Excessive Residential Water Use During Drought	Water Shortage Contingency Planning	WSCP Section 3.5
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	WSCP Section 4.10
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	WSCP Section 3.4.4
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 N

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 8.14	10632(c)	Make available the Water Shortage Contingency Plan to customers and any city or county where it provides water within 30 after adopted the plan.	Water Shortage Contingency Planning	Appendix N
	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	Table 9-1
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 9.3
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 10.2.2

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 10.2.1	10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. Reported in Table 10-1.	Plan Adoption, Submittal, and Implementation	Table 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	Appendix B
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
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	Appendix C Appendix N

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 10.4	10644(a)	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.	Plan Adoption, Submittal, and Implementation	Appendix C
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	Table 10-1
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 10.4 Appendix C
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 10.4 Appendix C

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 10.6	10621(c)	If supplier is regulated by the Public Utilities Commission, include its plan and contingency plan as part of its general rate case filings.	Plan Adoption, Submittal, and Implementation	N/A
x	x	Section 10.7.2	10644(b)	If revised, submit a copy of the water shortage contingency plan to DWR within 30 days of adoption.	Plan Adoption, Submittal, and Implementation	N/A

Appendix B- Public Notification

ANN SCHNEIDER
Mayor

ANNE OLIVA
Vice Mayor

GINA PAPAN
Councilmember

ANDERS FUNG
Councilmember

REUBEN D. HOLOBER
Councilmember

City of Millbrae
621 Magnolia Avenue, Millbrae, CA 94030

February 1, 2021

Ms. Nicole Sandkulla
BAWSCA
Chief Executive Officer and General Manager
155 Bovet Road Suite #650
San Mateo, CA 94402

Re: Review of the City of Millbrae's Urban Water Management Plan and Water Shortage Contingency Plan

Dear Ms. Sandkulla:

This letter is to notify you that City of Millbrae will be reviewing and considering amendments and changes to its Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP). We invite your agency's participation in this process.

City of Millbrae draft 2020 UWMP and WSCP can be viewed at https://bit.ly/3oQfDJE. Our First Draft will be available in March.

City of Millbrae will make revisions to its UWMP and WSCP available for public review and will hold a public hearing later this year. BAWSCA will be given notice of the City of Millbrae's meeting in which the UWMP update and WSCP will be considered.

If you have any questions about City of Millbrae UWMP or WSCP, please contact Bill Giang, Assistant Engineer, at (650) 259-2325, bgiang@ci.millbrae.ca.us.

Sincerely,

Khee Lim
Public Works Director

ANN SCHNEIDER
Mayor

ANNE OLIVA
Vice Mayor

GINA PAPAN
Councilmember

ANDERS FUNG
Councilmember

REUBEN D. HOLOBER
Councilmember

City of Millbrae
621 Magnolia Avenue, Millbrae, CA 94030

February 4, 2021

Mr. Jimmy Tan
Public Services Director
567 El Camino Real
San Bruno, California 94066

Re: Review of the City of Millbrae's Urban Water Management Plan and Water Shortage Contingency Plan

Dear Mr. Tan:

This letter is to notify you that City of Millbrae will be reviewing and considering amendments and changes to its Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP). We invite your agency's participation in this process.

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City of Millbrae will make revisions to its UWMP and WSCP available for public review and will hold a public hearing later this year. The City of San Bruno will be given notice of the City of Millbrae's meeting in which the UWMP update and WSCP will be considered.

If you have any questions about City of Millbrae UWMP or WSCP, please contact Bill Giang, Assistant Engineer, at (650) 259-2325, bgiang@ci.millbrae.ca.us.

Sincerely,

Khee Lim
Public Works Director

ANN SCHNEIDER
Mayor

ANNE OLIVA
Vice Mayor

GINA PAPAN
Councilmember

ANDERS FUNG
Councilmember

REUBEN D. HOLOBER
Councilmember

City of Millbrae
621 Magnolia Avenue, Millbrae, CA 94030

February 4, 2021

Mr. Jim Porter
County of San Mateo
Public Works Director
555 County Center 5th Floor
Redwood City, CA 94063

Re: Review of the City of Millbrae's Urban Water Management Plan and Water Shortage Contingency Plan

Dear Mr. Porter:

This letter is to notify you that City of Millbrae will be reviewing and considering amendments and changes to its Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP). We invite your agency's participation in this process.

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If you have any questions about City of Millbrae UWMP or WSCP, please contact Bill Giang, Assistant Engineer, at (650) 259-2325, bgiang@ci.millbrae.ca.us.

Sincerely,

Khee Lim
Public Works Director

ANN SCHNEIDER
Mayor

ANNE OLIVA
Vice Mayor

GINA PAPAN
Councilmember

ANDERS FUNG
Councilmember

REUBEN D. HOLOBER
Councilmember

City of Millbrae
621 Magnolia Avenue, Millbrae, CA 94030

February 4, 2021

Mr. Syed Murtuza
Public Works Director
501 Primrose Road
Burlingame, CA 94010

Re: Review of the City of Millbrae's Urban Water Management Plan and Water Shortage Contingency Plan

Dear Mr. Murtuza:

This letter is to notify you that City of Millbrae will be reviewing and considering amendments and changes to its Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP). We invite your agency's participation in this process.

City of Millbrae draft 2020 UWMP and WSCP can be viewed at https://bit.ly/3oQfDJE. Our First Draft will be available in March.

City of Millbrae will make revisions to its UWMP and WSCP available for public review and will hold a public hearing later this year. The City of San Bruno will be given notice of the City of Millbrae's meeting in which the UWMP update and WSCP will be considered.

If you have any questions about City of Millbrae UWMP or WSCP, please contact Bill Giang, Assistant Engineer, at (650) 259-2325, bgiang@ci.millbrae.ca.us.

Sincerely,

Khee Lim
Public Works Director

ANN SCHNEIDER
Mayor

ANNE OLIVA
Vice Mayor

GINA PAPAN
Councilmember

ANDERS FUNG
Councilmember

REUBEN D. HOLOBER
Councilmember

City of Millbrae
621 Magnolia Avenue, Millbrae, CA 94030

February 4, 2021

Mr. Peter Drekmeier
Tuolumne River Trust, Policy Director
312 Sutter Street, Suite 402
San Francisco, CA 94108

Re: Review of the City of Millbrae's Urban Water Management Plan and Water Shortage Contingency Plan

Dear Mr. Drekmeier:

This letter is to notify you that City of Millbrae will be reviewing and considering amendments and changes to its Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP). We invite your agency's participation in this process.

City of Millbrae draft 2020 UWMP and WSCP can be viewed at https://bit.ly/3oQfDJE. Our First Draft will be available in March.

City of Millbrae will make revisions to its UWMP and WSCP available for public review and will hold a public hearing later this year. The City of San Bruno will be given notice of the City of Millbrae's meeting in which the UWMP update and WSCP will be considered.

If you have any questions about City of Millbrae UWMP or WSCP, please contact Bill Giang, Assistant Engineer, at (650) 259-2325, bgiang@ci.millbrae.ca.us.

Sincerely,

Khee Lim
Public Works Director

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VIVIAN PENG
CITY OF MILLBRAE
621 MAGNOLIA AVE.
MILLBRAE, CA 94030

CNS 3438498

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Notice Type: HRG NOTICE OF HEARING

Ad Description CITY OF MILLBRAE UPDATE OF URBAN WATER MANAGEMENT PLAN

To the right is a copy of the notice you sent to us for publication in the SAN MATEO DAILY JOURNAL. Please read this notice carefully and call us with any corrections. The Proof of Publication will be filed with the County Clerk, if required, and mailed to you after the last date below. Publication date(s) for this notice is (are):

02/06/2021

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CITY OF MILLBRAE UPDATE OF URBAN WATER MANAGEMENT PLAN

City of Millbrae will be reviewing and updating its Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) in 2021. The UWMP was last updated in 2015. We encourage all of our customers to participate in this review process. We will make revisions to the UWMP and the WSCP available for public review and will hold a public hearing on both plans in 2021. The current UWMP is available here: https://bit.ly/3oQfDJE. If you would like to learn more about the UWMP and WSCP, the schedule for revising and adopting these plans, or how to participate in the process, please contact:

Bill Giang, Assistant Engineer
bgiang@ci.millbrae.ca.us
621 Magnolia Avenue,
Millbrae, CA 94030
Phone: 650-259-2325
Fax: 650-697-8158

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Vivian Peng
CITY OF MILLBRAE
621 MAGNOLIA AVE.
MILLBRAE, CA 94030

CNS 3469897

COPY OF NOTICE

Notice Type: HRG NOTICE OF HEARING

Ad Description: Notice of Public Hearing Update of 2020 Urban Water Management Plan and Water Shortage Contingency Plan

To the right is a copy of the notice you sent to us for publication in the SAN MATEO DAILY JOURNAL. Please read this notice carefully and call us with any corrections. The Proof of Publication will be filed with the County Clerk, if required, and mailed to you after the last date below. Publication date(s) for this notice is (are):

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Notice of Public Hearing Update of 2020 Urban Water Management Plan and Water Shortage Contingency Plan

CNS-3469897# SAN MATEO DAILY JOURNAL

The City of Millbrae will be reviewing and updating its Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) in 2021. The UWMP was last updated in 2015. We encourage all of our customers to participate in this review process. We will revise the UWMP and the WSCP available for public review and will be holding a public hearing on both plans in 2021. The current UWMP is available here: https://bit.ly/MILLBRAEUWMP2020

The Millbrae City Council will hold a public hearing to receive and consider input regarding the proposed revisions and updates to the UWMP for 2020, the urban water use targets for 2020, impacts to the local economy resulting from the urban water use targets, and the method for determining its urban water use target. The public hearing will be held on Tuesday, May 25, 2021, at 7:00 pm, in the City Council Chambers at the following address:

Public Hearing Location:
The City of Millbrae (Via Zoom)

https://us02web.zoom.us/j/87630924892

At this time and place, all interested persons shall have the opportunity to present their comments to the City Council.

The proposed updates to the UWMP, will be available for public review at City Hall, the City's Library and on the City's website, www.ci.millbrae.ca.us, prior to the public hearing. Comments can be provided up until the date and time of the public hearing to the contact listed below.

Contact Information:
Bill Giang, bgiang@ci.millbrae.ca.us
621 Magnolia Avenue, Millbrae, CA 94030
Phone: 650-259-2325 Fax: 650-697-8158
5/13/21

A0000057156 01

Appendix C- Resolution to Adopt the 2020 UWMP

RESOLUTION 21-32

CITY OF MILLBRAE, COUNTY OF SAN MATEO
STATE OF CALIFORNIA

***

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF MILLBRAE ADOPTING THE 2020 URBAN WATER MANAGEMENT PLAN

WHEREAS, in 1983, the California Legislature passed Assembly Bill 797, referred to as the Urban Water Management Planning Act requiring every urban water supplier serving more than 3,000 customers or providing more than 3,000 acre-feet of water annually, to prepare and adopt an UWMP every five years. Millbrae has updated and adopted its UWMP every five years as required; and

WHEREAS, SBX7-7, otherwise known as the Water Conservation Bill of 2009, also requires a public hearing to discuss the method of determining urban water use targets and the impacts to the local economy from meeting those requirements; and

WHEREAS, the City has prepared its 2020 Urban Water Management Plan pursuant to the State of California's Urban Water Planning Act; and

WHEREAS, the Urban Water Management Plan also includes, as required, a Water Shortage Contingency Plan; and

WHEREAS, the 2020 Urban Water Management Plan will facilitate local and regional water planning activities and support the City's long-term water resource planning goals; and

WHEREAS, the 2020 Urban Water Management Planning Act requires a public hearing to discuss proposed revisions and updates to the City's Urban Water Management Plan; and

WHEREAS, in accordance with applicable law, the City has prepared and circulated for public review a draft 2020 Urban Water Management Plan; and

WHEREAS, a duly noticed public hearing regarding the draft 2020 Urban Water Management Plan and water use targets required by SBX7-7 was held by the City Council on May 25, 2021, at which time all public comments were heard and considered.

NOW, THEREFORE BE IT RESOLVED THAT THE CITY COUNCIL OF THE CITY OF MILLBRAE, AS FOLLOWS:

1. The City of Millbrae does hereby approve and adopt the 2020 Urban Water Management Plan and SBX7-7 Implementation Plan and Water Use Targets entitled "City of Millbrae 2020 Urban Water Management Plan," a copy of which is on file in the office of the City Clerk, at the Public Library, and accessible on the City's website.

2. The City Clerk is hereby authorized and directed to file the City of Millbrae 2020 Urban Water Management Plan with the California Department of Water Resources by July 1, 2021, and the California State Library and the County of San Mateo within thirty (30) days of the adoption of this resolution.

3. The Public Works Director is hereby authorized and directed to implement the Urban Water Management Plan adopted hereby, including the Water Conservation Programs set forth within.

REGULARLY PASSED AND ADOPTED this 25th day of May, 2021.

Ann Schneider
Mayor

ATTEST:

6/1/2021
City Clerk

Resolution No. 21-32

I do hereby certify that the foregoing Resolution was duly and regularly passed and adopted by the City Council of the City of Millbrae this 25th day of May 2021, by the following vote:

AYES:	COUNCILMEMBERS:	Schneider, Oliva, Papan, Fung and Holober
NOES:	COUNCILMEMBERS:	None
ABSENT:	COUNCILMEMBERS:	None
ABSTAIN:	COUNCILMEMBERS:	None
EXCUSED:	COUNCILMEMBERS:	None

6/1/2021

CITY CLERK

Appendix D- Water Supply Agreement and Water Sales Contract

WATER SUPPLY AGREEMENT

between

THE CITY AND COUNTY OF SAN FRANCISCO

and

WHOLESALE CUSTOMERS
in
ALAMEDA COUNTY, SAN MATEO COUNTY AND SANTA CLARA COUNTY

JULY 2009

Rev. 1 – Amendment 1, June 2013
Rev. 2 – Attachment C Revised, September 2017

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WHOLESALE WATER SUPPLY AGREEMENT

Introductory Statement

Both San Francisco, as the Regional Water System owner and operator, and its Wholesale Customers share a commitment to the Regional Water System providing a reliable supply of high quality water at a fair price, and achieving these goals in an environmentally sustainable manner.

Article 1. Parties, Effective Date, and Defined Terms

1.01 Definitions

The capitalized terms used in this Agreement shall have the meanings set forth in Attachment A.

1.02 Parties

The parties to this Agreement are the City and County of San Francisco and such of the following entities (all of which purchase water from San Francisco) as have executed this Agreement:

Alameda County Water District
California Water Service Company
City of Brisbane
City of Burlingame
City of Daly City
City of East Palo Alto
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 San José
City of Santa Clara
City of Sunnyvale
Coastside County Water District
Estero Municipal Improvement District
Guadalupe Valley Municipal Improvement District
Mid-Peninsula Water District
North Coast County Water District
Purissima Hills Water District
Skyline County Water District
Stanford University
Town of Hillsborough
Westborough Water District

The entities listed above which have executed this Agreement shall be collectively referred to as the "Wholesale Customers."

1.03 Effective Date

A. Except as provided in subsection C, this Agreement shall become effective only when it has been approved by San Francisco and by each of the entities listed in Section 1.02 and when San Francisco and each of those entities (except for the City of Hayward) have entered into an Individual Water Sales Contract as provided in Section 9.01.

B. If San Francisco and all of the entities listed in Section 1.02 approve this Agreement and (except for the City of Hayward) an Individual Water Sales Contract on or before July 1, 2009, the effective date shall be July 1, 2009. If San Francisco and all of the entities listed in Section 1.02 approve this Agreement and (except for the City of Hayward) an Individual Water Sales Contract after July 1, 2009 but on or before September 1, 2009, the effective date shall be the date on which the last entity listed in Section 1.02 approves this Agreement and, if required, an Individual Water Sales Contract.

C. If by September 1, 2009 this Agreement has been approved by fewer than all of the entities listed in Section 1.02 or fewer than all of such entities (other than the City of Hayward) have entered into an Individual Water Sales Contract, but it has been approved by entities representing at least 75% in number and 75% of the water purchased from SFPUC by

all listed agencies during FY 2007-08 (i.e., 173.39 MGD), then San Francisco shall have the option to waive the requirement in subsection A that all listed agencies have approved this Agreement and an Individual Water Sales Contract as a condition precedent to this Agreement and any Individual Water Sales Contract becoming effective. San Francisco shall have 60 days from September 1, 2009 (i.e., until October 31, 2009) within which to decide whether or not to waive the condition. If San Francisco decides to waive the condition, those listed agencies that have approved this Agreement and Individual Water Sales Contract before October 31, 2009 will be bound thereby and this Agreement and Individual Water Sales Contracts will become effective as to them, as of the date of San Francisco's waiver. For purposes of determining whether listed agencies that have approved this Agreement represent at least 75% of the water purchased during FY 2007-08, the quantity of water attributable to each listed entity shall be as set forth on Attachment B.

D. The provisions of Article 9 that apply to fewer than all Wholesale Customers (i.e., Sections 9.02 - 9.07) shall not become effective unless San Francisco and the entity to which the section applies have each approved (1) this Agreement, and (2) the underlying Individual Water Sales Contract, unless otherwise provided in Article 9. This provision does not affect the continued enforceability of provisions in those sections that derive from independently enforceable judgments, orders or agreements.

Article 2. Term; Amendments During Term

2.01 Term

The term ("Term") of this Agreement shall be twenty five (25) years. The Term shall begin on July 1, 2009, regardless of whether the Effective Date is before or after that date, and shall end on June 30, 2034. Except as provided in Article 9, the term of all Individual Water Sales Contracts shall also begin on July 1, 2009 and end on June 30, 2034.

2.02 Extension and Renewal of Term

A. In December 2031, the SFPUC may provide written notice to the Wholesale Customers that it is willing to extend the Term of this Agreement. Between January 1, 2032 and June 30, 2032, any Wholesale Customer may accept the SFPUC's offer to extend the Term by providing a written notice of extension to the SFPUC. If such notices of extension are received from Wholesale Customers representing at least two-thirds in number as of June 30, 2032 and seventy five percent (75%) of the quantity of water delivered by the SFPUC to all Wholesale Customers during fiscal year 2030-31, the Term shall be extended for another five (5) years ("First Extension Term"), through June 30, 2039. No party to this Agreement which does not wish to remain a party during the Extension Term shall be compelled to do so by the actions of other parties under this section.

B. In December 2036, the SFPUC may provide written notice to the Wholesale Customers that it is willing to extend the Term of this Agreement. Between January 1, 2037 and June 30, 2037, any Wholesale Customer may accept the SFPUC's offer to extend the Term by providing a written notice of extension to the SFPUC. If such notices of extension are received from Wholesale Customers representing at least two-thirds in number as of June 30, 2037 and seventy five percent (75%) of the quantity of water delivered by the SFPUC to all Wholesale Customers during fiscal year 2035-36, the Term shall be extended for another five (5) years ("Second Extension Term"), through June 30, 2044. No party to this Agreement which does not wish to remain a party during the Extension Term shall be compelled to do so by the actions of other parties under this section.

C. After the expiration of the Term, and, if applicable, the Extension Terms, this Agreement may be renewed by mutual consent of the parties, subject to any modifications thereof which may be determined at that time. If fewer than all of the parties desire to renew this Agreement beyond its Term, with or without modifications, the SFPUC and the Wholesale

Customers who wish to extend the Agreement shall be free to do so, provided that no party to this Agreement which does not wish to become a party to such a renewed Agreement shall be compelled to do so by the actions of other parties under this section.

2.03 Amendments

A. Amendments to Agreement; General

1. This Agreement may be amended with the written consent of all parties.

2. This Agreement may also be amended with the written consent of San Francisco and of Wholesale Customers representing at least two-thirds in number (i.e., 18 as of July 1, 2009) and seventy five percent (75%) of the quantity of water delivered by San Francisco to all Wholesale Customers during the fiscal year immediately preceding the amendment.

3. No amendment which adversely affects a Fundamental Right of a Wholesale Customer may be made without the written consent of that customer. Amendments to Article 5 which merely affect the allocation of costs between City Retail customers on the one hand and Wholesale Customers collectively on the other, and amendments to Articles 6 and 7 which merely alter budgetary, accounting and auditing procedures do not affect Fundamental Rights and may be made with the consent of parties meeting the requirements of Section 2.03.A.2.

4. When an amendment has been approved by San Francisco and the number of Wholesale Customers required in Section 2.03.A.2, San Francisco shall notify each of the Wholesale Customers in writing of the amendment's adoption. Notwithstanding any provision of law or this Agreement, any Wholesale Customer that claims that the amendment violates its Fundamental Rights under Section 2.03.A.3, shall have 30 days from the date San Francisco delivers the notice of its adoption in which to challenge the amendment's validity through a judicial action. If no such action is filed within 30 days, the amendment shall be finally and conclusively deemed to have been adopted in compliance with this section.

B. Amendments to Article 9

1. Notwithstanding the provisions of Sections 2.03.A.2 and 2.03.A.3, any provision of Article 9 which applies only to an individual Wholesale Customer may be amended with the written concurrence of San Francisco and the Wholesale Customer to which it applies;

provided that the amendment will not, directly or indirectly, adversely affect the Fundamental Rights of the other Wholesale Customers.

2. Before making any such amendment effective, San Francisco shall give notice, with a copy of the text of the proposed amendment, to all other Wholesale Customers. The Wholesale Customers shall have 30 days in which to object to the amendment on the ground that it is not permissible under this subsection. If no such objection is received by San Francisco, the proposed amendment shall become effective. If one or more Wholesale Customers object to the amendment, San Francisco, the individual Wholesale Customer with which San Francisco intends to effect the amendment, and the Wholesale Customer(s) which lodged the objection shall meet to discuss the matter.

3. If the dispute cannot be resolved and San Francisco and the Wholesale Customer involved elect to proceed with the amendment, either San Francisco or the Wholesale Customer shall give written notice of such election to each Wholesale Customer that has objected. Any Wholesale Customer that has objected to such amendment shall have 30 days from receipt of this notice within which to commence an action challenging the validity of such amendment, and such amendment shall be deemed effective as of the end of this 30-day period unless restrained by order of court.

C. **Amendments to Attachments**. The following attachments may be amended with the written concurrence of San Francisco and BAWSCA on behalf of the Wholesale Customers:

Attachment	Name
G	January 2006 Water Quality Notification and Communications Plan
J	Water Use Measurement and Tabulation
L-1	Identification of WSIP Projects as Regional/Retail
N-1	Balancing Account/Rate Setting Calculation Table
N-2	Wholesale Revenue Requirement Schedules
N-3	Schedule of Projected Water Sales, Wholesale Revenue Requirement and Wholesale Rates
P	Management Representation Letter

Amendments to these attachments shall be approved on behalf of San Francisco by the Commission and on behalf of BAWSCA by its Board of Directors, unless the Commission by resolution delegates such authority to the General Manager of the SFPUC or the Board of Directors by resolution delegates such authority to the General Manager/CEO of BAWSCA.

D. Amendments to Individual Water Sales Contracts. Individual Water Sales Contracts described in Section 9.01 may be amended with the written concurrence of San Francisco and the Wholesale Customer which is a party to that Individual Water Sales Contract; provided that the amendment is not inconsistent with this Agreement or in derogation of the Fundamental Rights of other Wholesale Customers under this Agreement.

Article 3. Water Supply

3.01 Supply Assurance

A. San Francisco agrees to deliver water to the Wholesale Customers up to the amount of the Supply Assurance. The Supply Assurance is for the benefit of the entities listed in Section 1.02, irrespective of whether or not they have executed this Agreement. Water delivered by San Francisco to Retail Customers shall not be included in the Supply Assurance. Until December 31, 2018, the foregoing commitment is subject to Article 4.

B. Both the Supply Assurance and the Individual Supply Guarantees identified in Section 3.02 are expressed in terms of daily deliveries on an annual average basis and do not themselves constitute a guarantee by San Francisco to meet peak daily or hourly demands of the Wholesale Customers, irrespective of what those peak demands may be. The parties acknowledge, however, that the Regional Water System has been designed and constructed to meet peak daily and hourly demands and that its capacity to do so has not yet been reached. San Francisco agrees to operate the Regional Water System to meet peak requirements of the Wholesale Customers to the extent possible without adversely affecting its ability to meet peak demands of Retail Customers. This Agreement shall not preclude San Francisco from undertaking to meet specific peak demand requirements of individual Wholesale Customers in their Individual Water Sales Contracts.

C. The Supply Assurance is perpetual and shall survive the expiration or earlier termination of this Agreement. Similarly, the Individual Supply Guarantees identified in Section 3.02 and/or the Individual Water Sales Contracts are perpetual and shall survive the expiration or earlier termination of this Agreement or the Individual Water Sales Contracts.

D. Notwithstanding the Supply Assurance established by this section, the Individual Supply Guarantees identified in Section 3.02 and the Individual Water Sales Contracts, the amount of water made available by San Francisco to the Wholesale Customers is subject to reduction, to the extent and for the period made necessary by reason of water shortage, Drought, Emergencies, or by malfunctioning or rehabilitation of facilities in the Regional Water System. Any such reduction will be implemented in accordance with Section 3.11. The amount of water made available to the Wholesale Customers may not be reduced, however, merely because the water recycling and groundwater projects which the WSIP envisions to be constructed within San Francisco, or the conservation programs intended to reduce water use

by Retail Customers that are included in the WSIP, do not generate the yield or savings (10 MGD combined) anticipated by San Francisco.

3.02 Allocation of Supply Assurance

A. Pursuant to Section 7.02 of the 1984 Agreement, a portion of the Supply Assurance has been allocated among 24 of the 27 Wholesale Customers. These Individual Supply Guarantees are also expressed in terms of annual average metered deliveries of millions of gallons per day and are listed in Attachment C.

B. Three Wholesale Customers do not have Individual Supply Guarantees. The cities of San Jose and Santa Clara do not have an Individual Supply Guarantees because San Francisco has provided water to them on a temporary and interruptible basis as described in Sections 4.05 and 9.06. The City of Hayward does not have an Individual Supply Guarantee because of the terms of the 1962 contract between it and San Francisco, as further described in Section 9.03.

C. If the total amount of water delivered by San Francisco to Hayward and to the Wholesale Customers that are listed on Attachment C exceeds 184 MGD over a period of three consecutive fiscal years (i.e., July 1 through June 30), then the Individual Supply Guarantees of those Wholesale Customers listed on Attachment C shall be reduced pro rata so that their combined entitlement and the sustained use by Hayward does not exceed 184 MGD. The procedure for calculating the pro rata reduction in Individual Supply Guarantees is set out in Attachment D.

1. The provisions of this subsection C are not in derogation of the reservation of claims to water in excess of the Supply Assurance which are contained in Section 8.07. Nor do they constitute an acknowledgement by Wholesale Customers other than Hayward that San Francisco is obligated or entitled to reduce their Individual Supply Guarantees in the circumstances described herein. The provisions of this subsection C shall, however, be operative unless and until a court determines that its provisions violate rights of the Wholesale Customers derived independently of this Agreement.

2. The foregoing paragraph is not intended to and shall not constitute a contractual commitment on the part of San Francisco to furnish more water than the Supply Assurance to the Wholesale Customers or a concession by San Francisco that the provisions of this subsection violate any rights of the Wholesale Customers.

D. Notwithstanding the reservation of claims contained in Sections 3.02.C and 8.07, it shall be the responsibility of each Wholesale Customer to limit its purchases of water from San Francisco so as to remain within its Individual Supply Guarantee. San Francisco shall not be liable to any Wholesale Customer or be obligated to supply more water to any Wholesale Customer individually or to the Wholesale Customers collectively than the amount to which it or they are otherwise entitled under this Agreement due to the use by any Wholesale Customer of more water than the amount to which it is entitled under this Agreement.

E. San Francisco shall install such new connections between the Regional Water System and the distribution system of any Wholesale Customer that are necessary to deliver the quantities of water to which the Wholesale Customer is entitled under this Agreement. San Francisco shall have the right to determine the location of such connections, in light of the need to maintain the structural integrity of the Regional Water System and, where applicable, the need to limit peaking directly off of Regional Water System pipelines by a Wholesale Customer's individual retail customers, the need to ensure that a Wholesale Customer's individual retail customers have access to alternative sources of water in the event of a reduction in San Francisco's ability to provide them with water, and other factors which may affect the desirability or undesirability of a particular location. San Francisco's decisions regarding the location of new connections and the location, size and type of any new meters shall not be reviewable by a court except for an abuse of discretion or failure to provide a Wholesale Customer with connections and meters adequate to deliver the quantity of water to which it is entitled under this Agreement.

3.03 Wholesale Customer Service Areas

A. Each of the Individual Water Sales Contracts described in Section 9.01 will contain, as an exhibit, a map of the Wholesale Customer's service area. A Wholesale Customer may not deliver water furnished to it by San Francisco outside the boundary of its service area without the prior written consent of San Francisco, except for deliveries to another Wholesale Customer on an emergency and temporary basis pursuant to Section 3.07.B.

B. If a Wholesale Customer wishes to expand its service area, it shall request San Francisco's consent to the expansion and provide information reasonably requested by San Francisco about the amount of water projected to be purchased from San Francisco to meet demand within the area proposed to be added to the service area.

C. San Francisco may refuse a Wholesale Customer's request to expand its service area on any reasonable basis. If San Francisco denies a request by a Wholesale Customer to expand its service area, or fails to act on the request for six months after it has been submitted, the Wholesale Customer may challenge San Francisco's denial or delay in court. Such a challenge may be based on the Wholesale Customers' claim, reserved in Section 8.07, that San Francisco is obligated under federal or state law to furnish water, included within its Individual Supply Guarantee, to it for delivery outside its then-existing service area and that it is entitled to enlarge its service area to supply water to such customers. San Francisco reserves the right to contest any such claim on any applicable ground. This subsection does not apply to San Jose and Santa Clara, whose maximum service areas are fixed pursuant to Section 9.06.

D. This section will not prevent San Francisco and any Wholesale Customer, other than San Jose and Santa Clara, from agreeing in an Individual Water Sales Contract or an amendment thereto that:

- the Wholesale Customer may expand its service area without subsequent San Francisco approval to a definitive size but no larger, or
- the Wholesale Customer will not expand its service area beyond its present limits without San Francisco approval

and waiving the provisions of this section with respect to any additional expansion.

E. If two or more Wholesale Customers agree to adjust the boundaries of their respective service areas so that one assumes an obligation to serve customers in an area that was previously within the service area of another Wholesale Customer, they may also correspondingly adjust their respective Individual Supply Guarantees. Such adjustments are not subject to the requirements of Section 3.04 and shall require only the consent of San Francisco and the Wholesale Customers involved, so long as the Supply Assurance and the Individual Supply Guarantees of other Wholesale Customers are not affected. Service area boundary adjustments that would result in the expansion of any California Water Service Company service areas are subject to the requirements of Section 9.02.D. Any adjustment of service area boundaries that would result in the supply of water in violation of this Agreement or the Act shall be void.

F. San Francisco acknowledges that it has heretofore consented in writing to deliveries of water by individual Wholesale Customers outside their service area boundaries and

agrees that nothing in this Agreement is intended to affect such prior authorizations, which remain in full force and effect according to their terms. Such authorizations shall be identified in the Individual Water Sales Contracts.

3.04 Permanent Transfers of Individual Supply Guarantees

A. A Wholesale Customer that has an Individual Supply Guarantee may transfer a portion of it to one or more other Wholesale Customers, as provided in this section.

B. Transfers of a portion of an Individual Supply Guarantee must be permanent. The minimum quantity that may be transferred is 1/10th of a MGD.

C. Transfers of portions of Individual Supply Guarantees are subject to approval by the SFPUC. SFPUC review is limited to determining (1) whether a proposed transfer complies with the Act, and (2) whether the affected facilities in the Regional Water System have sufficient capacity to accommodate delivery of the increased amount of water to the proposed transferee.

D. The participants in a proposed transfer shall provide notice to the SFPUC specifying the amount of the Individual Supply Guarantee proposed to be transferred, the proposed effective date of the transfer, which shall not be less than 60 days after the notice is submitted to the SFPUC, and the Individual Supply Guarantees of both participants resulting from the transfer. The SFPUC may require additional information reasonably necessary to evaluate the operational impacts of the transfer. The SFPUC will not unreasonably withhold or delay its approval; if the SFPUC does not act on the notice within 60 days, the transfer will be deemed to have been approved.

E. Within 30 days after the transfer has become effective, both the transferor and the transferee will provide notice to the SFPUC and BAWSCA. By September 30 of each year during the Term, the SFPUC and BAWSCA will prepare an updated Attachment C to reflect transfers occurring during the immediately preceding fiscal year.

F. Amounts transferred will remain subject to pro rata reduction under the circumstances described in Section 3.02.C and according to the formula set forth in Attachment D.

3.05 Restrictions on Resale

Each Wholesale Customer agrees that it will not sell any water purchased from San Francisco to a private party for resale by such private party to others in violation of the Act.

Each Wholesale Customer also agrees that it will not sell water purchased from San Francisco to another Wholesale Customer without prior written approval of the SFPUC, except on a temporary and emergency basis as permitted in Section 3.07.B.2. The SFPUC agrees that it will not unreasonably withhold its consent to a request by a Wholesale Customer to deliver water to another Wholesale Customer for resale.

3.06 Conservation; Use of Local Sources; Water Management Charge

A. In order to support the continuation and expansion of water conservation programs, water recycling, and development of alternative supplies within the Wholesale Customers' service areas, the SFPUC will, if requested by BAWSCA, include the Water Management Charge in water bills sent to Wholesale Customers. The SFPUC will deliver all Water Management Charge revenue to BAWSCA monthly and shall deliver an annual accounting of Water Management Charge revenue to BAWSCA within 90 days after the end of each fiscal year. The SFPUC's obligations to collect and deliver Water Management Charge revenue to BAWSCA under this subsection are conditioned on BAWSCA's delivery to the SFPUC of an annual report describing the projects and programs on which Water Management Charge funds received from the SFPUC during the previous fiscal year were expended and an estimate of the amount of water savings attributable to conservation programs and of the yield of alternative supplies developed. This report will be due within 180 days after the end of each fiscal year during which Water Management Charge funds were received.

B. The SFPUC will work together with BAWSCA to explore ways to support water conservation programs, recycling projects, and conjunctive use alternatives outside the Wholesale Service Area, in particular projects and programs that have the potential to increase both flows in the lower Tuolumne River (downstream of New Don Pedro Reservoir) and water deliveries to the Regional Water System.

C. Each Wholesale Customer shall take all actions within its legal authority related to water conservation that are necessary to insure that the SFPUC (a) remains eligible for (i) state and federal grants and (ii) access to the Drought Water Bank operated by the California Department of Water Resources, as well as other Drought-related water purchase or transfer programs, and (b) complies with future legal requirements imposed on the Regional Water System by the federal government, the State, or any other third party as conditions for receiving funding or water supply.

D. San Francisco and each Wholesale Customer agree that they will diligently apply their best efforts to use both surface water and groundwater sources located within their respective service areas and available recycled water to the maximum feasible extent, taking into account the environmental impacts, the public health effects and the effects on supply reliability of such use, as well as the cost of developing such sources.

3.07 Restrictions on Purchases of Water from Others; Minimum Annual Purchases

A. Each Wholesale Customer (except for Alameda County Water District and the cities of Milpitas, Mountain View and Sunnyvale) agrees that it will not contract for, purchase or receive, with or without compensation, directly or indirectly, from any person, corporation, governmental agency or other entity, any water for delivery or use within its service area without the prior written consent of San Francisco.

B. The prohibition in subsection A does not apply to:

1. recycled water;

2. water necessary on an emergency and temporary basis, provided that the Wholesale Customer promptly gives San Francisco notice of the nature of the emergency, the amount of water that has been or is to be purchased, and the expected duration of the emergency; or

3. water in excess of a Wholesale Customer's Individual Supply Guarantee.

C. Alameda County Water District and the cities of Milpitas, Mountain View and Sunnyvale may purchase water from sources other than San Francisco, provided that San Francisco shall require that each purchase a minimum annual quantity of water from San Francisco. These minimum quantities are set out in Attachment E and shall also be included in the Individual Water Sales Contracts between San Francisco and each of these four Wholesale Customers. The minimum purchase requirement in these Individual Water Sales Contracts will be waived during a Drought or other period of water shortage if the water San Francisco makes available to these Wholesale Customers is less than its minimum purchase quantity.

3.08 Water Quality

A. San Francisco shall deliver treated water to Wholesale Customers (except Coastside County Water District, which receives untreated water from Crystal Springs and Pilarcitos Reservoirs) that complies with primary maximum contaminant level and treatment

technique standards at the regulatory entry points designated in the San Francisco Regional Water System Domestic Water Supply Permit (currently Permit No. 02-04-04P3810001) issued by the California Department of Public Health (CDPH).

B. San Francisco will provide notice to the Wholesale Customers in accordance with the Water Quality Notification and Communications Plan (current version dated January 2006), attached hereto as Attachment G. San Francisco will regularly update its plan in consultation with the Wholesale Customers and the CDPH. The next update will be completed one year after the Effective Date and include expanded coverage of secondary maximum contaminant level exceedances and water quality communication triggers. The plan will note that the Wholesale Customers will receive the same notification no later than the San Francisco water system (currently Permit No. 02-04-01P3810011) except for distribution-related issues.

C. San Francisco and the Wholesale Customers will establish a Water Quality Committee. The Water Quality Committee will meet at least quarterly to collaboratively address water quality issues, such as Water Quality Notification and Communications Plan updates, regulatory issues, and water quality planning studies/ applied research. San Francisco and each Wholesale Customer will designate a representative to serve on the committee. There will be a Chair and Vice Chair position for the Water Quality Committee. The Chair and Vice Chair positions will be held by San Francisco and the Wholesale Customers and rotate between them on an annual basis.

3.09 Completion of WSIP

San Francisco will complete construction of the physical facilities in the WSIP by December 31, 2015. The SFPUC agrees to provide for full public review and comment by local and state interests of any proposed changes that delay previously adopted project completion dates or that delete projects. The SFPUC shall meet and consult with BAWSCA before proposing to the Commission any changes in the scope of WSIP projects which reduce their capacity or ability to achieve adopted levels of service goals. The SFPUC retains discretion to determine whether to approve the physical facilities in the WSIP until after it completes the CEQA process as set forth in Section 4.07.

3.10 Regional Water System Repair, Maintenance and Operation

A. San Francisco will keep the Regional Water System in good working order and repair consistent with prudent utility practice.

B. San Francisco will submit reports to its Retail and Wholesale Customers on the "State of the Regional Water System," including reports on completed and planned maintenance, repair or replacement projects or programs, by September of every even-numbered year, with reports to start in September 2010.

C. San Francisco will cooperate with any audit of the SFPUC's asset management practices that may be initiated and financed by BAWSCA or the Wholesale Customers. BAWSCA may contract with third parties to conduct the audits. San Francisco will consider the findings and recommendations of such audits and will provide a written response indicating agreement with the recommendations, or disagreement with particular recommendations and the reasons why, within 90 calendar days after receipt.

D. San Francisco will continue to operate its reservoirs in a manner that assigns higher priority to the delivery of water to the Bay Area and the environment than to the generation of electric power. The SFPUC, as the Regional Water System operator, is solely responsible for making day-to-day operational decisions.

3.11 Shortages

A. Localized Water Reductions. Notwithstanding San Francisco's obligations to deliver the Supply Assurance to the Wholesale Customers collectively and the Individual Supply Guarantees to Wholesale Customers individually, San Francisco may reduce the amount of water available or interrupt water deliveries to specific geographical areas within the Regional Water System service area to the extent that such reductions are necessary due to Emergencies, or in order to install, repair, rehabilitate, replace, investigate or inspect equipment in, or perform other maintenance work on, the Regional Water System. Such reductions or interruptions may be imposed by San Francisco without corresponding reductions or interruptions in the amount of water available to SFPUC water users outside the specific geographical area where reductions or interruptions are necessary, if the system's ability to supply water outside the specific geographical area has not been impaired. In the event of such a reduction or interruption, San Francisco will restore the supply of water to the specific geographical area as soon as is possible. Except in cases of Emergencies (during which oral notice shall be sufficient), San Francisco will give the affected Wholesale Customer(s) reasonable written notice of such localized reductions or interruptions, the reasons therefor, and the probable duration thereof.

B. System-Wide Shortages and SFPUC Response to Regional Emergencies.

Following a major system emergency event, the SFPUC will work closely with its Wholesale Customers to monitor customer demand, including the demand source. In the event that any individual Wholesale Service Area or Retail Service Area customer's uncontrolled distribution system leaks could result in major water waste and endanger the supply provided by the Regional Water System as a whole, flow through some customer connections may need to be temporarily reduced or terminated. SFPUC will work closely with customers to assess the nature of the demand (e.g. fire-fighting versus leakage), so that public health and safety protection can be given top priority.

1. All emergencies that require use of non-potable source water will require use of chlorine, or other suitable disinfectant, if feasible.

2. San Francisco will use its best efforts to meet the seismic reliability and delivery reliability level of service goals adopted by the Commission in conjunction with the WSIP. San Francisco will distribute water on an equitable basis throughout the Regional Water System service area following a regional Emergency, subject to physical limitations caused by damage to the Regional Water System.

3. San Francisco's response to Emergencies will be guided by the then-current version of the ERRP. The SFPUC shall periodically review, and the Commission may amend, the ERRP to ensure that it remains an up-to-date and effective management tool.

4. The SFPUC will give the Wholesale Customers notice of any proposal to amend the ERRP in a manner that would affect them. The notice will be delivered at least thirty days in advance of the date on which the proposal is to be considered by the Commission and will be accompanied by the text of the proposed amendment.

C. Shortages Caused by Drought; Acquisition of Dry Year Supplies.

Notwithstanding San Francisco's obligations to deliver the Supply Assurance to the Wholesale Customers collectively and the Individual Supply Guarantees to Wholesale Customers individually, San Francisco may reduce the amount of water available to the Wholesale Customers in response to Drought.

1. The Tier 1 Shortage Plan (Attachment H) will continue to be used to allocate water from the Regional Water System between Retail and Wholesale Customers during system-wide shortages of 20% or less.

2. San Francisco and the Wholesale Customers may negotiate in good faith revisions to the Tier 1 Shortage Plan to adjust for and accommodate anticipated changes due to demand hardening in the SFPUC's Wholesale and Retail Service Areas. Until agreement is reached, the current Tier 1 Shortage Plan will remain in effect.

3. The SFPUC will honor allocations of water among the Wholesale Customers ("Tier 2 Allocations") provided by BAWSCA or if unanimously agreed to by all Wholesale Customers. If BAWSCA or all Wholesale Customers do not provide the SFPUC with Tier 2 Allocations, then the SFPUC may make a final allocation decision after first meeting and discussing allocations with BAWSCA and the Wholesale Customers. 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.

4. San Francisco will use its best efforts to identify potential sources of dry year water supplies and establish the contractual and other means to access and deliver those supplies in sufficient quantity to meet a goal of not more than 20 percent system-wide shortage in any year of the design drought.

5. San Francisco will cooperate with BAWSCA to improve water supply reliability. As an example of such cooperation, San Francisco may invite a representative of BAWSCA to attend and participate in meetings with third parties for development of dry year water supplies. If San Francisco does not invite a BAWSCA representative to attend a specific scheduled meeting, it will promptly (within 30 days of any such meeting) provide BAWSCA with a written or oral report on the meeting, including any decisions reached at it, as well as information about planned subsequent meetings. Progress in securing dry year water supplies will be reported to the SFPUC and the BAWSCA board of directors during the first quarter of each calendar year.

3.12 Wheeling of Water from Outside SFPUC System

Subject to the Wheeling Statute, the SFPUC will not deny use of Regional Water System unused capacity for wheeling when such capacity is available for wheeling purposes during

periods when the SFPUC has declared a water shortage emergency under Water Code Section 350 if the following conditions are met:

A. The transferor pays reasonable charges incurred by the SFPUC as a result of the wheeling, including capital, operation, maintenance, administrative and replacement costs (as such are defined in the Wheeling Statute).

B. Wheeled water that is stored in the Regional Water System spills first.

C. Wheeled water will not unreasonably: (1) impact fish and wildlife resources in Regional Water System reservoirs; (2) diminish the quality of water delivered for consumptive uses; or (3) increase the risk of exotic species impairing Regional Water System operations. The transferor may at its own expense provide for treatment to mitigate these effects.

D. Priority will be given to wheeling by Wholesale Customers or BAWSCA over arrangements for third-party public entities.

3.13 Limits on New Customers

A. New Wholesale Customers Prior to December 31, 2018. Until December 31, 2018, San Francisco will not enter into contracts to supply water to any entity other than a Wholesale Customer (whether permanent or temporary, firm or interruptible) unless:

1. It completes any necessary environmental review under CEQA of the proposed new wholesale water service obligations as provided in Section 4.07;

2. It concurrently completes any necessary environmental review under CEQA as provided in Section 4.07 and commits to make both San Jose and Santa Clara permanent customers with Individual Supply Guarantees equal to at least 9 MGD; and

3. This Agreement is amended to incorporate any commitments to proposed new wholesale customers and to San Jose and Santa Clara, and to address the effects, if any, of the new customer(s) on water supply reliability, water quality and cost to existing customers of the Regional Water System.

B. New Wholesale Customers After December 31, 2018. As of January 1, 2019, San Francisco will not enter into contracts to supply water to any entity other than a Wholesale Customer (whether permanent or temporary, firm or interruptible) unless:

1. It completes any necessary environmental review under CEQA of the proposed new wholesale water service obligations as provided in Section 4.07;

2. It concurrently completes any necessary environmental review under CEQA as provided in Section 4.07 and commits to make both San Jose and Santa Clara permanent customers with Individual Supply Guarantees equal to at least 9 MGD;

3. Doing so increases the reliability of the Regional Water System; and

4. This Agreement is concurrently amended (a) to reflect that increased reliability by means of an increased commitment by San Francisco to deliver water during Droughts and (b) to address the effects, if any, of the new customer(s) on water supply, water quality and cost to existing customers of the Regional Water System.

C. New Retail Customers. San Francisco may enter into new retail water service obligations outside of the City and County of San Francisco:

1. Only in Alameda, San Mateo, Santa Clara, San Joaquin and Tuolumne Counties;

2. That are within or immediately adjacent to areas in which it currently serves other Retail Customers; and

3. Until the aggregate additional demand represented by the new retail customers reaches 0.5 MGD.

The limitations on serving new Retail Customers described in this subsection do not apply to historical obligations to supply water that may be contained in prior agreements between the SFPUC or its predecessor the Spring Valley Water Company, and individual users or property owners located adjacent to Regional Water System transmission pipelines.

D. Water Exchanges and Cost Sharing Agreements with Other Water Suppliers. Subject to completion of necessary environmental review under CEQA, San Francisco may at any time enter into water exchanges or cost sharing agreements with other water suppliers to enhance dry year or normal year water deliveries, provided that San Francisco cannot incur new water service obligations to such other water suppliers unless the requirements for taking on new wholesale customers in subsections A and B above are met.

3.14 Measurement of Water

A. The parties recognize that continuous and accurate measurement of water deliveries to and from the Regional Water System and maintenance of complete and accurate records of those measurements is necessary (1) for the costs of the Regional Water System to be allocated in accordance with this Agreement, (2) for implementation of other provisions of this Agreement, and (3) for effective operation and maintenance of a water system serving a large urbanized region.

B. It is the responsibility of the SFPUC to obtain and record these measurements. To do so, the SFPUC shall install, maintain and operate measuring and recording equipment at the following locations: (1) inputs to the Regional Water System from all water sources ("System Input Meters"), (2) internal flow meters to support operation of the Regional Water System ("In-Line Meters"), (3) deliveries to the City at the San Francisco-San Mateo County line ("County-Line Meters") and to three reservoirs in San Francisco ("In-City Terminal Reservoir Meters"), (4) deliveries to SFPUC Retail Customers located outside the boundaries of the City, and (5) deliveries to the Wholesale Customers, as described and illustrated in Attachment J.

C. The SFPUC shall inspect, test, service, and calibrate the measuring and recording equipment installed at the locations described in subsection B and will repair or replace them when necessary, in order to ensure that their accuracy is consistent with specifications provided in Attachment J.

D. The SFPUC shall continue to contract with a qualified independent metering consultant to perform periodic inspection, testing, servicing and calibration of the County-Line Meters, the In-City Terminal Reservoir Meters, and the System Input and In-Line Meters described in Attachment J, as well as the portion of the SFPUC's Supervisory Control and Data Acquisition (SCADA) system that utilizes the flow signals produced by that measuring and recording equipment. The method, schedule and frequency for calibration and maintenance of the County-Line Meters and the In-City Terminal Reservoir Meters are specified in Attachment J. The SFPUC shall provide copies of the metering consultant's reports to BAWSCA.

E. System Input Meters measure water deliveries into the Regional Water System from sources such as Hetch Hetchy and the SFPUC's water treatment plants. System Input Meters also measure deliveries from the Regional Water System to outside sources or from

such sources to the Regional Water System through interties with the Santa Clara Valley Water District and the East Bay Municipal Utility District. In-Line Meters measure internal system flows and are located on the Bay Division Pipelines and other main transmission pipelines. These meters are collectively referred to as the "System Input and In-line Meters." Similar to the County-Line Meters, the System Input and In-Line Meters have secondary metering equipment, such as differential pressure transmitters and flow recorders. The System Input and In-Line Meters, and all associated secondary metering equipment, shall be calibrated and maintained according to the method, schedule, and frequency specified in the Procedures Manual described in subsection G, below.

F. The locations of the smaller and more numerous meters described in subsection B (4) and (5) are not illustrated in Attachment J; however, they are also critical in the determination of cost allocations, and accordingly require continued maintenance and calibration. It is the responsibility of the SFPUC to maintain the accuracy of these meters and their secondary metering equipment.

G. The SFPUC will prepare a Procedures Manual which will describe in detail the procedures for periodic inspection, testing, servicing and calibration of the measuring and recording equipment described in subsection B. Once the Procedures Manual is completed, the SFPUC and BAWSCA may agree that it should supersede some or all of the requirements in Attachment J regarding the County-Line and the In-City Terminal Reservoir Meters. Unless and until such an agreement is reached and documented, however, the requirements in Attachment J, Section D will continue in force as minimum standards for meter maintenance and calibration of the County-Line and In-City Terminal Reservoir Meters (subject to modification under the circumstances described in Attachment J, Section A.4).

H. If BAWSCA and the SFPUC are unable to agree on the water use calculations required by Attachment J for a particular year, the Wholesale Customers may file a demand for arbitration challenging the SFPUC's determination of the Wholesale Revenue Requirement for that year on the basis of its reliance on disputed water use calculations. Such a challenge must be brought in the manner and within the time specified in Section 8.01.

3.15 New Sources of Water Supply to Maintain Supply Assurance

A. Urgent Reductions of Existing Surface Water Supplies. Sudden and unanticipated events may require San Francisco to act promptly to protect the health, safety and

economic well-being of its Retail and Wholesale Customers. Such sudden events include, but are not limited to drought, earthquakes, terrorist acts, catastrophic failures of facilities owned and operated by San Francisco, and other natural or man-made events. If such events diminish San Francisco's ability to maintain the Supply Assurance, San Francisco may increase the Wholesale Revenue Requirement to pay for planning, evaluation and implementation of replacement sources of supply when such needs arise and without the prior approval of the Wholesale Customers. San Francisco will keep the Wholesale Customers informed of actions being taken under this subsection, progress made, and contingency actions the Wholesale Customers may need to consider taking. To the extent appropriate and applicable, San Francisco will act in accordance with Section 3.11 and the ERRP. Nothing in this subsection limits San Francisco's obligations under Section 3.11 to pursue additional sources of supply to augment supplies available during drought.

B. Non-Urgent Reductions of Existing Surface Water Supplies. Climate change, regulatory actions and other events may impact San Francisco's ability to maintain the Supply Assurance from its existing surface water supplies, but on timescales long enough to permit San Francisco to collaborate with its Wholesale Customers on how best to address possible impacts to water supply. If such events diminish San Francisco's ability to maintain the Supply Assurance, San Francisco may increase the Wholesale Revenue Requirement to pay for planning, evaluation and implementation of replacement sources of supply when such needs arise and without the prior approval of the Wholesale Customers. San Francisco will keep the Wholesale Customers informed of actions being taken under this subsection, progress made, and contingency actions the Wholesale Customers may need to consider taking. San Francisco will solicit input and recommendations from BAWSCA and the Wholesale Customers, and take those recommendations into consideration. Prior to Commission approval of plans or taking other actions that would impact the Wholesale Revenue Requirement, San Francisco will hold a public hearing to receive written and oral comments. Nothing in this subsection modifies San Francisco's obligation to maintain the ability to provide the Supply Assurance under this Agreement.

3.16 New Sources of Water Supply to Increase Supply Assurance

A. Surface Water Supplies From Existing Watersheds After 2018. The Commission action in SFPUC Resolution Number 08-0200, adopted October 30, 2008 requires certain decisions by San Francisco regarding whether to supply more than 265 MGD from its

watersheds following 2018. Such decisions are to be made by December 31, 2018, subject to the exercise of San Francisco's retained CEQA discretion in Section 4.07. San Francisco's future decisions may include an offer to increase the Supply Assurance at the request of some or all of its Wholesale Customers. Costs associated with providing additional water from its existing water supplies in San Mateo, Santa Clara, Alameda, Tuolumne, and Stanislaus Counties shall be allocated to Wholesale and Retail Customers as described in Article 5.

B. New Water Supplies. If San Francisco seeks to develop additional water supplies from new sources to increase the Supply Assurance available to Wholesale Customers, studies and resulting water supply projects will be conducted jointly with BAWSCA under separate agreement(s) specifying the purpose of the projects, the anticipated regional benefits and how costs of studies and implementation will be allocated and charged. Nothing in this Agreement shall serve as precedent for the allocation of such new supply capital costs between Retail and Wholesale Customers or associated operational expenses, which shall only occur following approval of both parties and amendment of this Agreement, if necessary, under Section 2.03.

3.17 Westside Basin Conjunctive Use Program

Subject to completion of necessary CEQA review as provided in Section 4.07, the SFPUC may enter into an agreement with the cities of Daly City and San Bruno and the California Water Service Company, South San Francisco Service Area ("Participating Pumpers") governing the operation of the South Westside Basin Conjunctive Use Program ("Program"), a WSIP Project. The Program would produce Regional benefits for all customers of the Regional Water System by making use of available groundwater storage capacity in the Southern portion of the Westside Basin through the supply of additional surface water ("In Lieu Water") to the Participating Pumpers from the Regional Water System, in exchange for a corresponding reduction in groundwater pumping at existing wells owned by the Participating Pumpers. The new groundwater supply that would accrue to storage as a result of delivery of In Lieu Water would then be recovered from the SFPUC basin storage account during water shortages using new SFPUC Regional Program wells operated by the Participating Pumpers and the SFPUC. Program annual operations and maintenance expenses and water supplies are expected to be allocated as follows:

A. All In Lieu Water delivered to the Participating Pumpers shall be (1) temporary and interruptible in nature and (2) at the sole discretion of the SFPUC based on the total volume of water available to the Regional Water System.

B. All In Lieu Water delivered to the Participating Pumpers shall be considered a delivery of water to storage and shall not be construed to affect or increase the Individual Supply Guarantees of these wholesale customers or to otherwise entitle them to any claim of water in excess of their Individual Supply Guarantees or their Interim Supply Allocations. Furthermore, Environmental Enhancement Surcharges authorized under Section 4.04 will not be applied by the SFPUC to any quantity of In Lieu Water that is delivered to the Participating Pumpers, but will instead be based solely on Participating Pumper water deliveries in excess of their respective Interim Supply Allocations.

C. Any operation and maintenance expenses incurred by the Participating Pumpers and the SFPUC that are related to the operation of Regional Program wells and related assets shall be included as Regional pumping expenses under Section 5.05.B and included as part of the Wholesale Revenue Requirement. For rate setting purposes, estimated Regional Program operation and maintenance expenses shall be used as set forth in Section 6.01. Operation and maintenance expenses associated with the Participating Pumpers' existing wells that do not provide Regional benefits shall not be included in the Wholesale Revenue Requirement. On a case-by-case basis, the SFPUC may include Participating Pumper existing well operation and maintenance expenses in the Wholesale Revenue Requirement provided that such expenses (1) are solely attributable to Regional Program operations and (2) are not caused by the Participating Pumper's failure to operate and maintain its existing wells in a reasonable and prudent manner consistent with water utility industry standards.

D. The SFPUC will audit operation and maintenance expenses submitted by the Participating Pumpers for reimbursement to confirm that such costs were incurred as a result of operating Regional Program wells and related assets. Costs associated with the use of Program facilities for Direct Retail or Direct Wholesale purposes, or that do not otherwise provide Regional benefits, shall not be included in the Wholesale Revenue Requirement. The SFPUC is responsible for resolving disputes with the Participating Pumpers concerning expense allocations. Program expense documentation, including documentation of negotiation and settlement of disputed costs, will be available for review during the Compliance Audit described

in Section 7.04. The Wholesale Customers may dispute the SFPUC's resolution of expense allocations through the arbitration provisions in Section 8.01 of this Agreement.

E. The SFPUC may direct the Participating Pumpers to recover water from the SFPUC basin storage account for any type of shortage referenced in Section 3.11. Water recovered from the SFPUC basin storage account using Regional Program wells may be used for (1) the benefit of all Regional Water System customers; (2) Retail Customers; or (3) one or more of the Participating Pumpers. The Wholesale Revenue Requirement shall only include operation and maintenance expenses incurred due to the operation of Program wells for Regional benefits.

F. All water recovered from the SFPUC basin storage account by the Participating Pumpers and by the SFPUC for delivery to Retail Customers during Shortages caused by Drought shall be used to free up a comparable volume of surface water from the Regional Water System for allocation in accordance with the Tier 1 Shortage Plan.

G. If the Program is terminated for any reason, including breach of the Program agreement by the Participating Pumpers or SFPUC, or due to regulatory action or legal action, then

1. Any water remaining SFPUC Regional storage account shall be used for the benefit of all customers of the Regional Water System;

2. Outstanding eligible operation and maintenance expenses, including costs incurred during recovery of remaining stored water, will be allocated as provided in this section; and

3. The Wholesale Customers will be credited with their share of proceeds from disposition of Program facilities or reimbursed their share of such capital costs for any Program facilities which are retained by the SFPUC for Direct Retail benefit and not used for the benefit of the Wholesale Customers, on the basis of (a) original cost less depreciation and outstanding related Indebtedness or (b) original cost less accumulated depreciation for revenue funded Regional Program facilities.

Article 4. Implementation of Interim Supply Limitation.

4.01 Interim Supply Limitation Imposed by SFPUC

In adopting the WSIP in Res. No. 08-0200, the Commission included full implementation of all proposed WSIP capital improvement projects to achieve level of service goals relating to public health, seismic safety, and delivery reliability, but decided to adopt a water supply element that includes the Interim Supply Limitation. This article describes how the parties will implement the Interim Supply Limitation imposed by the SFPUC between the Effective Date and December 31, 2018.

4.02 Retail and Wholesale Customer Allocations Under Interim Supply Limitation

The Interim Supply Limitation is allocated as follows between Retail and Wholesale Customers:

Retail Customers' allocation:	81 MGD
Wholesale Customers' allocation:	184 MGD

The Wholesale Customers' collective allocation of 184 MGD under the Interim Supply Limitation includes the demand of the cities of San Jose and Santa Clara, whose demand is not included in the Supply Assurance, as provided in Section 3.02.B. By December 31st, 2010, the Commission will establish each Wholesale Customer's Interim Supply Allocation at a public meeting.

4.03 Transfers of Interim Supply Allocations

A. Any Wholesale Customer, including Hayward, may transfer a portion of its Interim Supply Allocation to one or more other Wholesale Customers, as provided in this section. All Wholesale Customers are also eligible transferees, including California Water Service Company up to its Individual Supply Guarantee.

B. Transfers of a portion of an Interim Supply Allocation must be prospective. The duration of a transfer cannot be less than the balance of the fiscal year. The minimum quantity that may be transferred is 1/10th of a MGD.

C. Transfers of portions of Interim Supply Allocations are subject to approval by the SFPUC. SFPUC review is limited to determining (1) whether a proposed transfer complies with

the Act, and (2) whether the affected facilities in the Regional Water System have sufficient capacity to accommodate delivery of the increased amount of water to the proposed transferee.

D. The participants in a proposed transfer shall provide notice to the SFPUC specifying the amount of the Interim Supply Allocation proposed to be transferred and the proposed effective date of the transfer, which shall not be less than 60 days after the notice is submitted to the SFPUC. The SFPUC may require additional information reasonably necessary to evaluate the operational impacts of the transfer. The SFPUC will not unreasonably withhold or delay its approval; if the SFPUC does not act on the notice within 60 days, the transfer will be deemed to have been approved.

E. Within 30 days after the transfer has become effective, both the transferor and the transferee will provide written notice to the SFPUC and BAWSCA.

F. Transfers of Interim Supply Allocations shall continue in effect until the earlier of (1) delivery of written notice to the SFPUC by the transfer participants that the transfer has been rescinded or (2) December 31, 2018.

4.04 Environmental Enhancement Surcharge

A. Establishment of Environmental Enhancement Surcharge. Beginning with wholesale water rates for fiscal year 2011-2012, and continuing for the duration of the Interim Supply Limitation, the Commission will establish the Environmental Enhancement Surcharge concurrently with the budget-coordinated rate process set forth in Article 6 of this Agreement. The monetary amount of the Environmental Enhancement Surcharge per volume of water, such as dollars per acre-foot, will be equivalent for Retail Customer use in excess of 81 MGD and Wholesale Customer use in excess of 184 MGD. The Environmental Enhancement Surcharge will be simple to calculate so that Wholesale Customers can estimate potential surcharges for budgeting purposes and establish retail rates within their service areas.

B. Application of Environmental Enhancement Surcharge. Beginning in fiscal year 2011-12, the Environmental Enhancement Surcharge will be levied only if and when combined Retail Customer and Wholesale Customer purchases exceed the Interim Supply Limitation of 265 MGD and if the fund described in subsection D below has been established by the San Francisco Board of Supervisors. In that event, the Environmental Enhancement Surcharge will apply to Retail Customers for use in excess of 81 MGD and to individual

Wholesale Customers for use in excess of their Interim Supply Allocations established by the Commission pursuant to Section 4.02.

1. Environmental Enhancement Surcharges related to the Retail Customers' use in excess of their 81 MGD Retail Customer Allocation will be paid by the SFPUC, and no portion of such surcharges may be allocated to Wholesale Customers. The method of recovering the Environmental Enhancement Surcharges imposed upon Retail Customers shall be within the sole discretion of the SFPUC.

2. Environmental Enhancement Surcharges related to the individual Wholesale Customers' use in excess of their respective Interim Supply Allocations will be paid to the SFPUC by individual Wholesale Customers.

C. Collection of Environmental Enhancement Surcharge. Notwithstanding the budget-coordinated rate setting process contemplated in Article 6 of this Agreement, the Environmental Enhancement Surcharge for any given year will be determined retrospectively based on actual annual usage during the fiscal year in excess of the Interim Supply Allocation and paid in equal monthly installments over the remainder of the immediately following fiscal year.

D. Establishment of Fund for Environmental Enhancement Surcharge Proceeds. Environmental Enhancement Surcharges paid by the SFPUC and by Wholesale Customers will be placed into a restricted reserve fund. The SFPUC will request the San Francisco Board of Supervisors to establish this fund by ordinance and, if adopted, the fund will be subject to the following restrictions:

1. Interest earnings will stay in the reserve fund.

2. The reserve fund shall (a) be subject to automatic appropriation; (b) require unexpended and unencumbered fund balances to be carried forward from year to year; and (c) not be transferred to the San Francisco General Fund.

3. The reserve fund may be used only for specific environmental restoration and enhancement measures for the Sierra and local watersheds, such as those included in the Watershed Environmental Improvement Program.

4. Environmental Enhancement Surcharge proceeds shall be expended in an expeditious manner. Any Environmental Enhancement Surcharge proceeds that remain in

the reserve fund as of December 31, 2018 shall be used to complete projects previously approved under subsection E. Upon completion of the identified projects, the balance of any unexpended sums in the reserve fund shall be distributed to BAWSCA and the SFPUC in proportion to the total amount of surcharges assessed to the Wholesale and Retail Customers, respectively.

E. Use of Environmental Enhancement Surcharge Proceeds. Specific uses of Environmental Enhancement Surcharges will be decided by the SFPUC and BAWSCA General Managers following input from environmental stakeholders and other interested members of the public. If parties are unable to agree, then they will jointly select a third person to participate in making the decision.

4.05 San Jose/ Santa Clara Interim Supply Allocation and Process for Reduction/ Termination.

San Francisco will supply a combined annual average of 9 MGD to the cities of San Jose and Santa Clara through 2018. Water supplied by San Francisco may only be used in the existing defined service areas in the northern portions of San Jose and Santa Clara shown on Attachment Q. San Francisco may reduce the quantity of water specified in this section when it establishes the Interim Supply Allocations for Wholesale Customers in Section 4.02. The establishment of Interim Supply Allocations for San Jose and Santa Clara shall not be considered a reduction of supply within the meaning of this section, provided that the Interim Supply Allocations assigned to San Jose and Santa Clara do not effect a reduction greater than the aggregate average reduction in Individual Supply Guarantees for Wholesale Customers that have such guarantees. The application of Interim Supply Allocations to San Jose and Santa Clara is subject to the following provisions:

A. In December 2010 and in each December thereafter through 2017, the SFPUC shall prepare and the Commission shall consider, at a regularly scheduled public meeting, a Water Supply Development Report detailing progress made toward meeting the Interim Supply Limitation by June 30, 2018.

B. The annual Water Supply Development Report shall be based on water purchase projections and work plans for achieving the Interim Supply Limitation in the Retail and Wholesale Service Areas. The projections and work plans will be prepared by the SFPUC for

the Retail Customers and by BAWSCA for the Wholesale Customers, respectively, and submitted to the Commission in June of each year beginning in 2010.

C. If the Commission finds that the projections in the Water Supply Development Report show that the Interim Supply Limitation will not be met by June 30, 2018, as a result of Wholesale Customers' projected use exceeding 184 MGD, the Commission may issue a conditional five-year notice of interruption or reduction in supply of water to San Jose and Santa Clara.

D. Upon issuance of the conditional notice of interruption or reduction, the SFPUC will prepare a new analysis of water supply that will be utilized by the San Francisco Planning Department in its preparation of any necessary documentation under CEQA pursuant to Section 4.07 on the impacts of interrupting or reducing service to San Jose and Santa Clara.

E. Such notice of interruption or reduction will be rescinded if the Commission finds, based upon a subsequent annual Water Supply Development Report, that sufficient progress has been made toward meeting the Interim Supply Limitation or projections show that the Interim Supply Limitation will be met by June 30, 2018.

F. In no case shall any interruption or reduction of service to San Jose or Santa Clara pursuant to this section become effective less than two years from the completion of the CEQA process (not including resolution of any appeals or litigation) or five years from the notice, whichever is longer. If the five-year notice is issued after 2013, such interruption or reduction would occur after 2018.

G. If deliveries to San Jose and Santa Clara are interrupted, existing turnout facilities to San Jose and Santa Clara will remain in place for possible use during emergencies.

H. San Francisco and the cities of San Jose and Santa Clara will cooperate with BAWSCA and the Santa Clara Valley Water District in the identification and implementation of additional water sources and conservation measures for the cities' service areas that are relevant to the water supply and the possible offer of permanent status for the two cities by the SFPUC.

4.06 <u>San Francisco Decisions in 2018 Regarding Future Water Supply</u>

A. By December 31, 2018, San Francisco will have completed any necessary CEQA review pursuant to Section 4.07 that is relevant to making San Jose and Santa Clara

permanent customers of the Regional Water System and will decide whether or not to make San Jose and Santa Clara permanent customers of the Regional Water System. San Francisco will make San Jose and Santa Clara permanent customers only if, and to the extent that, San Francisco determines that Regional Water System long term water supplies are available. In the event that San Francisco decides to afford permanent status to San Jose and Santa Clara, this Agreement will be amended pursuant to Section 2.03.

B. By December 31, 2018, San Francisco will have completed any necessary CEQA review pursuant to Section 4.07 and will decide how much water if any, in excess of the Supply Assurance it will supply to Wholesale Customers from the Regional Water System to meet their projected future water demands until the year 2030, and whether to offer a corresponding increase in the Supply Assurance as a result of its determination.

4.07 Retained Discretion of SFPUC and Wholesale Customers

A. This Agreement contemplates discretionary actions that the SFPUC and the Wholesale Customers may choose to take in the future that could result in physical changes to the environment ("Discretionary Actions"). The Discretionary Actions include decisions to:

1. Develop additional or alternate water resources by the SFPUC or one or more Wholesale Customers;

2. Implement the physical facilities comprising the WSIP by December 31, 2015;

3. Approve wheeling proposals by Wholesale Customers;

4. Approve new wholesale customers and water exchange or cost sharing agreements with other water suppliers;

5. Provide additional water to San Jose and/or Santa Clara;

6. Offer permanent status to San Jose and/or Santa Clara;

7. Reduce or terminate supply to San Jose and/or Santa Clara;

8. Provide additional water to Wholesale Customers in excess of the Supply Assurance to meet their projected future water demands; and

9. Offer a corresponding volumetric increase in the Supply Assurance.

The Discretionary Actions may require the SFPUC or Wholesale Customers to prepare environmental documents in accordance with CEQA prior to the SFPUC or the Wholesale Customers determining whether to proceed with any of the Discretionary Actions. Accordingly, and notwithstanding any provision of this Agreement to the contrary, nothing in this Agreement commits the SFPUC or the Wholesale Customers to approve or carry out any Discretionary Actions that are subject to CEQA. Furthermore, the SFPUC's or Wholesale Customers' decisions to approve any of these Discretionary Actions are subject to the requirement that San Francisco and each Wholesale Customer, as either a "Lead Agency" (as defined in Section 21067 of CEQA and Section 15367 of the CEQA Guidelines) or a "Responsible Agency" (as defined in Section 21069 of CEQA and Section 15381 of the CEQA Guidelines) shall have completed any CEQA-required environmental review prior to approving a proposed Discretionary Action.

B. In considering any proposed Discretionary Actions, the SFPUC and Wholesale Customers retain absolute discretion to: (1) make such modifications to any of the proposed Discretionary Actions as may be necessary to mitigate significant environmental impacts; (2) select feasible alternatives to the proposed Discretionary Actions that avoid significant adverse impacts; (3) require the implementation of specific measures to mitigate the significant adverse environmental impacts as part of the decision to approve the Discretionary Actions; (4) balance the benefits of the proposed Discretionary Actions against any significant environmental impacts before taking final actions to approve the proposed Discretionary Actions if such significant impacts cannot otherwise be avoided; or (5) determine not to proceed with the proposed Discretionary Actions.

Article 5. Wholesale Revenue Requirement

5.01 Scope of Agreement

This Article shall be applicable only to the water rates charged by San Francisco to the Wholesale Customers. Nothing contained in this Agreement shall limit, constrain, or in any way affect the rates which San Francisco may charge for water sold to Retail Customers or the methodology by which such rates are determined.

5.02 General Principles

This Article sets forth the method by which the Wholesale Customers' collective share of expenses incurred by the SFPUC in delivering water to them will be determined. This collective share is defined as the "Wholesale Revenue Requirement."

A. The SFPUC currently operates several enterprises, including the Water Enterprise, the Wastewater Enterprise, and the Hetch Hetchy Enterprise.

B. The Wastewater Enterprise is responsible for treating sewage within San Francisco and provides no benefit to the Wholesale Customers.

C. The Hetch Hetchy Enterprise is responsible for storing and transmitting water to the Water Enterprise, generating hydroelectric power and transmitting it to San Francisco, generating electric power within San Francisco, and distributing electricity and steam heat within San Francisco. Its water supply operations provide benefits to the Wholesale Customers.

D. The Water Enterprise delivers water to both Retail Customers, which are located both within and outside San Francisco, and to the Wholesale Customers, all of which are located outside San Francisco.

E. This Article implements two general principles as follows: (1) the Wholesale Customers should not pay for expenses of SFPUC operations from which they receive no benefit and (2) the Wholesale Customers should pay their share of expenses incurred by the SFPUC in delivering water to them on the basis of Proportional Annual Use unless otherwise explicitly provided in this Agreement.

F. To implement these general principles, the Wholesale Revenue Requirement will consist of, and be limited to, the Wholesale Customers' shares of the following categories of expense:

1. Capital cost recovery of Water Enterprise Existing Assets, and Hetch Hetchy Enterprise Existing Assets classified as Water-Only and the Water-Related portion of Joint assets (Section 5.03)

2. Contribution to the capital cost of Water Enterprise New Regional Assets (Section 5.04)

3. Water Enterprise operation and maintenance expenses, including power purchased from the Hetch Hetchy Enterprise that is used in the operation of the Water Enterprise (Section 5.05)

4. Water Enterprise administrative and general expenses (Section 5.06)

5. Water Enterprise property taxes (Section 5.07)

6. The Water Enterprise's share of the Hetch Hetchy Enterprise's operation and maintenance, administrative and general, and property tax expenses (Section 5.08)

7. The Water Enterprise's share of the Hetch Hetchy Enterprise's capital cost of New Assets classified as Water-Only and the Water-Related portion of Joint assets (Section 5.09)

In each of these cost categories, Direct Retail Expenses will be allocated entirely to Retail Customers. Direct Wholesale Expenses will be allocated entirely to the Wholesale Customers. Regional Expenses will be allocated between Retail Customers and Wholesale Customers as provided in this Article.

G. For purposes of establishing the rates to be charged Wholesale Customers, expenses will be based on the budget for, and estimates of water purchases in, the following fiscal year, as provided in Article 6. For purposes of accounting, the Wholesale Revenue Requirement will be determined on the basis of actual expenses incurred and actual water use, as provided in Article 7.

H. In addition, rates charged to Wholesale Customers may include the Wholesale Customers' contribution to a Wholesale Revenue Coverage Reserve, as provided in Section 6.06, which is not included in the Wholesale Revenue Requirement itself.

5.03 Capital Cost Recovery - Existing Regional Assets

A. SFPUC has previously advanced funds to acquire or construct Existing Assets used and useful in the delivery of water to both Wholesale Customers and Retail Customers. The parties estimate that the Wholesale Customers' share of the net book value of these assets, as of the expiration of the 1984 Agreement on June 30, 2009, will be approximately $366,734,424, as shown on Attachment K-1.

B. In addition, SFPUC has also previously advanced funds received from Retail Customer revenues to acquire or construct assets included in Construction-Work-In-Progress (CWIP) as of June 30, 2009. The parties estimate that the Wholesale Customers' share of the book value of these revenue funded capital expenditures, as of the expiration of the 1984 Agreement on June 30, 2009, will be approximately $15,594,990, as shown on Attachment K-2. The Wholesale Customers shall pay their share of the cost of Existing Assets and revenue-funded CWIP by amortizing the amounts shown on Attachment K-1 and Attachment K-2 over 25 years at an interest rate of 5.13 percent. The amounts to be included in the Wholesale Revenue Requirement pursuant to this section shall be the sum of the annual principal and interest amounts shown on Attachments K-3 (for Water Enterprise Regional Assets and the one Direct Wholesale Asset) and K-4 (for Hetch Hetchy Enterprise Water-Only Assets and the Water-Related portion [45 percent] of Joint assets) calculated on the basis of monthly amortization of principal as set forth on Attachments K-3 and K-4.

C. In addition, the Commission has previously appropriated funds, advanced through rates charged to Retail Customers, for construction of capital projects. Some of these projects are active, and have unexpended balances of appropriated funds that are not included in CWIP as of June 30, 2009. These projects, and the associated balances, are shown on Attachment K-5. Expenditures of funds from these balances during FY 2009-10, FY 2010-11 and FY 2011-12 will be reviewed in FY 2012-13. The SFPUC will prepare a report showing the amount expended in each year on each project and the total expended during all years on all projects that are categorized as Regional or, in the case of Hetch Hetchy Enterprise, are categorized as either Water-Only or Joint. The wholesale share of that total will be determined using the allocation principles in this Agreement based on Proportional Water Use during those three years. The result, plus accrued interest at the rate specified in Section 6.05.B, will be calculated by the SFPUC and its calculation reviewed by the Compliance Auditor as part of the Compliance Audit for FY 2012-13. The audited total will be paid based on a schedule of level annual principal and interest amounts over ten years at an interest rate of 4.00%, calculated on

a monthly amortization basis. All or any portion of the balance may be prepaid. The first year's payment will be included in the Wholesale Revenue Requirement for FY 2014-15.

D. The parties agree that the Wholesale Customers' share of the net book values of Existing Regional Assets as of June 30, 2008 as shown on Attachment K-1 are accurate. The compliance audit conducted on the calculation of the FY 2008-09 Suburban Revenue Requirement required by the 1984 Agreement will determine the actual amounts of depreciation on, and capital additions to, plant in service during that fiscal year. Those amounts will be compared to the corresponding estimates shown on Attachments K-1 and K-2. The differences will be added to or subtracted from the estimated asset values shown on Attachments K-1 and K-2 and the amortization schedules in Attachments K-3 and K-4 will be recalculated. The wholesale allocation factors shall be fixed at 70.1% for the Water Enterprise Existing Assets and 64.2% for Hetch Hetchy Enterprise Existing Assets for both the preliminary and final payment schedules. The SFPUC will prepare and provide to the Wholesale Customers revised Attachments K-1 through K-4 based on the Wholesale Customers' share of the net book value of the assets placed in service as of June 30, 2009 used to provide water service to the Wholesale Customers and the net book value of revenue-funded CWIP expended as of June 30, 2009. The revised Attachments K-1 through K-4 shall be approved by the General Manager of the SFPUC and the General Manager/CEO of BAWSCA and will be substituted for the original Attachments K-1 through K-4.

E. The original Attachments K-1 through K-4, based on estimates, shall be used for estimating the Wholesale Revenue Requirement for the fiscal year beginning July 1, 2009. The revised Attachments, based on audited actuals, shall be used to determine the actual Wholesale Revenue Requirement for FY 2009-10 and to determine the Wholesale Revenue Requirement(s) in all subsequent years, except as may be provided elsewhere in this Agreement.

F. The Wholesale Customers, acting through BAWSCA, may prepay the remaining unpaid Existing Assets principal balance, in whole or in part, at any time without penalty or early payment premium. Any prepayments will be applied in the month immediately following the month in which the prepayment is made and the revised monthly amount(s) will be used to calculate the Wholesale Revenue Requirement. Any partial prepayments must be in an amount at least equal to $10 million. In the event of a partial prepayment, an updated schedule for the remaining payments shall be prepared reflecting the unpaid balance after prepayment,

amortized through the end of FY 2034, calculated as provided in this section. The updated schedule, approved by the General Manager of the SFPUC and the General Manager/CEO of BAWSCA, will be substituted for Attachment K-3 and/or Attachment K-4.

5.04 Capital Cost Contribution - New Regional Assets

A. Debt-Funded Capital Additions. The Wholesale Customers shall pay the wholesale share of Net Annual Debt Service for New Regional Assets. The Regional projects in the WSIP are identified in Attachment L-1.

1. The amount of Net Annual Debt Service for New Regional Assets will be determined for each series of Indebtedness issued. Until the proceeds of a particular series are Substantially Expended, the amount attributable to specific projects will be based on the expected use of proceeds shown in the "Certificate Regarding Use of Proceeds" executed by the SFPUC General Manager on behalf of the Commission in connection with the sale of the Indebtedness, provided such certificate identifies the use of proceeds at a level of detail equivalent to that shown on Attachment L-2, which is a copy of the certificate prepared for the 2006 Revenue Bonds, Series A. If a certificate does not identify the use of proceeds at that level of detail, the SFPUC General Manager shall prepare and execute a separate certificate which does identify the use of proceeds at the level of detail shown on Attachment L-2 and deliver it to BAWSCA within 15 days from the closing of the sale of the Indebtedness.

2. After the proceeds of a series are Substantially Expended, the SFPUC General Manager will prepare and execute a certificate showing the actual expenditure of proceeds at a level of detail equivalent to the initial General Manager certificate. The resulting allocation of Net Debt Service to New Regional Assets for a series of bonds will be used in the fiscal year in which the proceeds have been Substantially Expended and thereafter. Differences between the amount of Net Debt Service paid by Wholesale Customers prior to that year and the amount of Net Debt Service that they should have paid during that time based on the actual expenditure of proceeds will be taken into account in calculation of the balancing account for the fiscal year in which the proceeds were Substantially Expended. The application of the remaining proceeds shall be proportionate to the allocation of the Net Debt Service to New Regional Assets.

3. The Wholesale Customers' share of Net Annual Debt Service for the New Regional Assets that are categorized as Direct Wholesale will be 100 percent. (None of the

projects in the WSIP are categorized as Direct Wholesale.) The Wholesale Customers' share of Net Annual Debt Service for all other New Regional Assets will be determined each year and will be equal to the Wholesale Customers' Proportional Annual Use.

4. If Indebtedness is issued by the SFPUC to refund the 2006 Revenue Bonds, Series A or to refund any other long-term Indebtedness issued after July 1, 2009, the Net Annual Debt Service attributable to proceeds used for refunding will be allocated on the same basis as the Indebtedness being refunded.

5. The SFPUC will prepare an annual report showing for each issue of Indebtedness and through the most recently completed fiscal year: (1) net financing proceeds available to pay project costs, (2) actual earnings on proceeds, (3) actual expenditures by project. The report shall be substantially in the form of Attachment L-3 and shall be delivered to BAWSCA on or before November 30 of each year, commencing November 2009.

6. In addition to Net Debt Service, Wholesale Customers will pay a proportionate share of annual administrative costs associated with Indebtedness, such as bond trustee fees, credit rating agency fees, letter of credit issuer fees, San Francisco Revenue Bond Oversight Committee fees, etc., but only to the extent such fees are neither paid from proceeds of Indebtedness nor included in SFPUC operation and maintenance or administrative and general expenses.

B. **Revenue-Funded Capital Additions**. The Wholesale Customers shall pay the wholesale share of the appropriation contained in the SFPUC annual budget for each year to be used to acquire or construct New Regional Assets. If such appropriations are reimbursed from proceeds of Indebtedness, the Wholesale Customers will be credited for prior payments made under this Section 5.04.B.

The Wholesale Customers' share of the annual appropriation for revenue-funded New Regional Assets that are categorized as Direct Wholesale will be 100 percent. (None of the Repair and Replacement projects in the SFPUC's most recent capital improvement program updated on February 10, 2009, is categorized as Direct Wholesale.) The Wholesale Customers' share of the annual appropriation for all other revenue-funded New Regional Assets will be determined each year and will be equal to the Wholesale Customers' Proportional Annual Use in each fiscal year. The amount appropriated in each fiscal year for the wholesale share of New

Regional Assets shall be contributed to the Wholesale Capital Fund described in Section 6.08 and reported on and administered as shown in that section and Attachments M-1 through M-3.

5.05 Water Enterprise Operation and Maintenance Expenses

There are five categories of Water Enterprise Operation and Maintenance Expenses, described below:

A. Source of Supply

1. Description: This category consists of the costs of labor, supervision and engineering; materials and supplies; and other expenses incurred in the operation and maintenance of collecting and impounding reservoirs, dams, wells and other water supply facilities located outside San Francisco; watershed protection; water supply planning; and the purchase of water.

2. Allocation: Direct Retail expenses, including water supply planning for Retail operations (such as City Retail water conservation programs), will be assigned to the Retail Customers. Regional expenses will be allocated between Retail Customers and Wholesale Customers on the basis of Proportional Annual Use. Direct Wholesale expenses will be assigned to the Wholesale Customers. (As of the Effective Date there are no Direct Wholesale expenses in the Source of Supply category.)

B. Pumping

1. Description: This category consists of the costs of labor, supervision and engineering; materials and supplies; and other expenses incurred in the operation and maintenance of water pumping plants, ancillary structures and equipment and surrounding grounds; and fuel and power purchased for pumping water.

2. Allocation: Direct Retail expenses will be assigned to the Retail Customers. Regional expenses will be allocated between Retail Customers and Wholesale Customers on the basis of Proportional Annual Use. Direct Wholesale expenses will be assigned to the Wholesale Customers. (As of the Effective Date there are no Direct Wholesale expenses in the Pumping category.)

C. Treatment

1. Description: This category consists of the costs of labor, supervision and engineering; materials and supplies and other expenses incurred in the operation and

maintenance of water treatment plants and drinking water quality sampling and testing. The cost of water quality testing will not include expenses incurred on behalf of the Wastewater Enterprise. Any remaining costs, after adjusting for the Wastewater Enterprise, will be reduced by the amount of revenue received for laboratory analyses of any type performed for agencies, businesses and/or individuals other than the Water and Hetch Hetchy Enterprises.

2. Allocation: Direct Retail expenses will be assigned to the Retail Customers. Regional expenses will be allocated between Retail Customers and Wholesale Customers on the basis of Proportional Annual Use. Direct Wholesale expenses will be assigned to the Wholesale Customers. (As of the Effective Date there are no Direct Wholesale expenses in the Treatment category.)

D. <u>Transmission and Distribution</u>

1. Description: This category consists of the cost of labor, supervision and engineering; materials and supplies; and other expenses incurred in the operation and maintenance of transmission and distribution pipelines, appurtenances, meters (other than those expenses payable by individual Wholesale Customers pursuant to Section 5.10.C.3), distribution reservoirs storing treated water, craft shops and auto shops servicing vehicles used for operation and maintenance of the Regional Water System rather than for Direct Retail facilities, and miscellaneous facilities related to the transmission and distribution of water.

2. Allocation: Direct Retail Transmission and Distribution expenses will be assigned to the Retail Customers. Regional Transmission and Distribution expenses will be allocated between Retail and Wholesale Customers on the basis of Proportional Annual Use. Expenses incurred for the operation and maintenance of three terminal reservoirs, i.e., Sunset Reservoir (North and South Basins), University Mound Reservoir (North and South Basins), and Merced Manor Reservoir, as well as transmission pipelines delivering water to them, are classified as Regional expenses notwithstanding the location of the reservoirs within San Francisco. Direct Wholesale expenses will be assigned to the Wholesale Customers. (As of the Effective Date the only Direct Wholesale expenses in the Transmission and Distribution category are associated with the Palo Alto pipeline.)

E. Customer Services

1. Description: This category consists of labor; materials and supplies; and other expenses incurred for meter reading, customer record keeping, and billing and collection for the Water Enterprise.

2. Allocation: Customer Services expenses will be allocated among the Water Enterprise, the Wastewater Enterprise, and Hetch Hetchy Enterprise in proportion to the time spent by employees in Customer Services for each operating department/enterprise. The Water Enterprise's share of Customer Services expense will be allocated 98 percent to the Retail Customers and two percent to the Wholesale Customers, as illustrated on Attachment N-2, Schedule 1.

5.06 Water Enterprise Administrative and General Expenses

Administrative and General expenses consist of the Water Enterprise's share of the cost of general government distributed through the full-cost Countywide Cost Allocation Plan, the services of SFPUC support bureaus, Water Enterprise administrative and general expenses that cannot be directly assigned to a specific operating and maintenance category, and the cost of the Compliance Audit. These four subcategories, and the method by which costs in each are to be calculated and allocated, are as follows:

A. Countywide Cost Allocation Plan

1. Description: This subcategory consists of the Water Enterprise's share of the costs of San Francisco general government and other City central service departments which are not directly billed to the Water Enterprise or other operating departments. All San Francisco operating departments are assigned a prorated share of these costs through the full-cost Countywide Cost Allocation Plan (COWCAP) prepared annually by the San Francisco Controller.

2. Allocation: The Water Enterprise's assigned share of central government costs as shown in the annual full-cost COWCAP prepared by the San Francisco Controller, will be allocated between Retail Customers and Wholesale Customers on the basis of the composite percentage of the allocated expenses in the five categories of operation and maintenance expense described in Section 5.05. The composite wholesale percentage shown on Attachment N-2, Schedule 1 is 42.07 percent, derived by dividing the wholesale share of

Operation and Maintenance expenses ($46,573,883) by total Operation and Maintenance expenses ($110,700,133).

B. Services of SFPUC Bureaus

1. Description: This subcategory consists of the support services provided to the Water Enterprise by the SFPUC Bureaus, which presently consist of the General Manager's Office, Business Services, External Affairs, and Infrastructure Bureau. Business Services presently includes Financial Services, Information Technology Services, Human Resource Services, Fleet Management, and Customer Services.

2. Allocation: There are three steps involved in determining the Wholesale Customers' share of SFPUC Bureau costs.

a. Step One: Bureau expenses which have either been recovered separately or which provide no benefit to Wholesale Customers will be excluded. Examples of Bureau expenses recovered separately include (1) Customer Services expenses, which are recovered as provided in Section 5.05.E, and (2) Infrastructure expenses, which are assigned to individual projects and capitalized. An example of a Bureau expense that provides no benefit to Wholesale Customers is Information Technology Services expenses for support of the San Francisco Municipal Railway. In addition, the SFPUC will continue its practice of assigning City Attorney Office expenses charged to the General Manager's Office for projects or lawsuits that relate to only one enterprise directly to that enterprise. For example, costs related to a lawsuit involving the Wastewater Enterprise will not be assigned to the Water Enterprise.

b. Step Two: Bureau expenses adjusted as provided in Step One will be allocated among the Water Enterprise, the Wastewater Enterprise and the Hetch Hetchy Enterprise on the basis of the actual salaries of employees in each enterprise or department, as illustrated on Attachment N-2, Schedule 7.

c. Step Three: The amount allocated to the Water Enterprise through Step Two will be allocated between Retail Customers and Wholesale Customers on the basis of Proportional Annual Use.

C. Water Enterprise Administrative and General

1. Description: This category includes expenses incurred by the Water Enterprise that are not readily assignable to specific operating divisions. This category includes the following expenses:

a. Water Administration: This includes the costs of labor and other expenses of the administrative section of the Water Enterprise, supervision and engineering expenses, professional services, travel and training, equipment purchases, and materials and supplies not directly assignable to a specific operating unit.

b. Services Provided by Other City Departments: This includes charges of other San Francisco departments directly billed to the Water Enterprise administration by other San Francisco departments for services ordered by the Water Enterprise, such as legal services, risk management, telecommunications, employee relations, purchasing, mail services, and workers compensation claims paid.

c. Litigation and Claims Paid: This includes charges incurred for attorney services and claims and judgments paid in litigation arising from the operation of the Water Enterprise.

2. Allocation: In each of these three subcategories, expenses that benefit only Retail Customers will be excluded. For example, the cost of claims and judgments resulting from a break in or leak from pipelines or reservoirs in the Retail Service Area (with the exception of the three terminal reservoirs and pipelines delivering water to them) will be assigned to the Retail Customers. Remaining Water Enterprise Administrative and General expenses will be allocated between Retail Customers and Wholesale Customers on the basis of the composite percentage of allocated operation and maintenance expense categories described in Section 5.05.

D. Compliance Audit. The cost of the Compliance Audit described in Section 7.04 will be assigned 50 percent to the Retail Customers and 50 percent to the Wholesale Customers.

5.07 Water Enterprise Property Taxes

A. Description: This category consists of property taxes levied against property owned by San Francisco located in Alameda, San Mateo and Santa Clara counties and used and managed by the SFPUC.

B. Allocation: All property taxes paid, net of (1) reimbursements received from lessees and permit holders, and (2) refunds from the taxing authority, are Regional expenses. Net property taxes will be allocated between Retail Customers and Wholesale Customers on the basis of Proportional Annual Use.

5.08 Hetch Hetchy Enterprise Expenses

A. Introduction. There are two steps involved in determining the amount of the Wholesale Customers' share of Hetch Hetchy Enterprise expenses.

1. The first step is to determine the Water Enterprise's share of Hetch Hetchy Enterprise operation expenses, maintenance expenses, administrative and general expenses, and property taxes.

2. The second step is to determine the Wholesale Customers' share of expenses allocable to the Water Enterprise.

B. Determination of the Water-Related Portion of Hetch Hetchy Enterprise Expenses

1. Operation and Maintenance Expenses: This category consists of the cost of labor, materials and supplies, and other expenses incurred in operating and maintaining Hetch Hetchy Enterprise physical facilities.

a. Description: Expenses associated exclusively with the production and distribution of hydroelectric power (e.g., generating plants and power transmission lines and towers, transformers and associated electric equipment, purchased power, wheeling charges, rental of power lines, etc.) are categorized as Power-Only and are allocated to power. Expenses associated exclusively with the operation and maintenance of facilities that serve only the water function (e.g., water transmission pipelines and aqueducts, activities related to compliance with federal and state drinking water quality laws, etc.) are categorized as Water-Only and are allocated entirely to water. Expenses associated with the operation and maintenance of facilities that serve both the water and power functions (e.g., dams, security

programs, etc.) are categorized as Joint and are reallocated as 55 percent Power-Related and 45 percent Water-Related.

2. Administrative and General Expenses: There are three subcategories of Hetch Hetchy Enterprise Administrative and General expenses.

a. Full-Cost Countywide Cost Allocation Plan: This subcategory consists of the cost of San Francisco general government and other City central service departments which are not directly billed to operating departments but allocated through the full-cost Countywide Cost Allocation Plan described in Section 5.06.A. Costs in this subcategory are classified as Joint, and are reallocated as 55 percent Power-Related and 45 percent Water-Related.

b. SFPUC Bureau Costs: This subcategory consists of the expenses described in Section 5.06.B. One hundred percent of Customer Services expenses allocated to the Hetch Hetchy Enterprise are categorized as Power-Only. The remaining amount of Bureau expenses allocated to the Hetch Hetchy Enterprise pursuant to Section 5.06.B will be reallocated between power and water in proportion to the salaries of Hetch Hetchy Enterprise employees assigned to each function as shown on Attachment N-2, Schedule 7.1.

c. Other Administrative and General: This subcategory includes payments to the United States required by the Act, labor, supervision and engineering and other costs not readily assignable to a specific operation or maintenance function or program. Costs related to power administration (such as long range planning and policy analysis for energy development, administration of power contracts, and administration of work orders to City departments for energy services) are Power-Only costs. Costs related to water administration (such as legal and professional services for the protection of the City's water rights) are Water-Only costs and will be assigned to the Water Enterprise. Costs related to both power administration and water administration (such as general administration, office rents, office materials and supplies, and services of other City departments benefitting to both power and water are Joint administrative and general costs and are reallocated as 55 percent Power-Related and 45 percent Water-Related.

3. Property Taxes. This category consists of property taxes levied against property owned by San Francisco in Tuolumne, Stanislaus, San Joaquin, and Alameda counties and operated and managed by the Hetch Hetchy Enterprise.

Allocation: Property taxes are classified as Joint costs. They will be reallocated as 55 percent Power-Related and 45 percent Water-Related.

C. Calculation of Wholesale Customers' Share of Hetch Hetchy Enterprise Expenses. The Water Enterprise's share of Hetch Hetchy Enterprise expenses consist of 100 percent of Water-Only expenses and the Water-Related portion (45%) of Joint expenses.

The Wholesale Customers' share of the sum of the Water Enterprise's share of Hetch Hetchy Enterprise expenses determined under subsection B shall be calculated by multiplying that dollar amount by Adjusted Proportional Annual Use.

5.09 Hetch Hetchy Enterprise Capital Costs

A. Introduction. Wholesale Customers are also allocated a share of Hetch Hetchy Enterprise capital costs.

B. Components of Capital Costs. The components of Hetch Hetchy Enterprise capital costs are as follows:

1. Existing Assets Cost Recovery. The Wholesale Customers' repayment of their share of Hetch Hetchy Existing Assets (Water-Only and the Water-Related portion [45 percent] of Joint assets) is shown on Attachment K-4 accompanying Section 5.03.

2. Debt Service on New Assets. The Water Enterprise will be assigned 100 percent of Net Annual Debt Service attributable to acquisition and construction of New Hetch Hetchy Enterprise assets that are Water-Only and the Water-Related portion (45 percent) of Net Annual Debt Service on New Hetch Hetchy Enterprise Joint assets. The provisions of Section 5.04.A apply to debt service on New Hetch Hetchy Enterprise assets.

3. Revenue-Funded Capital Additions. The Water Enterprise will be assigned 100 percent of capital expenditures from revenues for New Hetch Hetchy Enterprise assets that are Water-Only and the Water-Related portion (45 percent) of such expenditures for new Hetch Hetchy Enterprise Joint assets. The provisions of Section 5.04.B apply to the payment of New revenue-funded Hetch Hetchy Enterprise assets.

C. Calculation of Wholesale Customers' Share of Hetch Hetchy Enterprise Capital Costs. The Wholesale Customers' share of the Net Annual Debt Service and revenue funded capital expenditures determined under subsections B.2 and 3 shall be calculated by multiplying that dollar amount by Adjusted Proportional Annual Use.

5.10 Additional Agreements Related to Financial Issues

A. Wholesale Customers Not Entitled to Certain Revenues. The Wholesale Customers have no entitlement to any of the following sources of revenue to the SFPUC.

1. Revenues from leases or sales of SFPUC real property.

2. Revenues from the other utility services such as the sale of electric power, natural gas and steam.

3. Revenues from the sale of water to customers and entities other than the Wholesale Customers.

4. Revenues earned from the investment of SFPUC funds other than funds contributed by the Wholesale Customers to the Wholesale Revenue Coverage Reserve described in Section 6.06 or the Wholesale Capital Fund described in Section 6.08. Wholesale Customers are also entitled to the benefit of earnings on proceeds of Indebtedness (through expenditure on New Regional Assets and /or application to Debt Service) and to interest on the Balancing Account as provided in Section 6.05.B.

5. Revenues not related to the sale of water.

B. Wholesale Customers Not Charged with Certain Expenses. The Wholesale Customers will not be charged with any of the following expenses:

1. Capital costs for assets constructed or acquired prior to July 1, 1984 other than Existing Asset costs that are repaid pursuant to Section 5.03.

2. Expenses incurred by the SFPUC for generation and distribution of electric power, including Hetch Hetchy Enterprise Power-Only expenses and the Power-Related share of Hetch Hetchy Enterprise Joint expenses. An exception to this is Regional energy costs incurred by the Water Enterprise, for which Wholesale Customers are charged on the basis of Proportional Annual Use.

3. Expenses incurred by SFPUC in providing water to Retail Customers.

4. Expenses associated with the SFPUC's accruals or allocations for uncollectible Retail Water accounts.

5. Attorneys' fees and costs incurred by the Wholesale Customers that a court of competent jurisdiction orders San Francisco to pay as part of a final, binding judgment against San Francisco as provided in Section 8.03.B.2.

6. Any expenses associated with funding any reserves (other than the required Wholesale Revenue Coverage Reserve described in Section 6.06) accrued and not anticipated to be paid within one year unless such reserve is established by mutual agreement of the SFPUC and BAWSCA.

7. Any expenses accrued in respect to pending or threatened litigation, damage or personal injury claims or other loss contingencies unless projected to be paid within one year. Otherwise, such expenses will be charged to the Wholesale Customers when actually paid.

8. Any expense associated with installing, relocating, enlarging, removing or modifying meters and service connections at the request of an individual Wholesale Customer.

9. The Retail Customers' portion of any Environmental Enhancement Surcharges imposed to enforce the Interim Supply Limitation set forth in Section 4.04.

C. <u>Revenues Not Credited to Payment of Wholesale Revenue Requirement</u>. The following payments by Wholesale Customers, individually or collectively, are not credited as Wholesale revenues for purposes of Section 6.05.B:

1. Payments by individual Wholesale Customers of the Environmental Enhancement Surcharge imposed to enforce the Interim Supply Limitation set forth in Section 4.04.

2. Payments of attorneys' fees and costs incurred by San Francisco that a court of competent jurisdiction orders the Wholesale Customers to pay as part of a final, binding judgment against the Wholesale Customers, as provided in Section 8.03.B.3.

3. Payments by individual Wholesale Customers for installation, relocation, enlargement, removal or modification of meters and service connections requested by, and charged to, a Wholesale Customer.

4. Payments applied to the amortization of the ending balance in the balancing account under the 1984 Agreement, pursuant to Section 6.05.A.

5. Payments of the Water Management Charge which are delivered to BAWSCA pursuant to Section 3.06.

6. Payments directed to the Wholesale Revenue Coverage Reserve pursuant to Section 6.06.

7. Prepayments authorized by Sections 5.03.C and 5.03.F.

D. Other

1. The Wholesale Customers will receive a proportional benefit from funds received by the SFPUC from (a) governmental grants, rebates, reimbursements or other subventions, (b) private-sector grants for Regional capital or operating purposes of the Water Enterprise and the Water-Only and Water-related portion of Joint Hetch Hetchy Water Enterprise expenses, or (c) a SFPUC use of taxable bonds.

2. The Wholesale Customers will receive a proportionate benefit from recovery of damages, including liquidated damages, by SFPUC from judgments against or settlements with contractors, suppliers, sureties, etc., related to Regional Water System projects and the Water-Only and Water-Related portion of Joint Hetch Hetchy Enterprise projects.

3. The SFPUC will continue to charge Wholesale Customers for assets acquired or constructed with proceeds of Indebtedness on which Wholesale Customers paid Debt Service during the Term of this Agreement on the “cash” basis (as opposed to the “utility” basis) after the expiration or earlier termination of this Agreement. The undertaking in this Section 5.10.D.3 will survive the expiration or earlier termination of this Agreement.

Article 6. Integration of Wholesale Revenue Requirement with SFPUC Budget Development and Rate Adjustments

6.01 General

A. The purpose of the allocation bases set forth in Article 5 is to determine the Wholesale Revenue Requirement for each fiscal year. The Wholesale Revenue Requirement can only be estimated in advance, based on projected costs and water deliveries. These projections are used to establish water rates applicable to the Wholesale Customers.

B. After the close of each fiscal year, the procedures described in Article 7 will be used to determine the actual Wholesale Revenue Requirement for that year, based on actual costs incurred, allocated according to the provisions of Article 5, and using actual water delivery data. The amount properly allocated to the Wholesale Customers shall be compared to the amount billed to the Wholesale Customers for the fiscal year, other than those identified in Section 5.10.C. The difference will be entered into a balancing account to be charged to, or credited to, the Wholesale Customers, as appropriate.

C. The balancing account shall be managed as described in Section 6.05.

6.02 Budget Development

The SFPUC General Manager will send a copy of the proposed SFPUC budget to BAWSCA at the same time as it is sent to the Commission. In addition, a copy of materials submitted to the Commission for consideration at meetings prior to the meeting at which the overall SFPUC budget is considered (including (a) operating budgets for the Water Enterprise and the Hetch Hetchy Enterprise, (b) budgets for SFPUC Bureaus, and (c) capital budgets for the Water Enterprise and the Hetch Hetchy Enterprise) will also be sent to BAWSCA concurrently with their submission to the Commission.

6.03 Rate Adjustments

A. Budget Coordinated Rate Adjustments. Adjustments to the rates applicable to the Wholesale Customers shall be coordinated with the budget development process described in this section except to the extent that Sections 6.03.B and 6.03.C authorize emergency rate increases and drought rate increases, respectively.

If the SFPUC intends to increase wholesale water rates during the ensuing fiscal year, it will comply with the following procedures:

1. Adjustments to the wholesale rates will be adopted by the Commission at a regularly scheduled meeting or at special meeting, properly noticed, called for the purpose of adjusting rates or for taking any other action under the jurisdiction of the Commission.

2. The SFPUC will send a written notice by mail or electronic means to each Wholesale Customer and to BAWSCA of the recommended adjustment at least thirty (30) days prior to the date of the meeting at which the Commission will consider the proposed adjustment. The notice will include the date, time and place of the Commission meeting.

3. The SFPUC shall prepare and provide to each Wholesale Customer and to BAWSCA the following materials: (a) a table illustrating how the increase or decrease in the Wholesale Revenue Requirement and wholesale rates were calculated, substantially in the form of Attachment N-1, (b) a schedule showing the projected expenses included in the Wholesale Revenue Requirement for the fiscal year for which the rates are being proposed, and supporting materials, substantially in the form of Attachment N-2, and (c) a schedule showing projected water sales, Wholesale Revenue Requirements and wholesale rates for the fiscal year for which rates are being set and the following four years, substantially in the form of Attachment N-3. These materials will be included with the notification required by Section 6.03.A.2.

4. Rate adjustments will be effective no sooner than thirty (30) days after adoption of the wholesale rate by the Commission.

5. San Francisco will use its best efforts to provide the Wholesale Customers with the information described above. San Francisco's failure to comply with the requirements set forth in this section shall not invalidate any action taken by the Commission (including, but not limited to, any rate increase or decrease adopted). In the event of such failure, the Wholesale Customers may either invoke arbitration, as set forth in Section 8.01, or seek injunctive relief, to compel San Francisco to remedy the failure as soon as is reasonably practical, and San Francisco shall be free to oppose the issuance of the requested judicial or arbitral relief on any applicable legal or equitable basis. The existence of this right to resort to arbitration shall not be deemed to preclude the right to seek injunctive relief.

6. Because delays in the budget process or other events may cause San Francisco to defer the effective date of Wholesale Customer rate adjustments until after the beginning of San Francisco's fiscal year, nothing contained in this Agreement shall require San Francisco to make any changes in the water rates charged to Wholesale Customers effective at

the start of San Francisco's fiscal year or at any other specific date. Nothing in the preceding sentence shall excuse non-compliance with the provisions of Section 6.02 and this section.

B. **Emergency Rate Increases**. The Commission may adjust the Wholesale Customers' rates without complying with the requirements of Section 6.03.A in response to an Emergency that damages the Regional Water System and disrupts San Francisco's ability to maintain normal deliveries of water to Retail and Wholesale Customers. In such an Emergency, the Commission may adopt an emergency rate surcharge applicable to Wholesale Customers without following the procedures set forth in this section, provided that any such rate surcharge imposed by the Commission shall be applicable to both Retail and Wholesale Customers and incorporate the same percentage increase for all customers. Any emergency rate surcharge adopted by the Commission shall remain in effect only until the next-budget coordinated rate-setting cycle.

C. **Drought Rates**. If the Commission declares a water shortage emergency under Water Code Section 350, implements the Tier 1 Shortage Plan (Attachment H) described in Section 3.11.C, and imposes drought rates on Retail Customers, it may concurrently adjust wholesale rates independently of coordination with the annual budget process. Those adjustments may be designed to encourage water conservation and may constitute changes to the structure of the rates within the meaning of Section 6.04. The parties agree, however, that, in adopting changes in rates in response to a declaration of water shortage emergency, the Commission shall comply with Section 6.03.A.1 and 2 but need not comply with Section 6.04.B. Drought Rate payments and payments of excess use charges levied in accordance with the Tier 1 Shortage Plan described in Section 3.11.C constitute Wholesale Customer Revenue and count towards the Wholesale Revenue Requirement. The SFPUC may use these revenues to purchase additional water for the Wholesale Customers from the State Drought Water Bank or other willing seller.

6.04 **Rate Structure**

A. This Agreement is not intended and shall not be construed to limit the Commission's right (a) to adjust the structure of the rate schedule applicable to the Wholesale Customers (i.e., the relationship among the several charges set out therein) or (b) to add, delete, or change the various charges which make up the rate schedule, provided that neither such charges nor the structure of the rate schedule(s) applicable to the Wholesale Customers shall be arbitrary, unreasonable, or unjustly discriminatory as among said customers. The

SFPUC will give careful consideration to proposals for changes in the rate schedule made jointly by the Wholesale Customers but, subject to the limitations set out above, shall retain the sole and exclusive right to determine the structure of the rate schedule.

B. If the SFPUC intends to recommend that the Commission adopt one or more changes to the structure of wholesale rates (currently set forth in SFPUC Rate Schedule W-25), it shall prepare and distribute to the Wholesale Customers and BAWSCA a report describing the proposed change(s), the purpose(s) for which it/they are being considered, and the estimated financial effect on individual Wholesale Customers or classes of customers. Wholesale Customers may submit comments on the report to the SFPUC for sixty (60) days after receiving the report. The SFPUC will consider these comments and, if it determines to recommend that the Commission adopt the change(s), as described in the report or as modified in response to comments, the SFPUC General Manager shall submit a report to the Commission recommending specific change(s) in the rate structure. Copies of the General Manager's report shall be sent to all Wholesale Customers and BAWSCA at least thirty (30) days prior to the Commission meeting at which the changes will be considered.

C. The SFPUC may recommend, and the Commission may adopt, changes in the structure of wholesale rates at any time. However, the new rate schedule implementing these changes will become effective at the beginning of the following fiscal year.

6.05 Balancing Account

A. Balancing Account Established Under 1984 Agreement. The amount of credit in favor of San Francisco as of the expiration of the term of 1984 Agreement (June 30, 2009) is not known with certainty as of preparation and execution of this Agreement. It will not be known with certainty until the Compliance Audit for FY 2008-09 is completed and disputes, if any, that the Wholesale Customers or the SFPUC may have with the calculation of the Suburban Revenue Requirement for that fiscal year and for previous fiscal years have been settled or decided by arbitration.

The parties anticipate that the amount of the credit in favor of San Francisco as of June 30, 2009 may be within the range of $15 million to $20 million.

In order to reduce the credit balance due San Francisco under the 1984 Agreement in an orderly manner, while avoiding unnecessary fluctuations in wholesale rates, the parties agree to implement the following procedure.

1. In setting wholesale rates for FY 2009-10, SFPUC will include a balancing account repayment of approximately $2 million.

2. In setting wholesale rates for FY 2010-11 and following years, SFPUC will include a balancing account repayment of not less than $2 million and not more than $5 million annually until the full amount of the balance due, plus interest at the rate specified in Section 6.05.B, is repaid.

3. The actual ending balance as of June 30, 2009 will be determined, by the parties' agreement or arbitral ruling, after the Compliance Audit report for FY 2008-09 is delivered to BAWSCA. That amount, once determined, will establish the principal to be amortized through subsequent years' repayments pursuant to this Section 6.05.A.

B. Balancing Account Under This Agreement

1. Operation. After the close of each fiscal year, the SFPUC will compute the costs allocable to the Wholesale Customers for that fiscal year pursuant to Article 5, based on actual costs incurred by the SFPUC and actual amounts of water used by the Wholesale Customers and the Retail Customers. That amount will be compared to the amounts billed to the Wholesale Customers for that fiscal year (including any Excess Use Charges, but excluding revenues described in Section 5.10.C). The difference will be posted to a "balancing account" as a credit to, or charge against, the Wholesale Customers. Interest shall also be posted to the balancing account calculated by multiplying the amount of the opening balance by the average net interest rate, certified by the Controller as earned in the San Francisco Treasury for the previous fiscal year on the San Francisco County Pooled Investment Account. Interest, when posted, will carry the same mathematical sign (whether positive or negative) as carried by the opening balance. The amount posted to the balancing account in each year shall be added to, or subtracted from, the balance in the account from previous years. The calculation of the amount to be posted to the balancing account shall be included in the report prepared by the SFPUC pursuant to Section 7.02.

The opening balance for fiscal year 2009-10 shall be zero.

2. Integration of Balancing Account with Wholesale Rate Setting Process. If the amount in the balancing account is owed to the Wholesale Customers (a positive balance), the SFPUC shall take it into consideration in establishing wholesale rates. However, the SFPUC need not apply the entire amount to reduce wholesale rates for the immediately ensuing

year. Instead, the SFPUC may prorate a positive ending balance over a period of up to three successive years in order to avoid fluctuating decreases and increases in wholesale rates.

a. If a positive balance is maintained for three successive years and represents 10 percent or more of the Wholesale Revenue Requirement for the most recent fiscal year, the SFPUC shall consult with BAWSCA as to the Wholesale Customers' preferred application of the balance. The Wholesale Customers shall, through BAWSCA, direct that the positive balance be applied to one or more of the following purposes: (a) transfer to the Wholesale Revenue Coverage Reserve, (b) amortization of any remaining negative balance from the ending balancing account under the 1984 Agreement, (c) prepayment of the existing asset balance under Section 5.03, (d) water conservation or water supply projects administered by or through BAWSCA, (e) immediate reduction of wholesale rates, or (f) continued retention for future rate stabilization purposes. In the absence of a direction from BAWSCA, the SFPUC shall continue to retain the balance for rate stabilization in subsequent years.

b. If the amount in the balancing account is owed to the SFPUC (a negative balance), the SFPUC shall not be obligated to apply all or any part of the negative balance in establishing wholesale rates for the immediately ensuring year. Instead, the SFPUC may prorate the negative balance in whole or in part over multiple years in order to avoid fluctuating increases and decreases in wholesale rates.

6.06 Wholesale Revenue Coverage Reserve

A. The SFPUC may include in wholesale rates for any fiscal year an additional dollar amount ("Wholesale Revenue Coverage"), which for any fiscal year shall equal the following:

1. The lesser of (i) 25% of the Wholesale Customers' share of Net Annual Debt Service for that fiscal year determined as described in Section 5.04.A, or (ii) the amount necessary to meet the Wholesale Customers' proportionate share of Debt Service coverage required by then-current Indebtedness for that fiscal year, minus

2. A credit for (i) the actual amounts previously deposited in the "Wholesale Revenue Coverage Reserve" (as defined in subsection B below), (ii) accrued interest on the amounts on deposit in the Wholesale Revenue Coverage Reserve, and (iii) an amount equal to any additional interest that would have accrued on the actual amounts previously deposited in

the Wholesale Revenue Coverage Reserve assuming no withdrawals had been made therefrom.

B. During each fiscal year, the SFPUC will set aside and deposit that portion of revenue equal to Wholesale Revenue Coverage into a separate account that the SFPUC will establish and maintain, to be known as the "Wholesale Revenue Coverage Reserve." Deposits into the Wholesale Revenue Coverage Reserve shall be made no less frequently than monthly. The Wholesale Revenue Coverage Reserve shall be credited with interest at the rate specified in Section 6.05.B. The SFPUC may use amounts in the Wholesale Revenue Coverage Reserve for any lawful purpose. Any balance in the Wholesale Revenue Coverage Reserve in excess of the Wholesale Revenue Coverage amount as of the end of any fiscal year (as calculated in subsection 6.06(A) above) shall be applied as a credit against wholesale rates in the immediately following fiscal year unless otherwise directed by BAWSCA.

C. Within 180 days following the later of expiration of the Term or final payment of Debt Service due on Indebtedness issued during the Term to which Wholesale Customers were contributing, SFPUC shall rebate to the Wholesale Customers an amount equal to the Wholesale Revenue Coverage amount in effect for the fiscal year during which the Term expires or the final payment of Debt Service on Indebtedness is made based on each Wholesale Customer's Proportional Annual Use in the fiscal year during which the Term expires or the final payment of debt service on Indebtedness is made.

D. SFPUC shall provide a schedule of debt issuance (with assumptions), and the Wholesale Customers' share of Net Annual Debt Service (actual and projected) expected to be included in wholesale rates starting in 2009-10 through the expected completion of the WSIP. The schedule is to be updated annually prior to rate setting. If estimated Debt Service is used in rate setting, the SFPUC must be able to demonstrate that the Water Enterprise revenues will be sufficient to meet the additional bonds test for the proposed bonds and rate covenants for the upcoming year.

E. Conditions in the municipal bond market may change from those prevailing in 2009. If, prior to expiration of the Term, the SFPUC determines that it would be in the best financial interest of both Retail Customers and Wholesale Customers of the Regional Water System for the Debt Service coverage requirement to be increased in one or more series of proposed new Indebtedness above 1.25%, or for the coverage covenant to be strengthened in

other ways, it will provide a written report to BAWSCA. The report will contain (1) a description of proposed covenant(s) in the bond indenture; (2) an explanation of how savings are expected to be achieved (e.g., increase in the SFPUC's credit rating over the then-current level; ability to obtain credit enhancement, etc.); (3) the estimated all-in true interest cost savings; (4) a comparison of the Wholesale Revenue Requirements using the Debt Service coverage limitation in subsection A and under the proposed methodology; and (5) a comparison of the respective monetary benefits expected to be received by both Retail and Wholesale Customers. The SFPUC and BAWSCA agree to meet and confer in good faith about the proposed changes.

F. Any increase in Debt Service coverage proposed by the SFPUC shall be commensurate with Proportional Water Use by Retail and Wholesale Customers. If the SFPUC demonstrates that an increase in Debt Service coverage will result in equivalent percentage reductions in total Wholesale and Retail Debt Service payments over the life of the proposed new Indebtedness, based on Proportional Water Use, BAWSCA may agree to a modification of the Wholesale Revenue Coverage requirement in subsection A. If BAWSCA does not agree to a proposed modification in coverage requirements in the covenants for new Indebtedness, SFPUC may nevertheless proceed with the modification and the issuance of new Indebtedness. Any Wholesale Customer, or BAWSCA, may challenge an increase in the Wholesale Revenue Requirement resulting from the modification in Debt Service coverage through arbitration as provided in Section 8.01.A. If the arbitrator finds that the increase in Debt Service coverage (1) did not and will not result in equivalent percentage reductions in total Wholesale and Retail Debt Service payments over the life of the proposed new Indebtedness, based on Proportional Water Use, or (2) was not commensurate with Proportional Water Use, the arbitrator may order the Wholesale Revenue Requirement to be recalculated both retrospectively and prospectively to eliminate the differential impact to Wholesale or Retail Customers, subject to the limitation in Section 8.01.C.

6.07 Working Capital Requirement

A. The SFPUC maintains working capital in the form of unappropriated reserves for the purpose of bridging the gap between when the SFPUC incurs operating expenses required to provide service and when it receives revenues from its Retail and Wholesale Customers. The Wholesale Customers shall fund their share of working capital as part of the annual Wholesale Revenue Requirement calculation. The amount of wholesale working capital for which the Wholesale Customers will be responsible will be determined using the 60-day standard formula approach.

B. Applying this approach, annual wholesale working capital equals one-sixth of the wholesale allocation of operation and maintenance, administrative and general, and property tax expenses for the Water and Hetch Hetchy Enterprises. Wholesale working capital shall be calculated separately for the Water and Hetch Hetchy Enterprises.

C. Each month, the sum of the Water Enterprise and Hetch Hetchy Enterprise working capital components will be compared with the ending balance in the Wholesale Revenue Coverage Reserve to determine if the Wholesale Customers provided the minimum required working capital. If the Wholesale Revenue Coverage Reserve is greater than the total Water Enterprise and Hetch Hetchy Enterprise working capital requirement, the Wholesale Customers will have provided their share of working capital. If the Wholesale Revenue Coverage Reserve is less than the total Water Enterprise and Hetch Hetchy Enterprise working capital requirement, the Wholesale Customers will be charged interest on the difference, which will be included in the adjustment to the Balancing Account under Section 6.05.B for the subsequent fiscal year.

6.08 Wholesale Capital Fund

A. The SFPUC currently funds revenue-funded capital projects through annual budget appropriations that are included in rates established for that fiscal year and transferred to a capital project fund from which expenditures are made. Consistent with the San Francisco Charter and Administrative Code, the SFPUC appropriates funds in advance of construction in order to maintain a positive balance in the capital project fund. The capital project fund also accrues interest and any unspent appropriations in excess of total project costs. It is the SFPUC's practice to regularly monitor the capital project fund balance to determine whether a surplus has accumulated, which can be credited against the next fiscal year's capital project appropriation.

B. The SFPUC shall establish a comparable Wholesale Revenue-Funded Capital Fund (Wholesale Capital Fund) to enable the Wholesale Customers to fund the wholesale share of revenue-funded New Regional Assets. The Wholesale Capital Fund balance is zero as of July 1, 2009. The SFPUC may include in wholesale rates for any fiscal year an amount equal to the wholesale share of the SFPUC's appropriation for revenue funded New Regional Assets for that year, which sum will be credited to the Wholesale Capital Fund. The wholesale share of other sources of funding, where legally permitted and appropriately accounted for under GAAP,

will also be credited to the Wholesale Capital Fund, together with interest earnings on the Wholesale Capital Fund balance.

C. The SFPUC will expend revenues appropriated and transferred to the Wholesale Capital Fund only on New Regional Assets. The annual capital appropriation included in each fiscal year's budget will be provided to BAWSCA in accordance with Section 6.02 and will take into account the current and projected balance in the Wholesale Capital Fund, as well as current and projected unexpended and unencumbered surplus, as shown on attachment M-1, which will be prepared by the SFPUC each year.

D. Commencing on November 30, 2010 and thereafter in each fiscal year during the Term, the SFPUC will also provide an annual report to BAWSCA on the status of individual revenue-funded New Regional Assets, substantially in the form of Attachment M-2.

E. In order to prevent the accumulation of an excessive unexpended and unencumbered surplus in the Wholesale Capital Fund, the status of the fund balance will be reviewed through the Compliance Audit at five-year intervals, commencing in FY 2014-15. Any excess fund balance (i.e., an accumulated unexpended, unencumbered amount in excess of ten percent (10%) of the wholesale share of total capital appropriations for New Regional Assets during the five preceding years) will be transferred to the credit of the Wholesale Customers to the Balancing Account described in Section 6.05. Attachment M-3 illustrates the operation of this review process, covering FY 2009-10 through FY 2013-14 and FY 2014-15 through 2018-19.

F. Three years prior to the end of the Term, the SFPUC and BAWSCA will discuss the disposition of the Wholesale Capital Fund balance at the end of the Term. Absent agreement, any balance remaining in the Wholesale Capital Fund at the end of the Term shall be transferred to the Balancing Account, to the credit of the Wholesale Customers.

Article 7. Accounting Procedures; Compliance Audit

7.01 SFPUC Accounting Principles, Practices

A. Accounting Principles. San Francisco will maintain the accounts of the SFPUC and the Water and Hetch Hetchy Enterprises in conformity with Generally Accepted Accounting Principles. San Francisco will apply all applicable pronouncements of the Governmental Accounting Standards Board (GASB) as well as statements and interpretations of the Financial Accounting Standards Board and Accounting Principles Board opinions issued on or before March 30, 1989, unless those pronouncements or opinions conflict with GASB pronouncements.

B. General Rule. San Francisco will maintain the accounting records of the SFPUC and the Water and Hetch Hetchy Enterprises in a format and level of detail sufficient to allow it to determine the annual Wholesale Revenue Requirement in compliance with this Agreement and to allow its determination of the Wholesale Revenue Requirement to be audited as provided in Section 7.04.

C. Water Enterprise. San Francisco will maintain an account structure which allows utility plant and operating and maintenance expenses to be segregated by location (inside San Francisco and outside San Francisco) and by function (Direct Retail, Regional and Direct Wholesale).

D. Hetch Hetchy Enterprise. San Francisco will maintain an account structure which allows utility plant and operating and maintenance expenses to be segregated into Water Only, Power Only and Joint categories.

E. SFPUC. San Francisco will maintain an account structure which allows any expenses of SFPUC bureaus that benefit only the Wastewater Enterprise, the Power-Only operations of the Hetch Hetchy Enterprise or Retail Customers to be excluded from the Wholesale Revenue Requirement.

F. Utility Plant Ledgers. San Francisco will maintain subsidiary plant ledgers for the Water and Hetch Hetchy Enterprises that contain unique identifying numbers for all assets included in the rate base and identify the original cost, annual depreciation, accumulated depreciation, date placed in service, useful life, salvage value if any, source of funding (e.g., bond series, revenues, grants), and classification for purposes of this Agreement.

G. Debt. San Francisco will maintain documentation identifying:

1. The portion of total bonded debt outstanding related to each series of each bond issue.

2. The portion of total interest expense related to each series of each bond issue.

3. The use of proceeds of each bond issue (including proceeds of commercial paper and/or other interim financial instruments redeemed or expected to be redeemed from bonds and earnings on the proceeds of financings) in sufficient detail to determine, for each bond issue, the proceeds and earnings of each (including proceeds and earnings of interim financing vehicles redeemed by a bond issue) and the total amounts expended on Direct Retail improvements and the total amounts expended on Regional improvements.

H. Changes in Accounting. Subject to subsections A thru G, San Francisco may change the chart of accounts and accounting practices of the SFPUC and the Water and Hetch Hetchy Enterprises. However, the allocation of any expense to the Wholesale Customers that is specified in the Agreement may not be changed merely because of a change in (1) the accounting system or chart of accounts used by SFPUC, (2) the account to which an expense is posted or (3) a change in the organizational structure of the SFPUC or the Water or Hetch Hetchy Enterprises.

I. Audit. San Francisco will arrange for an audit of the financial statements of Water and Hetch Hetchy Enterprises to be conducted each year by an independent certified public accountant, appointed by the Controller, in accordance with Generally Accepted Auditing Standards.

7.02 Calculation of and Report on Wholesale Revenue Requirement

A. Within five months after the close of each fiscal year, San Francisco will prepare a report showing its calculation of the Wholesale Revenue Requirement for the preceding fiscal year and the change in the balancing account as of the end of that fiscal year. The first such report will be prepared by November 30, 2010 and will cover fiscal year 2009-10 and the balancing account as of June 30, 2010.

B. The report will consist of the following items:

1. Statement of changes in the balancing account for the fiscal year being reported on, and for the immediately preceding fiscal year, substantially in the form of Attachment O.

2. Detailed supporting schedules 8.1 through 8.2 substantially in the form of Attachment N-2.

3. Description and explanation of any changes in San Francisco's accounting practices from those previously in effect.

4. Explanation of any line item of expense (shown on Attachment N-2, schedules 1 and 4) for which the amount allocated to the Wholesale Customers increased by (a) ten percent or more from the preceding fiscal year, or (b) more than $1,000,000.

5. Representation letter signed by the SFPUC General Manager and by other SFPUC financial staff shown on Attachment P, as the General Manager may direct, subject to change in position titles at the discretion of the SFPUC.

C. The report will be delivered to the BAWSCA General Manager by the date identified in Subsection A.

Once the report has been delivered to BAWSCA, San Francisco will, upon request:

1. Provide BAWSCA with access to, and copies of, all worksheets and supporting documents used or prepared by San Francisco during its calculation of the Wholesale Revenue Requirement;

2. Make available to BAWSCA all supporting documentation and calculations used by San Francisco in preparing the report; and

3. Promptly provide answers to questions from BAWSCA staff about the report.

7.03 Appointment of Compliance Auditor

A. Purpose. The purpose of this section is to provide for an annual Compliance Audit by an independent certified public accountant of the procedures followed and the underlying data used by San Francisco in calculating the Wholesale Revenue Requirement for the preceding fiscal year. The annual Compliance Audit shall also determine whether the Wholesale Revenue Requirement has been calculated in accordance with the terms of the Agreement and whether amounts paid by the Wholesale Customers in excess of or less than the Wholesale Revenue Requirement have been posted to the balancing account, together with interest as provided in Section 6.05.

B. Method of Appointment. The Controller shall select an independent certified public accountant ("Compliance Auditor") to conduct the Compliance Audit described below. The Compliance Auditor may be the same certified public accountant engaged by the Controller to audit the financial statements of the Water and Hetch Hetchy Enterprises. Subject to approval by the Controller and the General Manager of the SFPUC, the Compliance Auditor shall have the authority to engage such consultants as it deems necessary or appropriate to assist in the audit. The terms of this Article shall be incorporated into the contract between San Francisco and the Compliance Auditor, and the Wholesale Customers shall be deemed to be third-party beneficiaries of said contract.

7.04 Conduct of Compliance Audit

A. Standards. The Compliance Auditor shall perform the Compliance Audit in accordance with Generally Accepted Auditing Standards. In particular, its review shall be governed by the standards contained in Section AU 623 (Reports on Specified Elements, Accounts or Items of a Financial Statement) of the AICPA, *Professional Standards*, as amended from time to time.

B. Preliminary Meeting; Periodic Status Reports; Access to Data. Prior to commencing the audit, the Compliance Auditor shall meet with San Francisco and BAWSCA to discuss the audit plan, the procedures to be employed and the schedule to be followed. During the course of the audit, the Compliance Auditor shall keep San Francisco and BAWSCA informed of any unforeseen problems or circumstances which could cause a delay in the audit or any material expansion of the audit's scope. The Compliance Auditor shall be given full

access to all records of the SFPUC and the Water and Hetch Hetchy Enterprises that the Auditor deems necessary for the audit.

C. Audit Procedures. The Compliance Auditor shall review San Francisco's calculation of the Wholesale Revenue Requirement and the underlying data in order to carry out the purpose of the audit described in Section 7.03.A and to issue the report described in Section 7.05. At a minimum, the Compliance Auditor shall address the following:

1. Water Enterprise Operating and Maintenance Expenses. The Compliance Auditor shall review Water Enterprise cost ledgers to determine whether the recorded operating and maintenance expenses fairly reflect the costs incurred, were recorded on a basis consistent with applicable Generally Accepted Accounting Principles, and were allocated to the Wholesale Customers as provided in this Agreement.

2. Water Enterprise Administrative and General Expenses. The Compliance Auditor shall review Water Enterprise cost ledgers and other appropriate financial records, including those of the SFPUC, to determine whether the recorded administrative and general expenses fairly reflect the costs incurred by or allocated to the Water Enterprise, whether they were recorded on a basis consistent with applicable Generally Accepted Accounting Principles, whether SFPUC charges were allocated to the Water Enterprise in accordance with this Agreement, and whether the amount of administrative and general expenses allocated to the Wholesale Customers was determined as provided by this Agreement.

3. Property Taxes. The Compliance Auditor shall review Water Enterprise cost ledgers to determine whether the amount of property taxes shown on the report fairly reflects the property tax expense incurred by San Francisco for Water Enterprise property outside of San Francisco and whether there has been deducted from the amount to be allocated (1) all taxes actually reimbursed to San Francisco by tenants of Water Enterprise property under leases that require such reimbursement and (2) any refunds received from the taxing authority. The Compliance Auditor also shall determine whether the amount of property taxes allocated to the Wholesale Customers was determined as provided in this Agreement.

4. Debt Service. The Compliance Auditor shall review SFPUC records to determine whether debt service, and associated coverage requirements, were allocated to the Wholesale Customers as provided in this Agreement.

5. Amortization of Existing Assets in Service as of June 30, 2009. The Compliance Auditor shall review both Water and Hetch Hetchy Enterprise records to determine whether the payoff amount for Existing Assets allocated to the Wholesale Customers as shown on Attachment K-1 through K-4 was calculated as provided in Section 5.03 of this Agreement.

6. Revenue-Funded Capital Appropriations/Expenditures. The Compliance Auditor shall review San Francisco's calculation of actual expenditures on the wholesale share of revenue-funded New Regional Assets and remaining unexpended and unencumbered project balances in the "Wholesale Capital Fund" described in Section 6.08, to determine whether the procedures contained in that section were followed.

7. Hetch Hetchy Expenses. The Compliance Auditor shall determine whether Hetch Hetchy Enterprise expenses were allocated to the Wholesale Customers as provided in this Agreement.

D. Use of and Reliance on Audited Financial Statements and Water Use Data

1. In performing the audit, the Compliance Auditor shall incorporate any adjustments to the cost ledgers recommended by the independent certified public accountant, referred to in Section 7.01.I, which audited the financial statements of the Water and Hetch Hetchy Enterprises. The Compliance Auditor may rely upon the work performed by that independent certified public accountant if the Compliance Auditor reviews the work and is willing to take responsibility for it as part of the compliance audit.

2. In performing the Compliance Audit and issuing its report, the Compliance Auditor may rely on water use data furnished by the Water Enterprise, regardless of whether the Wholesale Customers contest the accuracy of such data. The Compliance Auditor shall have no obligation to independently verify the accuracy of the water use data provided by San Francisco; however, the Compliance Auditor shall disclose in its report any information which came to its attention suggesting that the water use data provided by San Francisco are inaccurate in any significant respect.

E. Exit Conference. Upon completion of the audit, the Compliance Auditor shall meet with San Francisco and BAWSCA to discuss audit findings, including (1) any material weakness in internal controls and (2) adjustments proposed by the Compliance Auditor and San Francisco's response (i.e., booked or waived).

7.05 Issuance of Compliance Auditor's Report

A. San Francisco will require the Compliance Auditor to issue its report no later than nine months after the fiscal year under audit (i.e., March 31 of the following calendar year). The Compliance Auditor's report shall be addressed and delivered to San Francisco and BAWSCA. The report shall contain:

1. A statement that the Auditor has audited the report on the calculation of the Wholesale Revenue Requirement and changes in the balancing account, and supporting documents, prepared by San Francisco as required by Section 7.02.

2. A statement that the audit was conducted in accordance with auditing standards generally accepted in the United States of America, and that the audit provides a reasonable basis for its opinion.

3. A statement that in the Compliance Auditor's opinion the Wholesale Revenue Requirement was calculated by San Francisco in accordance with this Agreement and that the change in the balancing account shown in San Francisco's report was calculated as required by this Agreement and presents fairly, in all material respects, changes in and the balance due to (or from) the Wholesale Customers as of the end of the fiscal year under audit.

7.06 Wholesale Customer Review

A. One or more Wholesale Customers, or BAWSCA, may engage an independent certified public accountant (CPA) to conduct a review (at its or their expense) of San Francisco's calculation of the annual Wholesale Revenue Requirement and a review of changes in the balancing account.

B. If a Wholesale Customer or BAWSCA wishes such a review to be conducted it will provide written notice to SFPUC within 30 days of the date the Compliance Auditor's report is issued. The notice will identify the CPA or accounting/auditing firm that will conduct the review and the specific aspects of the Compliance Auditor's report that are the subject of the review. If more than one notice of review is received by the SFPUC, the requesting Wholesale Customers shall combine and coordinate their reviews and select a lead auditor to act on their behalf for the purposes of requesting documents and conducting on-site investigations.

C. San Francisco will cooperate with the CPA appointed by a Wholesale Customer or BAWSCA. This cooperation includes making requested records promptly available, making

knowledgeable SFPUC personnel available to timely and truthfully answer the CPA's questions and directing the Compliance Auditor to cooperate with the CPA.

D. The Wholesale Customer's review shall be completed within 60 days after the date the Compliance Auditor's report is issued. At the conclusion of the review, representatives of San Francisco and BAWSCA shall meet to discuss any differences between them concerning San Francisco's compliance with Articles 5 or 6 of this Agreement during the preceding fiscal year or San Francisco's calculation of the Wholesale Revenue Requirement for the preceding fiscal year. If such differences cannot be resolved, the dispute shall be submitted to arbitration in accordance with Section 8.01.

Article 8. Other Agreements of the Parties

8.01 Arbitration and Judicial Review

A. General Principles re Scope of Arbitration. All questions or disputes arising under the following subject areas shall be subject to mandatory, binding arbitration and shall not be subject to judicial determination:

1. the determination of the Wholesale Revenue Requirement, which shall include both the calculations used in the determination and the variables used in those calculations;

2. the SFPUC's adherence to accounting practices and conduct of the Compliance Audit; and

3. the SFPUC's classification of new assets for purposes of determining the Wholesale Revenue Requirement.

All other questions or disputes arising under this Agreement shall be subject to judicial determination. Disputes about the scope of arbitrability shall be resolved by the courts.

B. Demand for Arbitration. If any arbitrable question or dispute should arise, any Wholesale Customer or the SFPUC may commence arbitration proceedings hereunder by service of a written Demand for Arbitration. Demands for arbitration shall set forth all of the issues to be arbitrated, the general contentions relating to those issues, and the relief sought by the party serving the Demand. Within 45 days after service of a Demand upon it, any Wholesale Customer or the SFPUC may serve a Notice of Election to become a party to the arbitration and a Response to the issues set forth in the Demand. The Response shall include the party's general contentions and defenses with respect to the claims made in the Demand, and may include any otherwise arbitrable claims, contentions and demands that concern the fiscal year covered by the Demand. If a timely Notice of Election and Response is not filed by any such entity, it shall not be a party to the arbitration but shall nonetheless be bound by the award of the arbitrator. If no party to this Agreement serves a timely Notice of Election and Response, the party seeking arbitration shall be entitled to the relief sought in its Demand for Arbitration without the necessity of further proceedings. Any claims not made in a Demand or Response shall be deemed waived.

If a Demand or Notice of Election is made by the SFPUC, it shall be served by personal delivery or certified mail to each Wholesale Customer at the address of such customer as set forth in the billing records of the SFPUC. If a Demand or Notice of Election is made by a Wholesale Customer, service shall be by certified mail or personal delivery to the General Manager, SFPUC, 1155 Market Street, 11th Floor, San Francisco, California 94103, and to each of the other Wholesale Customers. If arbitration is commenced, the Wholesale Customers shall use their best efforts to formulate a single, joint position with respect thereto. In any event, with respect to the appointment of arbitrators, as hereinafter provided, all Wholesale Customers that take the same position as to the issues to be arbitrated shall jointly and collectively be deemed to be a single party.

C. Limitations Period. All Demands For Arbitration shall be served within twelve months of receipt by BAWSCA of the Wholesale Revenue Requirement Compliance Auditor's Report for that year. If a party fails to file a Demand within the time period specified in this subsection, that party waives all present and future claims with respect to the fiscal year in question. If no such Demand is served within the twelve month period specified above, the SFPUC's determination of the Wholesale Revenue Requirement for that year shall be final and conclusive. Whether any particular claim is barred by the twelve month limitations period provided for herein shall be for the arbitrator to determine. Prior to the expiration of the twelve month limitations period, the parties to the dispute may agree by written stipulation to extend the period by up to six additional months.

The Arbitrator may order the alteration or recalculation of underlying Water Enterprise and/or Hetch Hetchy Enterprise accounts or asset classifications. Such changes shall be used to calculate the Wholesale Revenue Requirement for the fiscal year in dispute and shall also be used to determine future Wholesale Revenue Requirements, if otherwise applicable, even though the existing entries in such accounts or the asset classifications, in whole or in part, predate the twelve month period described above, so long as a timely arbitration Demand has been filed in accordance with this subsection.

D. Number and Appointment of Arbitrators. All arbitration proceedings under this section shall be conducted by a single arbitrator, selected by the SFPUC and a designated representative of the Wholesale Customers or each group of Wholesale Customers that take the same position with respect to the arbitration, within 75 days after service of the Demand. If the parties to the arbitration cannot agree on an arbitrator within 75 days, any party may petition

the Marin County Superior Court for the appointment of an arbitrator pursuant to Code of Civil Procedure Section 1281.6 (or any successor provision).

E. Guidelines for Qualifications of Arbitrators. The Wholesale Customers and the SFPUC acknowledge that the qualifications of the arbitrator will vary with the nature of the matter arbitrated, but, in general, agree that such qualifications may include service as a judge or expertise in one or more of the following fields: public utility law, water utility rate setting, water system and hydraulic engineering, utility accounting methods and practices, and water system operation and management. The parties to the arbitration shall use their best efforts to agree in advance upon the qualifications of any arbitrator to be appointed by the Superior Court.

F. Powers of Arbitrator; Conduct of Proceedings

1. Except as provided in this section, arbitrations under this section shall be conducted under and be governed by the provisions of California Code of Civil Procedure Sections 1282.2 through 1284.2 (hereinafter, collectively, "Code sections"), and arbitrators appointed hereunder shall have the powers and duties specified by the Code sections.

2. Within the meaning of the Code sections, the term "neutral arbitrator" shall mean the single arbitrator selected by the parties to the arbitration.

3. Unless waived in writing by the parties to the arbitration, the notice of hearing served by the arbitrator shall not be less than 90 days.

4. The lists of witnesses (including expert witnesses), and the lists of documents (including the reports of expert witnesses) referred to in Code of Civil Procedure Section 1282.2 shall be mutually exchanged, without necessity of demand therefore, no later than 60 days prior to the date of the hearing, unless otherwise agreed in writing by the parties to the arbitration. Upon application of any party, or on his or her own motion, the arbitrator may schedule one or more prehearing conferences for the purposes of narrowing and/or expediting resolution of the issues in dispute. Strict conformity to the rules of evidence is not required, except that the arbitrator shall apply applicable law relating to privileges and work product. The arbitrator shall consider evidence that he or she finds relevant and material to the dispute, giving the evidence such weight as is appropriate. The arbitrator may limit testimony to exclude evidence that would be immaterial or unduly repetitive, provided that all parties are afforded the opportunity to present material and relevant evidence.

5. Within thirty days after the close of the arbitration hearing, or such other time as the arbitrator shall determine, the parties will submit proposed findings and a proposed remedy to the arbitrator. The parties may file objections to their adversary's proposed findings and remedy within a time limit to be specified by the arbitrator. The arbitrator shall not base his or her award on information not obtained at the hearing.

6. The arbitrator shall render a written award no later than twelve months after the arbitrator is appointed, either by the parties or by the court, provided that such time may be waived or extended as provided in Code of Civil Procedure Section 1283.8.

7. The provisions for discovery set forth in Code of Civil Procedure Section 1283.05 are incorporated into and made part of this Agreement, except that: (a) leave of the arbitrator need not be obtained for the taking of depositions, including the depositions of expert witnesses; (b) the provisions of Code of Civil Procedure Section 2034.010 et seq., relating to discovery of expert witnesses, shall automatically be applicable to arbitration proceedings arising under this Agreement without the necessity for a formal demand pursuant to Section 2034.210 and the date for the exchange of expert discovery provided by Sections 2034.260 and 2034.270 shall be not later than 60 days prior to the date for the hearing; and (c) all reports, documents, and other materials prepared or reviewed by any expert designated to testify at the arbitration shall be discoverable. In appropriate circumstances, the arbitrator may order any party to this Agreement that is not a party to the arbitration to comply with any discovery request.

8. For the purposes of allocation of expenses and fees, as provided in Code of Civil Procedure Section 1284.2, if any two or more Wholesale Customers join together in a single, joint position in the arbitration, those Wholesale Customers shall be deemed to be a single party. If any Wholesale Customer or customers join together with the SFPUC in a single joint position in the arbitration, those Wholesale Customers and the SFPUC together shall be deemed to be a single party.

9. Subject to any other limitations imposed by the Agreement, the arbitrator shall have power to issue orders mandating compliance with the terms of the Agreement or enjoining violations of the Agreement. With respect to any arbitration brought to redress a claimed wholesale overpayment to the SFPUC, the arbitrator's power to award monetary relief

shall be limited to entering an order requiring that an adjustment be made in the amount posted to the balancing account for the fiscal year covered by the Demand.

10. All awards of the arbitrator shall be binding on the SFPUC and the Wholesale Customers regardless of the participation or lack thereof by any Wholesale Customer or the SFPUC as a party to the arbitration proceeding. The parties to an arbitration shall have the power to modify or amend any arbitration award by mutual consent. The arbitrator shall apply California law.

8.02 Attorneys' Fees

A. Arbitration or Litigation Between San Francisco and Wholesale Customers Arising under the Agreement or Individual Water Sales Contracts. Each party will bear its own costs, including attorneys' fees, incurred in any arbitration or litigation arising under this Agreement or the Individual Water Sales Contracts between San Francisco and the Wholesale Customers. Notwithstanding the foregoing, and subject to the limitations contained herein, the SFPUC may allocate to the Wholesale Customers as an allowable expense, utilizing the composite rate used for allocating other Water Enterprise administrative and general expenses, any attorneys' fees and costs incurred by the SFPUC in connection with arbitration and/or litigation arising under this Agreement and/or the Individual Water Sales Contracts. Attorneys' fees incurred by the SFPUC for attorneys employed in the San Francisco City Attorney's office shall be billed at the hourly rates charged for the attorneys in question by the San Francisco City Attorney's Office to the SFPUC. Attorneys' fees incurred by the SFPUC for attorneys other than those employed in the San Francisco City Attorney's Office shall be limited to the hourly rates charged to the SFPUC for attorneys and paralegals with comparable experience employed in the San Francisco City Attorney's office and in no event shall exceed the highest hourly rate charged by any attorney or paralegal employed in the City Attorney's Office to the SFPUC.

B. Arbitration or Litigation Outside of Agreement Concerning the SFPUC Water System or Reserved Issues

1. The attorneys' fees and costs incurred by the SFPUC in litigation between San Francisco and one or more of the Wholesale Customers arising from matters outside of the Agreement, including, without limitation, litigation and/or arbitration concerning the issues specifically reserved in the Agreement, shall be allocated between the Retail Customers and the

Wholesale Customers utilizing the composite rate used for allocating other Water Enterprise administrative and general expenses.

2. If, in any litigation described in subsection B.1 above, attorneys' fees and costs are awarded to one or more of the Wholesale Customers as prevailing parties, the SFPUC's payment of the Wholesale Customers' attorneys' fees and costs shall not be an allowable expense pursuant to subsection A.

3. If, in any litigation described in subsection B.1, the SFPUC obtains an award of attorneys' fees and costs as a prevailing party against one or more of the Wholesale Customers, any such award shall be reduced to offset the amount of the SFPUC's fees and costs, if any, that have already been paid by the Wholesale Customers in the current or any prior fiscal years pursuant to subsection B.1 and the provisions of Articles 5 and 6 of the Agreement.

4. Nothing contained in this Agreement, including this subsection, shall authorize a court to award attorneys' fees and costs to a prevailing party as a matter of contract and/or the provisions of Civil Code Section 1717, in litigation between San Francisco and one or more of the Wholesale Customers arising from matters outside of the Agreement, including, without limitation, litigation and/or arbitration concerning the issues specifically reserved in the Agreement.

C. Attorneys Fees and Costs Incurred by the SFPUC in Connection with the Operation and Maintenance of the SFPUC Water Supply System. All attorneys' fees and costs incurred by the SFPUC in connection with the operation and maintenance of the SFPUC's water supply system shall be allocated between Retail Customers and the Wholesale Customers utilizing the composite rate used for allocating other Water Enterprise administrative and general expenses.

8.03 Annual Meeting and Report

A. The parties wish to ensure that the Wholesale Customers may, in an orderly way, be informed of matters affecting the Regional Water System, including matters affecting the continuity and adequacy of their water supply from San Francisco.

For this purpose, the General Manager of the SFPUC shall meet annually with the Wholesale Customers and BAWSCA during the month of February, commencing

February 2010. At these annual meetings, the SFPUC shall provide the Wholesale Customers a report on the following topics:

1. Capital additions under construction or being planned for the Regional Water System, including the status of planning studies, financing plans, environmental reviews, permit applications, etc.;

2. Water use trends and projections for Retail Customers and Wholesale Customers;

3. Water supply conditions and projections;

4. The status of any administrative proceedings or litigation affecting San Francisco's water rights or the SFPUC's ability to deliver water from the watersheds which currently supply the Regional Water System;

5. Existing or anticipated problems with the maintenance and repair of the Regional Water System or with water quality;

6. Projections of Wholesale Revenue Requirements for the next five years;

7. Any other topic which the SFPUC General Manager places on the agenda for the meeting;

8. Any topic which the Wholesale Customers, through BAWSCA, request be placed on the agenda, provided that the SFPUC is notified of the request at least 10 days before the meeting.

B. The General Manager of the SFPUC, the Assistant General Manager of the Water Enterprise, and the Assistant General Manager of Business Services-CFO will use their best efforts to attend the annual meetings. If one or more of these officers are unable to attend, they will designate an appropriately informed assistant to attend in their place.

8.04 Administrative Matters Delegated to BAWSCA

A. The Wholesale Customers hereby delegate the authority and responsibility for performing the following administrative functions contemplated in this Agreement to BAWSCA:

1. Approval of calculations of Proportional Annual Water Use required by Section 3.14 and Attachment J, "Water Use Measurement and Tabulation";

2. Approval of amendments to Attachments J and K-3 and K-4, "25-Year Payoff Schedules for Existing Rate Base";

3. Agreement that the Water Meter and Calibration Procedures Manual to be prepared by the SFPUC may supersede some or all of the requirements in Attachment J, as described in Section 3.14;

4. Conduct of Wholesale Customer review of SFPUC's calculation of annual Wholesale Revenue Requirement/Change in Balancing Account described in Section 7.06;

5. Approval of an adjustment to Wholesale Revenue Coverage as described in Section 6.06.

B. A majority of the Wholesale Customers may, without amending this Agreement, delegate additional administrative functions to BAWSCA. To be effective, such expanded delegation must be evidenced by resolutions adopted by the governing bodies of a majority of the Wholesale Customers.

C. Unless otherwise explicitly stated, the administrative authority delegated to BAWSCA may be exercised by the General Manager/CEO of BAWSCA, rather than requiring action by the BAWSCA Board of Directors. In addition, the Wholesale Customers may, with the consent of BAWSCA, delegate to BAWSCA the initiation, defense, and settlement of arbitration proceedings provided for in Section 8.01.

8.05 Preservation of Water Rights; Notice of Water Rights Proceedings

A. It is the intention of San Francisco to preserve all of its water rights, irrespective of whether the water held under such water rights is allocated under this Agreement. Nothing in this Agreement shall be construed as an abandonment, or evidence of an intent to abandon, any of the water rights that San Francisco presently possesses.

B. San Francisco shall use its best efforts to give prompt notice to BAWSCA of any litigation or administrative proceedings to which San Francisco is a party involving water rights to the Regional Water System. The failure of San Francisco to provide notice as required by this section, for whatever reason, shall not give rise to any monetary liability.

8.06 SFPUC Rules and Regulations

The sale and delivery of all water under this Agreement shall be subject to such of the "Rules and Regulations Governing Water Service to Customers" of the Water Enterprise adopted by the Commission, as those rules and regulations may be amended from time to time, as are (1) applicable to the sale and delivery of water to the Wholesale Customers, (2) reasonable, and (3) not inconsistent with either this Agreement or with an Individual Water Sales Contract. The SFPUC will give the Wholesale Customers notice of any proposal to amend the Rules and Regulations in a manner that would affect the Wholesale Customers. The notice will be delivered at least thirty days in advance of the date on which the proposal is to be considered by the Commission and will be accompanied by the text of the proposed amendment.

8.07 Reservations of, and Limitations on, Claims

A. General Reservation of Raker Act Contentions. The 1984 Agreement resolved a civil action brought against San Francisco by certain of the Wholesale Customers. Plaintiffs in that action contended that they, and other Wholesale Customers that are municipalities or special districts, were "co-grantees" within the meaning of Section 8 of the Act and were entitled to certain rights, benefits and privileges by virtue of that status. San Francisco disputed those claims.

Nothing in this Agreement, or in the Individual Water Sales Contracts, shall be construed or interpreted in any way to affect the ultimate resolution of the controversy between the parties concerning whether any of the Wholesale Customers are "co-grantees" under the Act and, if so, what rights, benefits and privileges accrue to them by reason of that claimed status.

B. Claims Reserved but not Assertable During Term or Portions Thereof. The following claims, which San Francisco disputes, are reserved but may not be asserted during the Term (or portions thereof, as indicated):

1. The Wholesale Customers' claim that the Act entitles them to water at cost.

2. The Wholesale Customers' claim that San Francisco is obligated under the Act or state law to supply them with additional water in excess of the Supply Assurance. This claim may not be asserted unless and until San Francisco decides not to meet projected

water demands of Wholesale Customers in excess of the Supply Assurance pursuant to Section 4.06.

3. The claim by San Jose and Santa Clara that they are entitled under the Act, or any other federal or state law, to permanent, non-interruptible status and to be charged rates identical to those charged other Wholesale Customers. This claim may not be asserted unless and until San Francisco notifies San Jose or Santa Clara that it intends to interrupt or terminate water deliveries pursuant to Section 4.05.

4. The Wholesale Customers' claim that the SFPUC is not entitled to impose a surcharge for lost power generation revenues attributable to furnishing water in excess of the Supply Assurance. This claim may not be asserted unless and until SFPUC furnishes water in excess of the Supply Assurance during the Term and also includes such a surcharge in the price of such water.

5. Claims by Wholesale Customers (other than San Jose and Santa Clara, whose service areas are fixed) that SFPUC is obligated under the Act or state law to furnish water, within their Individual Supply Guarantee, for delivery to customers outside their existing service area and that Wholesale Customers are entitled to enlarge their service areas to supply those customers. Such claims may be asserted only after compliance with the procedure set forth in Section 3.03, followed by SFPUC's denial of, or failure for six months to act on, a written request by a Wholesale Customer to expand its service area.

C. **Waived Activities**. The Wholesale Customers (and the SFPUC, where specified) will refrain from the following activities during the Term (or portions thereof, as specified):

1. The Wholesale Customers and the SFPUC will not contend before any court, administrative agency or legislative body or committee that the methodology for determining the Wholesale Revenue Requirement (or the requirements for (a) amortization of the ending balance under the 1984 Agreement, or (b) contribution to the Wholesale Revenue Coverage) determined in accordance with this Agreement violates the Act or any other provision of federal law, state law, or San Francisco's City Charter, or is unfair, unreasonable or unlawful.

2. The Wholesale Customers will not challenge the transfer of funds by the SFPUC to any other San Francisco City department or fund, provided such transfer complies with the San Francisco City Charter. The transfer of its funds, whether or not permitted by the

City Charter, will not excuse the SFPUC from its failure to perform any obligation imposed by this Agreement.

3. The Wholesale Customers and the SFPUC will not assert monetary claims against one another based on the 1984 Agreement other than otherwise arbitrable claims arising from the three fiscal years immediately preceding the start of the Term (i.e., FYs 2006-07, 2007-08 and 2008-09). Such claims, if any, shall be governed by the dispute resolution provisions of this Agreement, except that the time within which arbitration must be commenced shall be 18 months from delivery of the Compliance Auditor's report.

D. Other

1. This Agreement shall determine the respective monetary rights and obligations of the parties with respect to water sold by the SFPUC to the Wholesale Customers during the Term. Such rights and obligations shall not be affected by any judgments or orders issued by any court in litigation, whether or not between parties hereto, and whether or not related to the controversy over co-grantee status, except for arbitration and/or litigation expressly permitted in this Agreement. No judicial or other resolution of issues reserved by this section will affect the Wholesale Revenue Requirement which, during the Term, will be determined exclusively as provided in Articles 5, 6 and 7 of this Agreement.

2. Because delays in the budget process or other events may cause the SFPUC to defer the effective date of changes in wholesale rates until after the beginning of the fiscal year, this Agreement does not require the SFPUC to make changes in wholesale rates effective at the start of the fiscal year or at any other specific date.

3. The Wholesale Customers do not, by executing this Agreement, concede the legality of the SFPUC's establishing Interim Supply Allocations, as provided in Article 4 or imposing Environmental Enhancement Surcharges on water use in excess of such allocations. Any Wholesale Customer may challenge such allocation when imposed and/or such surcharges if and when levied, in any court of competent jurisdiction.

4. The furnishing of water in excess of the Supply Assurance by San Francisco to the Wholesale Customers shall not be deemed or construed to be a waiver by San Francisco of its claim that it has no obligation under any provision of law to supply such water to the Wholesale Customers, nor shall it constitute a dedication by San Francisco to the Wholesale Customers of such water.

8.08 Prohibition of Assignment

A. This Agreement shall be binding on, and shall inure to the benefit of, the parties and their respective successors and permitted assigns. Each Wholesale Customer agrees that it will not transfer or assign any rights or privileges under this Agreement, either in whole or in part, or make any transfer of all or any part of its water system or allow the use thereof in any manner whereby any provision of this Agreement will not continue to be binding on it, its assignee or transferee, or such user of the system. Any assignment or transfer in violation of this covenant, and any assignment or transfer that would result in the supply of water in violation of the Act, shall be void.

B. Nothing in this section shall prevent any Wholesale Customer (except the California Water Service Company and Stanford) from entering into a joint powers agreement or a municipal or multi-party water district with any other Wholesale Customer (except the two listed above) to exercise the rights and obligations granted to and imposed upon the Wholesale Customers hereunder, nor shall this section prevent any Wholesale Customer (except the two listed above) from succeeding to the rights and obligations of another Wholesale Customer hereunder as long as the Wholesale Service Area served by the Wholesale Customers involved in the succession is not thereby enlarged.

8.09 Notices

A. All notices and other documents that San Francisco is required or permitted to send to the Wholesale Customers under this Agreement shall be sent to each and all of the Wholesale Customers by United States mail, first class postage prepaid, addressed to each Wholesale Customer at the address to which monthly water bills are mailed by the Water Enterprise.

B. All notices or other documents which the Wholesale Customers are required or permitted to send to San Francisco under this Agreement shall be sent by United States mail, first class postage prepaid, addressed as follows:

General Manager
San Francisco Public Utilities Commission
1155 Market Street, 11th Floor
San Francisco, CA 94103

C. Each Wholesale Customer is a member of BAWSCA. San Francisco shall send a copy of each notice or other document which it is required to send to all Wholesale Customers to BAWSCA addressed as follows:

General Manager/CEO
Bay Area Water Supply and Conservation Agency
155 Bovet Road, Suite 302
San Mateo, CA 94402

The failure of San Francisco to send a copy of such notices or documents to BAWSCA shall not invalidate any rate set or other action taken by San Francisco.

D. Any party (or BAWSCA) may change the address to which notice is to be sent to it under this Agreement by notice to San Francisco (in the case of a change desired by a Wholesale Customer or BAWSCA) and to the Wholesale Customer and BAWSCA (in the case of a change desired by San Francisco).

The requirements for notice set forth in Section 8.01 concerning arbitration shall prevail over this section, when they are applicable.

8.10 Incorporation of Attachments

Attachments A through Q, referred to herein, are incorporated in and made a part of this Agreement.

8.11 Interpretation

In interpreting this Agreement, or any provision thereof, it shall be deemed to have been drafted by all signatories, and no presumption pursuant to Civil Code Section 1654 may be invoked to determine the Agreement's meaning. The marginal headings and titles to the sections and paragraphs of this Agreement are not a part of this Agreement and shall have no effect upon the construction or interpretation of any part hereof.

8.12 Actions and Approvals by San Francisco

Whenever action or approval by San Francisco is required or contemplated by this Agreement, authority to act or approve shall be exercised by the Commission, except if such action is required by law to be taken, or approval required to be given, by the San Francisco Board of Supervisors. The Commission may delegate authority to the General Manager in

accordance with the San Francisco City Charter and Administrative Code, except for actions that this Agreement requires to be taken by the Commission.

8.13 Counterparts

Execution of this Agreement may be accomplished by execution of separate counterparts by each signatory. San Francisco shall deliver its executed counterpart to BAWSCA and the counterpart which each Wholesale Customer executes shall be delivered to San Francisco. The separate executed counterparts, taken together, shall constitute a single agreement.

8.14 Limitations on Damages

A. Unless otherwise prohibited by this Agreement, general or direct damages may be recovered for a breach of a party's obligations under this Agreement. No party is liable for, or may recover from any other party, special, indirect or consequential damages or incidental damages, including, but not limited to, lost profits or revenue. No damages may be awarded for a breach of Section 8.17.

B. The limitations in subsection A apply only to claims for damages for an alleged breach of this Agreement. These limitations do not apply to claims for damages for an alleged breach of a legal duty that arises independently of this Agreement, established by constitution or statute.

C. If damages would be an inadequate remedy for a breach of this Agreement, equitable relief may be awarded by a court in a case in which it is otherwise proper.

D. This section does not apply to any claim of breach for which arbitration is the exclusive remedy pursuant to Section 8.01.A.

8.15 Force Majeure

A. Excuse from Performance. No party shall be liable in damages to any other party for delay in performance of, or failure to perform, its obligations under this Agreement, including the obligations set forth in Sections 3.09 and 4.06, if such delay or failure is caused by a "Force Majeure Event."

B. Notice. The party claiming excuse shall deliver to the other parties a written notice of intent to claim excuse from performance under this Agreement by reason of a Force

Majeure Event. Notice required by this section shall be given promptly in light of the circumstances, and, in the case of events described in (c), (d) or (e) of the definition of Force Majeure Event only, not later than ten (10) days after the occurrence of the Force Majeure Event. Such notice shall describe the Force Majeure Event, the services impacted by the claimed event, the length of time that the party expects to be prevented from performing, and the steps which the party intends to take to restore its ability to perform.

C. Obligation to Restore Ability to Perform. Any suspension of performance by a party pursuant to this section shall be only to the extent, and for a period of no longer duration than, required by the nature of the Force Majeure Event, and the party claiming excuse shall use its best efforts to remedy its inability to perform as quickly as possible.

8.16 No Third-Party Beneficiaries

This Agreement is exclusively for the benefit of the parties and not for the benefit of any other Person. There are no third-party beneficiaries of this Agreement and no person not a party shall have any rights under or interests in this Agreement.

No party may assert a claim for damages on behalf of a person other than itself, including a person that is not a party.

8.17 Good Faith and Fair Dealing

San Francisco and the Wholesale Customers each acknowledge their obligation under California law to act in good faith toward, and deal fairly with, each other with respect to this Agreement.

Article 9. Implementation and Special Provisions Affecting Certain Wholesale Customers

9.01 General; Individual Water Sales Contracts

A. As described in Section 1.03, San Francisco previously entered into Individual Water Sales Contracts with each of the Wholesale Customers. The term of the majority of Individual Water Sales Contracts will expire on June 30, 2009, concurrently with the expiration of the 1984 Agreement. Except as provided below in this Article, each of the Wholesale Customers will execute a new Individual Water Sales Contract with San Francisco concurrently with its approval of the Agreement.

B. The Individual Water Sales Contracts will describe the service area of each Wholesale Customer, identify the location and size of connections between the Regional Water System and the Wholesale Customer's distribution system, provide for periodic rendering and payment of bills for water usage, and in some instances contain additional specialized provisions unique to the particular Wholesale Customer and not of general concern or applicability. A sample Individual Water Sales Contract is provided at Attachment F. The Individual Water Sales Contracts between San Francisco and the Wholesale Customers will not contain any provision inconsistent with Articles 1 through 8 of this Agreement except (1) as provided below in this Article or (2) to the extent that such provisions are not in derogation of the Fundamental Rights of other Wholesale Customers under this Agreement. Any provisions in an Individual Water Sales Contract which are in violation of this section shall be void.

9.02 California Water Service Company

A. The parties recognize that the California Water Service Company is an investor-owned utility company and, as such, has no claim to co-grantee status under the Act, which specifically bars private parties from receiving for resale any water produced by the Hetch Hetchy portion of the Regional Water System. Accordingly, the following provisions shall apply to the California Water Service Company, notwithstanding anything to the contrary elsewhere in this Agreement.

B. The total quantity of water delivered by San Francisco to the California Water Service Company shall not in any calendar year exceed 47,400 acre feet, which is the estimated average annual production of Local System Water. If San Francisco develops additional Local System Water after the Effective Date, it may (1) increase the maximum

delivery amount stated herein; and (2) increase the Supply Assurance, but not necessarily both. San Francisco has no obligation to deliver water to California Water Service Company in excess of the maximum stated herein, except as such maximum may be increased by San Francisco pursuant to this subsection. The maximum annual quantity of Local System Water set forth in this subsection is intended to be a limitation on the total quantity of water that may be allocated to California Water Service Company, and is not an Individual Supply Guarantee for purposes of Section 3.02. The maximum quantity of Local System Water set forth in this subsection is subject to reduction in response to (1) changes in long-term hydrology or (2) environmental water requirements that may be imposed by or negotiated with state and federal resource agencies in order to comply with state or federal law or to secure applicable permits for construction of Regional Water System facilities. San Francisco shall notify California Water Service Company of any anticipated reduction of the quantity of Local System Water set forth in this subsection, along with an explanation of the basis for the reduction.

C. Notwithstanding anything in Section 8.08 to the contrary, California Water Service Company shall have the right to assign to a public agency having the power of eminent domain all or a portion of the rights of California Water Service Company under any contract between it and San Francisco applicable to any individual district of California Water Service Company in connection with the acquisition by such public agency of all or a portion of the water system of California Water Service Company in such district. In the event of any such assignment of all the rights, privileges and obligations of California Water Service Company under such contract, California Water Service Company shall be relieved of all further obligations under such contract provided that the assignee public agency expressly assumes the obligations of California Water Service Company thereunder. In the event of such an assignment of a portion of the rights, privileges and obligations of California Water Service Company under such contract, California Water Service Company shall be relieved of such portion of such obligations so assigned thereunder provided that the assignee public agency shall expressly assume such obligations so assigned to it.

D. Should California Water Service Company seek to take over or otherwise acquire, in whole or in part, the service obligations of another Wholesale Customer under Section 3.03.E, it will so inform San Francisco at least six months prior to the effective date of the sale and provide information concerning the total additional demand proposed to be served, in order that San Francisco may compare the proposed additional demand to the then-current estimate of Local System Water. In this regard, California Water Service Company has notified

the SFPUC that it has reached an agreement to acquire the assets of Skyline County Water District ("Skyline") and assume the responsibility for providing water service to customers in the Skyline service area. California Water Service Company has advised the SFPUC that, on September 18, 2008, the California Public Utilities Commission approved California Water Service Company's acquisition of Skyline. The SFPUC anticipates approving the transfer of Skyline's Supply Guarantee as shown on Attachment C to California Water Service Company and the expansion of California Water Service Company's service area to include the current Skyline service area before the Effective Date of this Agreement. All parties to this Agreement authorize corresponding modifications of Attachment C, as well as any of the Agreement's other provisions, to reflect the foregoing transaction without the necessity of amending this Agreement.

E. Nothing in this Agreement shall preclude San Francisco from selling water to any county, city, town, district, political subdivision, or other public agency for resale to customers within the service area of the California Water Service Company. Nothing in this Agreement shall require or contemplate any delivery of water to California Water Service Company in violation of the Act.

F. Nothing in this Agreement shall alter, amend or modify the Findings of Fact and Conclusions of Law and the Judgment dated May 25, 1961, in that certain action entitled *City and County of San Francisco v. California Water Service Company* in the Superior Court of the State of California in and for the County of Marin, No. 23286, as modified by the Quitclaim Deed from California Water Service Company to San Francisco dated August 22, 1961. The rights and obligations of San Francisco and California Water Service Company under these documents shall continue as therein set forth.

9.03 <u>City of Hayward</u>

A. San Francisco and the City of Hayward ("Hayward") entered into a water supply contract on February 9, 1962 ("the 1962 contract") which provides, *inter alia*, that San Francisco will supply Hayward with all water supplemental to sources and supplies of water owned or controlled by Hayward as of that date, in sufficient quantity to supply the total water needs of the service area described on an exhibit to the 1962 contract "on a permanent basis." The service area map attached as Exhibit C to the 1962 contract was amended in 1974 to remove an area of land in the Hayward hills and in 2008 to make minor boundary adjustments identified in SFPUC Resolution No. 08-0035.

B. The intention of the parties is to continue the 1962 contract, as amended, in effect as the Individual Water Sales Contract between San Francisco and Hayward. Accordingly, it shall not be necessary for San Francisco and Hayward to enter into a new Individual Water Sales Contract pursuant to this Article and approval of this Agreement by Hayward shall constitute approval of both this Agreement and an Individual Water Sales Contract for purposes of Section 1.03. The 1962 contract, as amended, will continue to describe the service area of Hayward, while rates for water delivered to Hayward during the Term shall be governed by Article 5 hereof. The 1962 contract, as amended, will continue in force after the expiration of the Term.

9.04 Estero Municipal Improvement District

A. San Francisco and the Estero Municipal Improvement District ("Estero") entered into a water supply contract on August 24, 1961, the term of which continues until August 24, 2011 ("the 1961 Contract"). The 1961 Contract provides, *inter alia*, that San Francisco will supply Estero with all water supplemental to sources and supplies of water owned or controlled by Estero as of that date, in sufficient quantity to supply the total water needs of the service area described on an exhibit to the 1961 Contract.

B. The intention of the parties is to terminate the 1961 Contract and replace it with a new Individual Water Sales Contract which will become effective on July 1, 2009. The new Individual Water Sales Contract will describe the current service area of Estero. The Individual Supply Guarantee applicable to Estero shall be 5.9 MGD, rather than being determined as provided in the 1961 Contract.

9.05 Stanford University

A. The parties recognize that The Board of Trustees of The Leland Stanford Junior University ("Stanford") operates a non-profit university, and purchases water from San Francisco for redistribution to the academic and related facilities and activities of the university and to residents of Stanford, the majority of whom are either employed by or students of Stanford. Stanford agrees that all water furnished by San Francisco shall be used by Stanford only for domestic purposes and those directly connected with the academic and related facilities and activities of Stanford, and no water furnished by San Francisco shall be used in any area now or hereafter leased or otherwise used for industrial purposes or for commercial purposes other than those campus support facilities that provide direct services to Stanford faculty, students or staff such as the U.S. Post Office, the bookstore and Student Union.

Nothing in this Agreement shall preclude San Francisco from selling water to any county, city, town, political subdivision or other public agency for resale to Stanford or to customers within the service area of Stanford.

B. Notwithstanding anything in Section 8.08 to the contrary, Stanford shall have the right to assign to a public agency having the power of eminent domain all or a portion of the rights of Stanford under this Agreement or the Individual Water Sales Contract between it and San Francisco in connection with the acquisition by such public agency of all or a portion of Stanford's water system. In the event of any such assignment of all the rights, privileges, and obligations of Stanford under such contract, Stanford shall be relieved of all further obligations under such contract, provided that the assignee public agency expressly assumes Stanford's obligations thereunder. In the event of such an assignment of a portion of the rights, privileges, and obligations of Stanford under such contract, Stanford shall be relieved of such obligations so assigned thereunder, provided that the assignee public agency shall expressly assume such obligations so assigned to it.

Nothing in this Agreement shall require or contemplate any delivery of water to Stanford in violation of the Act.

9.06 City of San Jose and City of Santa Clara

A. Continued Supply on Temporary, Interruptible Basis. During the term of the 1984 Agreement, San Francisco provided water to the City of San Jose ("San Jose") and the City of Santa Clara ("Santa Clara") on a temporary, interruptible basis pursuant to SFPUC Resolution No. 85-0256. Subject to termination or reduction of supply as provided in Section 4.05 of this Agreement, San Francisco will continue to supply water to San Jose and Santa Clara on a temporary, interruptible basis pending a decision by the Commission, pursuant to Section 4.05.H, as to whether to make San Jose and Santa Clara permanent customers of the Regional Water System. San Francisco will furnish water to San Jose and Santa Clara at the same rates as those applicable to other Wholesale Customers pursuant to this Agreement. Water delivered to San Jose and Santa Clara after July 1, 2009 may be limited by the SFPUC's ability to meet the full needs of all its other Retail and Wholesale Customers. The service areas of San Jose and Santa Clara set forth in their Individual Water Sales Contracts may not be expanded using the procedure set forth in Section 3.03. The combined annual average water usage of San Jose and Santa Clara shall not exceed 9 MGD. The allocation of that total

amount between San Jose and Santa Clara shall be as set forth in their Individual Water Sales Contracts.

B. Reservation of Rights. In signing this Agreement, neither San Jose nor Santa Clara waives any of its rights to contend, in the event that San Francisco (1) elects to terminate or interrupt water deliveries to either or both of the two cities prior to 2018 using the process set forth in Section 4.05, or (2) does not elect to take either city on as a permanent customer in 2018, that it is entitled to permanent customer status, pursuant to the Act or any other federal or state law. In signing this Agreement, San Francisco does not waive its right to deny any or all such contentions.

9.07 City of Brisbane, Guadalupe Valley Municipal Improvement District, Town of Hillsborough

A. The parties acknowledge that San Francisco has heretofore provided certain quantities of water to the City of Brisbane ("Brisbane"), Guadalupe Valley Municipal Improvement District ("Guadalupe") and the Town of Hillsborough ("Hillsborough") at specified rates or without charge pursuant to obligations arising out of agreements between the predecessors of San Francisco and these parties, which agreements are referred to in judicial orders, resolutions of the SFPUC and/or the 1960 contracts between San Francisco and Brisbane, Guadalupe and Hillsborough. The parties intend to continue those arrangements and accordingly agree as follows:

1. Nothing in this Agreement is intended to alter, amend or modify the terms of SFPUC Resolution No. 74-0653 or the indenture of July 18, 1908 between the Guadalupe Development Company and the Spring Valley Water Company.

2. Nothing in this Agreement is intended to alter, amend or modify the Findings of Fact and Conclusions of Law and Judgment dated May 25, 1961 in that certain action entitled *City and County of San Francisco v. Town of Hillsborough* in the Superior Court of the State of California in and for the County of Marin, No. 23282, as modified by the Satisfaction of Judgment filed October 23, 1961 and the Compromise and Release between Hillsborough and San Francisco dated August 22, 1961. The rights and obligations of Hillsborough under these documents shall continue as therein set forth.

3. Nothing in this Agreement is intended to affect or prejudice any claims, rights or remedies of Guadalupe or of Crocker Estate Company, a corporation, or of Crocker

Land Company, a corporation, or of San Francisco, or of their successors and assigns, respectively, with respect to or arising out of that certain deed dated May 22, 1884, from Charles Crocker to Spring Valley Water Works, a corporation, recorded on May 24, 1884, in Book 37 of Deeds at page 356, Records of San Mateo County, California, as amended by that certain Deed of Exchange of Easements in Real Property and Agreement for Trade in Connection Therewith, dated July 29, 1954, recorded on August 4, 1954, in Book 2628, at page 298, Official Records of said San Mateo County, or with respect to or arising out of that certain action involving the validity or enforceability of certain provisions of said deed entitled *City and County of San Francisco v. Crocker Estate Company*, in the Superior Court of the State of California in and for the County of Marin, No. 23281.

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IN WITNESS WHEREOF the parties have executed this Agreement by their duly authorized officers.

CITY AND COUNTY OF SAN FRANCISCO
Acting by and through its Public Utilities Commission

By:_____
Edward Harrington
General Manager

Date: _____, 2009

Approved by Commission Resolution No. 09-0069,
adopted April 28, 2009

_____
Michael Housh
Secretary to Commission

Approved as to form:

DENNIS J. HERRERA
City Attorney

By:_____
Joshua D. Milstein
Deputy City Attorney

Attachment A - Definitions

"1984 Agreement" refers to the 1984 Settlement Agreement and Master Water Sales Contract between the City and County of San Francisco and certain Suburban Purchasers in San Mateo County, Santa Clara County and Alameda County, which expires on June 30, 2009.

"Act" refers to the Raker Act, 38 Stat. 242, the Act of Congress, enacted in 1913, that authorized the construction of the Hetch Hetchy system on federal lands.

"Adjusted Proportional Annual Use" means the respective percentages of annual water use, as adjusted to reflect deliveries of water by the Hetch Hetchy Enterprise to outside City Retail Customers. The adjustment is calculated each year as described in Section B of Attachment J and is shown on lines 18 and 19 of Table 1 of that Attachment.

"Agreement" refers to this Water Supply Agreement, by and among San Francisco and the Wholesale Customers who approve this Agreement in accordance with Section 1.03.

"BAWSCA" refers to the Bay Area Water Supply and Conservation Agency established pursuant to Division 31 of the California Water Code (Water Code §§81300-81461) or its successor and permitted assigns.

"CEQA" refers to the California Environmental Quality Act found at §§21000 et seq. of the Public Resources Code and the Guidelines for the California Environmental Quality Act found at §§15000 et seq. of Title 14 of the California Code of Regulations, as amended from time to time.

"Commission" means the governing board of the SFPUC, whose members, as of the date of this Agreement, are appointed by the Mayor of San Francisco and confirmed by the San Francisco Board of Supervisors.

"Compliance Audit" refers to the annual audit of the Wholesale Revenue Requirement by the Compliance Auditor required by Sections 7.03 through 7.05.

"Compliance Auditor" refers to the independent certified public accountant chosen by the San Francisco Controller to conduct each fiscal year's audit of the SFPUC's calculation of the Wholesale Revenue Requirement as provided in Section 7.03.B.

“Countywide Cost Allocation Plan” refers to the full costs of the Water and Hetch Hetchy Enterprises’ prorated share of San Francisco city government expenses that are not directly billed to city departments, as determined by the Controller of the City and County of San Francisco.

“Debt Service” means principal and interest paid during a fiscal year on Indebtedness incurred by the SFPUC for the 2006 Revenue Bonds, Series A, and subsequently issued Indebtedness (exclusive of 2006 Revenue Bonds Series B and C), the proceeds of which are used or are scheduled to be used for the acquisition or construction of New Regional Assets or to refund such Indebtedness.

“Direct Retail” refers to Regional Water System capital or operating expenditures that are incurred to provide water service solely to Retail Customers.

“Direct Wholesale” refers to Regional Water System capital or operating expenditures that are incurred to provide water service solely to one or more Wholesale Customers.

“Drought” means a water shortage caused by lack of precipitation, as reflected in resolutions of the Commission calling for voluntary or mandatory water rationing based on evaluation of water stored or otherwise available to the Regional Water System, whether or not the Commission declares a water shortage emergency pursuant to Water Code §§ 350 et seq., as amended from time to time.

“Effective Date” refers to the date this Agreement will become effective in accordance with the terms of Section 1.03.

“Emergency” means a sudden, non-drought event, such as an earthquake, failure of Regional Water System infrastructure or other catastrophic event or natural disaster that results in an insufficient supply of water available to the Retail or Wholesale Service Areas for basic human consumption, firefighting, sanitation, and fire protection.

“Encumbrance” or **“Encumber”** refers to the process by which the City Controller certifies the availability of amounts previously appropriated by the Commission for specifically identified SFPUC capital projects performed either by third parties or through work orders to other City departments.

“Environmental Enhancement Surcharge” means the surcharge to be imposed by the SFPUC on individual parties to this Agreement whose use exceeds their Interim Supply Allocation when the collective use of water by all parties to this Agreement is in excess of the Interim Supply Limitation.

“ERRP” refers to a SFPUC document entitled *Emergency Response and Recovery Plan: Regional Water System* (“ERRP”) dated August 23, 2003, and updated November 2006.

“Excess Use Charges” are monthly charges set by the SFPUC, in the form of multipliers, that are applied to the Wholesale Customer water rates during times of mandatory rationing if a Wholesale Customer's water usage is greater than its shortage allocation. Excess Use Charges are further described in Section 4 of the Tier 1 Shortage Plan (Attachment H).

“Existing Assets” refers to Regional and Hetch Hetchy Water-Only and Water-Related capital assets plant in service as of June 30, 2009.

“Force Majeure Event” means an event not the fault of, and beyond the reasonable control of, the party claiming excuse which makes it impossible or extremely impracticable for such party to perform obligations imposed on it by this Agreement, by virtue of its effect on physical facilities and their operation or employees essential to such performance. Force Majeure Events include (a) an “act of God” such as an earthquake, flood, earth movement, or similar catastrophic event, (b) an act of the public enemy, terrorism, sabotage, civil disturbance or similar event, (c) a strike, work stoppage, picketing or similar concerted labor action, (d) delays in construction caused by unanticipated negligence or breach of contract by a third party or inability to obtain essential materials after diligent and timely efforts; or (e) an order or regulation issued by a federal or state regulatory agency after the Effective Date or a judgment or order entered by a federal or state court after the Effective Date.

“Fundamental Rights” of Wholesale Customers are their status as parties to this Agreement, their allocation of water recognized in Section 3.02, their protection against arbitrary, unreasonable, or unjustly discriminatory rates provided in Section 6.04, and any specific rights described in Article 9.

“Hetch Hetchy Enterprise” refers to Hetch Hetchy Water and Power Enterprise, a SFPUC operating department.

“Include” and its variants mean “including but not limited to” whenever used in this Agreement, regardless of whether or not it is capitalized.

“Indebtedness” includes revenue bonds, bond anticipation notes, certificates of participation (excluding certificates of participation towards which SFPUC contributes debt service as an operating expense), and commercial paper.

“Individual Water Sales Contract” refers to the contracts between each Wholesale Customer and San Francisco contemplated in Section 9.01 that details customer-specific matters such as location of service connections, service area maps and other matters specific to that customer.

“Individual Supply Guarantee” refers to each Wholesale Customer’s share of the Supply Assurance, as shown in Attachment C.

“Interim Supply Allocation” refers to each Wholesale Customer’s share, to be established by the SFPUC pursuant to Section 4.02, of the Interim Supply Limitation.

“Interim Supply Limitation” refers to the 265 MGD annual average limitation on water deliveries until December 31, 2018 from Regional Water System watersheds imposed by the SFPUC in its approval of the WSIP in Resolution Number 08-0200 dated October 30, 2008.

“Joint,” when used in connection with Hetch Hetchy Enterprise assets or expenses, refers to assets used or expenses incurred in providing both water supply (“Water-Related”) and in the generation and transmission of electrical energy (“Power-Related”).

“Local System Water” refers to Regional Water System water supplies developed in San Mateo, Alameda and Santa Clara Counties or otherwise not produced by the Hetch Hetchy Enterprise under rights of way granted by the Raker Act.

“MGD” refers to an average flow rate of one million gallons per day over a specific time period, often a year. For example, one MGD is equal to 365 million gallons per year or 1,120 acre feet per year.

“Net Annual Debt Service” refers to debt service less payments made from proceeds of Indebtedness (e.g., capitalized interest), earnings on bond proceeds (e.g., reserve fund earnings) used to pay Debt Service, and interest paid from renewed commercial paper, or from reserve fund liquidation.

"New Assets" refers to Regional and Hetch Hetchy Water-Only and Water-Related capital assets added to Regional Water System plant in service after June 30, 2009.

"New Regional Assets" refers to New Assets placed in service on or after July 1, 2009 that are used and useful in delivering water to Wholesale Customers. The following four categories comprise New Regional Assets:

1. Water Enterprise Regional Assets
2. Water Enterprise Direct Wholesale Assets
3. Hetch Hetchy Water Only Assets
4. Water-Related portion (45 percent) of Hetch Hetchy Joint Assets

"Power-Only," when used with reference to Hetch Hetchy Enterprise capital costs and operating and maintenance expenses, means capital costs and expenses that are incurred solely for the construction and operation of assets used to generate and transmit electrical energy.

"Power-Related" refers to the power related portion (55%) of Joint Hetch Hetchy Enterprise assets or expenses.

"Prepayment" refers to payments of principal and interest amounts not due in the year the prepayment is made, as described in Section 5.03.

"Proportional Annual Use" means the shares of deliveries from the Regional Water System used by City Retail Customers and by the Wholesale Customers in a fiscal year, expressed as a percentage. The percentages of annual use are calculated each year as described in Section B of Attachment J and are shown on lines 10 and 11 of Table 1 of that Attachment.

"Proportional Water Use" refers the general principle of allocating Regional Water System costs based on the relative purchases of water by Retail and Wholesale Customers.

"Regional," when used with reference to Water Enterprise capital assets and operating expenses, refers to assets and expenses that benefit Wholesale and Regional Customers.

"Regional Water System" means the water storage, transmission and treatment system operated by the SFPUC in Tuolumne, Stanislaus, San Joaquin, Alameda, Santa Clara, San Mateo and San Francisco counties, including projects constructed under the WSIP, but excluding Direct Retail and Direct Wholesale assets.

"Retail Customers" means any customer that purchases water from San Francisco that is not a Wholesale Customer, whether located inside or outside of San Francisco.

"Retail Service Area" means the areas where SFPUC sells water to Retail Customers.

"Retail Water" means water sold by the SFPUC to its Retail Customers within and outside San Francisco.

"San Francisco" refers to the City and County of San Francisco.

"SFPUC" refers to the San Francisco Public Utilities Commission as an operating department of San Francisco, the General Manager of which reports to the Commission.

"SFPUC Bureaus" refers to the portions of the SFPUC that provide support services to the SFPUC Operating Departments. These presently consist of the General Manager's Office, Business Services, and External Affairs.

"SFPUC Operating Departments" refers to the Water, Hetch Hetchy and Wastewater Program Enterprises under the control and management of the SFPUC pursuant to the San Francisco Charter.

"Substantially Expended": A bond issue series is substantially expended when 98% of the proceeds and investment earnings contributed to the project fund have been expended.

"Supply Assurance" means the 184 MGD maximum annual average metered supply of water dedicated by San Francisco to public use in the Wholesale Service Area (not including San Jose and Santa Clara) in the 1984 Agreement and Section 3.01 of this Agreement.

"Term" means the 25-year term commencing July 1, 2009, including one or both 5-year extensions authorized by Section 2.02.A and B.

"Tier 1 Shortage Plan" refers to the Water Shortage Allocation Plan (Attachment H) adopted by the SFPUC and the Wholesale Customers in conjunction with this Agreement describing the method for allocating water between the SFPUC and the Wholesale Customers collectively for shortages of up to 20% of deliveries from the Regional Water System, as amended from time-to-time.

“Water Enterprise” refers to the San Francisco Water Department (SFWD), an SFPUC Operating Department.

“Water Management Charge” refers to the charge collected by San Francisco on behalf of BAWSCA for local water resource development in the Wholesale Service Area pursuant to Section 3.06 of this Agreement.

“Water-Only,” when used with reference to Hetch Hetchy Enterprise capital costs and operating and maintenance expenses, means capital costs and expenses that are incurred solely for the construction and operation of assets used to protect water quality or to provide for the delivery of water for consumptive purposes.

“Water-Related” refers to the water related portion (45%) of Joint Hetch Hetchy Enterprise assets or expenses.

“Water Supply Development Report” refers to the annual report prepared pursuant to Section 4.05, and submitted to the Commission for purposes of estimating whether Regional Water System demand will be within the Interim Supply Limitation by June 30, 2018.

“Wheeling Statute” refers to Article 4 of Chapter 11 of the California Water Code, as amended from time to time.

“Wholesale Capital Fund” is the account established by the SFPUC for deposit of Wholesale Customer revenue that is used to fund the wholesale share of revenue-funded New Regional Assets, as described in Section 6.08.

“Wholesale Customer” or “Customers” means one or more of the 27 water customers identified in Section 1.01 that are contracting for purchase of water from San Francisco pursuant to this Agreement.

“Wholesale Revenue Coverage” refers to the additional dollar amount included in wholesale rates each fiscal year that is charged to Wholesale Customers by the SFPUC for their proportionate share of Debt Service coverage under Section 6.06.A.

“Wholesale Revenue Coverage Reserve” refers to the account established by the SFPUC for deposit of Wholesale Revenue Coverage under Section 6.06.B.

“Wholesale Revenue Requirement” means the calculated Wholesale Customer portion of SFPUC Regional Water System capital and operating costs as determined in accordance with the provisions of Article 5 of this Agreement, formerly called the “Suburban Revenue Requirement” in the 1984 Agreement.

“Wholesale Service Area” means the combined service areas of the Wholesale Customers, as delineated on the service area maps attached to each Individual Water Sales Contract.

“WSIP” refers to the Water System Improvement Program approved by the Commission in Resolution No. 08-0200 on October 30, 2008, as amended from time to time.

ATTACHMENT B

WHOLESALE CUSTOMER REGIONAL WATER SYSTEM PURCHASES FY 2007-2008*

(To determine 75% approval process for Section 1.02)

WHOLESALE CUSTOMER	*MGD*
Alameda County Water District	12.90
California Water Service Company	37.72
City of Brisbane	0.23
City of Burlingame	4.50
City of Daly City	4.49
City of East Palo Alto	2.16
City of Hayward	19.33
City of Menlo Park	3.69
City of Millbrae	2.46
City of Milpitas	6.95
City of Mountain View	10.51
City of Palo Alto	12.72
City of Redwood City	11.01
City of San Bruno	1.86
City of San Jose	4.80
City of Santa Clara	3.49
City of Sunnyvale	10.52
Coastside County Water District	2.08
Estero Municipal Improvement District	5.51
Guadalupe Valley Municipal Improvement District	0.40
Mid-Peninsula Water District	3.25
North Coast County Water District	3.25
Purissima Hills Water District	2.31
Skyline County Water District	0.16
Stanford University	2.31
Town of Hillsborough	3.83
Westborough Water District	0.95
Total	173.39

*Source: SFPUC Commercial Division Records
Note: FY 2007-2008 was a Leap Year with 366 days.

ATTACHMENT C

INDIVIDUAL SUPPLY GUARANTEES

	(1)	(2)
WHOLESALE CUSTOMER	***100 Cubic Feet ****	***MGD***
Alameda County Water District	6,714,439	13.760
California Water Service Company**	17,320,807	35.499
City of Brisbane	224,435	0.460
City of Burlingame	2,553,753	5.234
City of Daly City	2,094,386	4.292
City of East Palo Alto	957,813	1.963
City of Menlo Park	2,174,231	4.456
City of Millbrae	1,538,120	3.152
City of Milpitas	4,504,533	9.232
City of Mountain View	6,567,648	13.460
City of Palo Alto	8,331,697	17.075
City of Redwood City	5,333,115	10.930
City of San Bruno	1,583,899	3.246
City of Sunnyvale	6,138,122	12.580
Coastside County Water District	1,061,453	2.175
Estero Municipal Improvement District	2,878,807	5.900
Guadalupe Valley Municipal Improvement District	254,436	0.521
Mid-Peninsula Water District	1,898,707	3.891
North Coast County Water District	1,872,928	3.838
Purissima Hills Water District	792,832	1.625
Skyline County Water District	88,537	0.181
Stanford University	1,479,764	3.033
Town of Hillsborough	1,995,644	4.090
Westborough Water District	644,172	1.320
Total:***	79,004,278	161.913

* 100 Cubic feet equals MGD divided by 0.00000204946. Figures in this column are calculated using unrounded MGD values and are more precise than the figures listed in column (2).

** Includes quantities from Los Trancos County Water District and Palomar Park Water District.

*** Total does not equal sum of MGD figures due to rounding. Total is not 184 MGD because table does not include the City of Hayward.

**** Cordilleras Mutual Water Association is not a party to this Agreement, but it has its own Supply Assurance of 3,007 hundred cubic feet (CCF).

ATTACHMENT D

PROCEDURE FOR PRO-RATA REDUCTION OF WHOLESALE CUSTOMERS' INDIVIDUAL SUPPLY GUARANTEES (SECTION 3.02).

The 23 wholesale customers listed on Attachment C have individual Supply Guarantees that total approximately 161.9 MGD.

If the amount of water purchased from SFPUC by Hayward exceeds 22.1 MGD for three consecutive fiscal years, the individual Supply Guarantees of each of those 23 wholesale customers will be reduced as described below.

STEP ONE:

Obtain the average annual excess purchases during the three fiscal year period. For example, assume Hayward uses 25.0 MGD, 24.2 MGD and 26.0 MGD in three consecutive years. The average annual excess use for that period is 2.9 MGD; calculated as follows:

$$\frac{[25.0 \text{ MGD} + 24.2 \text{ MGD} + 26.0 \text{ MGD}]}{3} + 161.9 \text{ MGD} = 186.9 \text{ MGD}$$

$$186.9 \text{ MGD} - 184.0 \text{ MGD} = 2.9 \text{ MGD}$$

STEP TWO:

Allocate the excess purchases among the 23 Wholesale Customers in proportion to each customer's Supply Guarantee as a percentage of the total Supply Guarantees (161.9 MGD as of FY 2009-10).

For example, assume that Wholesale Customer A's Supply Guarantee is 12.0 MGD. Wholesale Customer A's percentage share of the total individual supply guarantees is 0.074, calculated as follows:

$$\frac{12.0 \text{ MGD}}{161.9 \text{ MGD}} = 0.074$$

and its share of the excess use is 0.22 MGD, calculated as follows:

$2.9 \text{ MGD} \times 0.074 = 0.22 \text{ MGD}$

STEP THREE:

Determine Wholesale Customer's adjusted Supply Guarantee by subtracting the result of Step Two from the Wholesale Customer's Supply Guarantee:

12 MGD - 0.22 MGD = 11.78 MGD

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Adjustments will be made at intervals comprised of distinct three-year periods of use by Hayward in excess of 22.1 MGD rather than overlapping periods. For example, assuming that the first adjustment were to occur in FY 2014-15 (based on use during FY 2011-12, FY 2012-13 and FY 2013-14), a second adjustment will not occur earlier than three full fiscal years thereafter (i.e., FY 2017-18, based on use by Hayward in FY 2014-15, FY 2015-16 and FY 2016-17). The figures used in the second and subsequent adjustments will reflect previous adjustments. For example, a second adjustment will use 158.9 MGD as the total of individual Supply Guarantees (161.6 MGD - 2.7 MGD = 158.9 MGD).

For purposes of simplicity, the volumetric units used in the foregoing example are MGD. For actual adjustment calculations, the unit employed will be hundreds of cubic feet ("ccf"), the unit by which the SFPUC measures water deliveries for billing purposes.

The procedure described and illustrated above is independent of and unrelated to the establishment by the SFPUC of Interim Supply Limitations described in Article 4.

ATTACHMENT E

MINIMUM ANNUAL PURCHASE QUANTITIES

(Section 3.07.C)

AGENCY	MINIMUM ANNUAL PURCHASE QUANTITY (IN MGD)
Alameda County Water District	7.648
City of Milpitas	5.341
City of Mountain View	8.930
City of Sunnyvale	8.930

ATTACHMENT F

WATER SALES CONTRACT

This Contract, dated as of _____, 2009, is entered into by and between the City and County of San Francisco ("San Francisco") and

_____

_____ ("Customer").

RECITALS

San Francisco and the Customer have entered into a Water Supply Agreement ("WSA"), which sets forth the terms and conditions under which San Francisco will continue to furnish water for domestic and other municipal purposes to Customer and to other Wholesale Customers. The WSA contemplates that San Francisco and each individual Wholesale Customer will enter into an individual contract describing the location or locations at which water will be delivered to each customer by the San Francisco Public Utilities Commission ("SFPUC"), the customer's service area within which water so delivered is to be sold, and other provisions unique to the individual purchaser. This Water Sales Contract is the individual contract contemplated by the WSA.

AGREEMENTS OF THE PARTIES

1. Incorporation of the WSA

The terms and conditions of the WSA are incorporated into this Contract as if set forth in full herein.

2. Term

Unless explicitly provided to the contrary in Article 9 of the WSA, the term of this Contract shall be identical to that provided in Section ___ of the WSA.

3. Service Area

Water delivered by San Francisco to the Customer may be used or sold within the service area shown on the map designated Exhibit A attached hereto. Except as provided in Section ___ of the WSA, Customer shall not deliver or sell any water provided by San Francisco outside of this area without the prior written consent of the General Manager of the SFPUC.

4. Location and Description of Service Connections

Sale and delivery of water to Customer will be made through a connection or connections to the SFPUC Regional Water System at the location or locations shown on Exhibit A attached hereto and with the applicable present account number, description, connection size, and meter size shown on Exhibit B attached hereto.

5. Interties With Other Systems.

Customer maintains interties with neighboring water systems at the location or locations shown on Exhibit A attached hereto and with the connection size(s) as shown on Exhibit C attached hereto.

6. Billing and Payment

San Francisco shall compute the amounts of water delivered and bill Customer therefor on a monthly basis. The bill shall show the separate components of the charge (e.g., service, consumption, demand). Customer shall pay the amount due within thirty (30) days after receipt of the bill.

If Customer disputes the accuracy of any portion of the water bill it shall (a) notify the General Manager of the SFPUC in writing of the specific nature of the dispute and (b) pay the undisputed portion of the bill within thirty (30) days after receipt. Customer shall meet with the General Manager of the SFPUC or a delegate to discuss the disputed portion of the bill.

7., 8., 9... Other Specialized Provisions

[Certain Wholesale Customers will require additional provisions in their individual contracts addressed to issues such as minimum and/or maximum water delivery quantities, prior authorized wheeling arrangements, maximum expansion of the service area, etc. These and other provisions addressing issues unique to the particular Wholesale Customer may be added here, subject to the provisions of Section 9.01 of the WSA.]

IN WITNESS WHEREOF, the parties hereto have executed this Contract, to become effective upon the effectiveness of the WSA, by their duly authorized representatives.

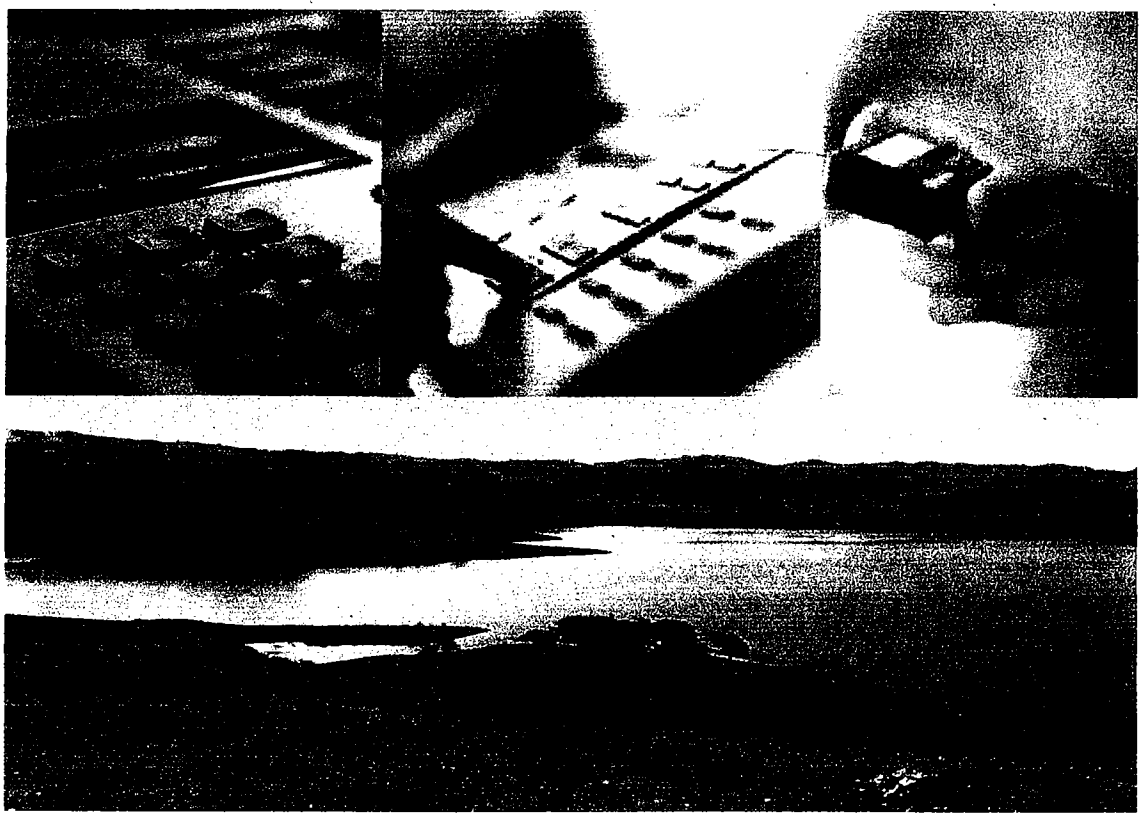
CITY AND COUNTY OF SAN FRANCISCO Acting by and through its Public Utilities Commission BY _____ Edward Harrington General Manager	Date: _____, 2009
NAME OF WHOLESALE CUSTOMER BY _____ Name: Title:	Date: _____, 2009

Note: This attachment is provided for the convenience of the prospective parties to the Water Supply Agreement and associated individual contracts. The format may be modified as desired by San Francisco and Wholesale Customer, subject to Section 9.01 of the WSA.

SFPUC
WATER
WASTEWATER
POWER

ATTACHMENT G

Water Quality Notification and Communications Plan Revision 4 January 2006



Updated by:
Water Quality Engineering
Olivia Chen Consultants, Inc.

ATTACHMENT H

WATER SHORTAGE ALLOCATION PLAN

This Interim Water Shortage Allocation Plan ("Plan") describes the method for allocating water between the San Francisco Public Utilities Commission ("SFPUC") and the Wholesale Customers collectively during shortages caused by drought. The Plan implements a method for allocating water among the individual Wholesale Customers which has been adopted by the Wholesale Customers. The Plan includes provisions for transfers, banking, and excess use charges. The Plan applies only when the SFPUC determines that a system-wide water shortage due to drought exists, and all references to "shortages" and "water shortages" are to be so understood. This Plan was adopted pursuant to Section 7.03(a) of the 1984 Settlement Agreement and Master Water Sales Contract and has been updated to correspond to the terminology used in the June 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 ("Agreement").

SECTION 1. SHORTAGE CONDITIONS

1.1. Projected Available SFPUC Water Supply. The SFPUC shall make an annual determination as to whether or not a shortage condition exists. The determination of projected available water supply shall consider, among other things, stored water, projected runoff, water acquired by the SFPUC from non-SFPUC sources, inactive storage, reservoir losses, allowance for carryover storage, and water bank balances, if any, described in Section 3.

1.2 Projected SFPUC Purchases. The SFPUC will utilize purchase data, including volumes of water purchased by the Wholesale Customers and by Retail Customers (as those terms are used in the Agreement) in the year immediately prior to the drought, along with other available relevant information, as a basis for determining projected system-wide water purchases from the SFPUC for the upcoming year.

1.3. Shortage Conditions. The SFPUC will compare the available water supply (Section 1.1) with projected system-wide water purchases (Section 1.2). A shortage condition exists if the SFPUC determines that the projected available water supply is less than projected system-wide water purchases in the upcoming Supply Year (defined as the period from July 1 through June 30). When a shortage condition exists, SFPUC will determine whether voluntary or mandatory actions will be required to reduce purchases of SFPUC water to required levels.

1.3.1 Voluntary Response. If the SFPUC determines that voluntary actions will be sufficient to accomplish the necessary reduction in water use throughout its service area, the SFPUC and the Wholesale Customers will make good faith efforts to reduce their water purchases to stay within their annual shortage allocations and associated monthly water use budgets. The SFPUC will not impose excess use charges during periods of voluntary rationing, but may suspend the prospective accumulation of water bank credits, or impose a ceiling on further accumulation of bank credits, consistent with Section 3.2.1 of this Plan.

1.3.2 Mandatory Response. If the SFPUC determines that mandatory actions will be required to accomplish the necessary reduction in water use in the SFPUC service area, the SFPUC may implement excess use charges as set forth in Section 4 of this Plan.

1.4. Period of Shortage. A shortage period commences when the SFPUC determines that a water shortage exists, as set forth in a declaration of water shortage emergency issued by the SFPUC pursuant to California Water Code Sections 350 et seq. Termination of the water shortage emergency will be declared by resolution of the SFPUC.

SECTION 2. SHORTAGE ALLOCATIONS

2.1. Annual Allocations between the SFPUC and the Wholesale Customers. The annual water supply available during shortages will be allocated between the SFPUC and the collective Wholesale Customers as follows:

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 water allocated to the SFPUC shall correspond to the total allocation for all Retail Customers.

2.2 Annual Allocations among the Wholesale Customers. The annual water supply allocated to the Wholesale Customers collectively during system wide shortages of 20 percent or less will be apportioned among them based on a methodology adopted by all of the Wholesale Customers, as described in Section 3.11(C) of the Agreement. In any year for which the methodology must be applied, the Bay Area Water Supply and Conservation Agency ("BAWSCA") will calculate each Wholesale Customer's individual percentage share of the amount of water allocated to the Wholesale Customers collectively pursuant to Section 2.1. Following the declaration or reconfirmation of a water shortage emergency by the SFPUC, BAWSCA will deliver to the SFPUC General Manager a list, signed by the President of BAWSCA's Board of Directors and its General Manager, showing each Wholesale Customer together with its percentage share and stating that the list has been prepared in accordance with the methodology adopted by the Wholesale Customers. The SFPUC shall allocate water to each Wholesale Customer, as specified in the list. The shortage allocations so established may be transferred as provided in Section 2.5 of this Plan. If BAWSCA or all Wholesale Customers do not provide the SFPUC with individual allocations, the SFPUC may make a final allocation decision after first meeting and discussing allocations with BAWSCA and the Wholesale Customers.

The methodology adopted by the Wholesale Customers utilizes the rolling average of each individual Wholesale Customer's purchases from the SFPUC during the three immediately

preceding Supply Years. The SFPUC agrees to provide BAWSCA by November 1 of each year a list showing the amount of water purchased by each Wholesale Customer during the immediately preceding Supply Year. The list will be prepared using Customer Service Bureau report MGT440 (or comparable official record in use at the time), adjusted as required for any reporting errors or omissions, and will be transmitted by the SFPUC General Manager or his designee.

2.3. Limited Applicability of Plan to System Wide Shortages Greater Than Twenty Percent. The allocations of water between the SFPUC and the Wholesale Customers collectively, provided for in Section 2.1, apply only to shortages of 20 percent or less. The SFPUC and Wholesale Customers recognize the possibility of a drought occurring which could create system-wide shortages greater than 20 percent despite actions taken by the SFPUC aimed at reducing the probability and severity of water shortages in the SFPUC service area. If the SFPUC determines that a system wide water shortage greater than 20 percent exists, the SFPUC and the Wholesale Customers agree to meet within 10 days and discuss whether a change is required to the allocation set forth in Section 2.1 in order to mitigate undue hardships that might otherwise be experienced by individual Wholesale Customers or Retail Customers. Following these discussions, the Tier 1 water allocations set forth in Section 2.1 of this Plan, or a modified version thereof, may be adopted by mutual written consent of the SFPUC and the Wholesale Customers. If the SFPUC and Wholesale Customers meet and cannot agree on an appropriate Tier 1 allocation within 30 days of the SFPUC's determination of water shortage greater than 20 percent, then (1) the provisions of Section 3.11(C) of the Agreement will apply, unless (2) all of the Wholesale Customers direct in writing that a Tier 2 allocation methodology agreed to by them be used to apportion the water to be made available to the Wholesale Customers collectively, in lieu of the provisions of Section 3.11(C).

The provisions of this Plan relating to transfers (in Section 2.5), banking (in Section 3), and excess use charges (in Section 4) shall continue to apply during system-wide shortages greater than 20 percent.

2.4. Monthly Water Budgets. Within 10 days after adopting a declaration of water shortage emergency, the SFPUC will determine the amount of Tier 1 water allocated to the Wholesale Customers collectively pursuant to Section 2.1. The SFPUC General Manager, using the Tier 2 allocation percentages shown on the list delivered by BAWSCA pursuant to Section 2.2, will calculate each Wholesale Customer's individual annual allocation. The SFPUC General Manager, or his designee, will then provide each Wholesale Customer with a proposed schedule of monthly water budgets based on the pattern of monthly water purchases during the Supply Year immediately preceding the declaration of shortage (the "Default Schedule"). Each Wholesale Customer may, within two weeks of receiving its Default Schedule, provide the SFPUC with an alternative monthly water budget that reschedules its annual Tier 2 shortage allocation over the course of the succeeding Supply Year. If a Wholesale Customer does not deliver an alternative monthly water budget to the SFPUC within two weeks of its receipt of the Default Schedule, then its monthly budget for the ensuing Supply Year shall be the Default Schedule proposed by the SFPUC.

Monthly Wholesale Customer water budgets will be derived from annual Tier 2 allocations for purposes of accounting for excess use. Monthly Wholesale Customer water budgets shall be adjusted during the year to account for transfers of shortage allocation under Section 2.5 and

transfers of banked water under Section 3.4.

2.5. Transfers of Shortage Allocations. Voluntary transfers of shortage allocations between the SFPUC and any Wholesale Customers, and between any Wholesale Customers, will be permitted using the same procedure as that for transfers of banked water set forth in Section 3.4. The SFPUC and BAWSCA shall be notified of each transfer. Transfers of shortage allocations shall be deemed to be an emergency transfer and shall become effective on the third business day after notice of the transfer has been delivered to the SFPUC. Transfers of shortage allocations shall be in compliance with Section 3.05 of the Agreement. The transferring parties will meet with the SFPUC, if requested, to discuss any effect the transfer may have on its operations.

SECTION 3. SHORTAGE WATER BANKING

3.1. Water Bank Accounts. The SFPUC shall create a water bank account for itself and each Wholesale Customer during shortages in conjunction with its resale customer billing process. Bank accounts will account for amounts of water that are either saved or used in excess of the shortage allocation for each agency; the accounts are not used for tracking billings and payments. When a shortage period is in effect (as defined in Section 1.4), the following provisions for bank credits, debits, and transfers shall be in force. A statement of bank balance for each Wholesale Customer will be included with the SFPUC's monthly water bills.

3.2. Bank Account Credits. Each month, monthly purchases will be compared to the monthly budget for that month. Any unused shortage allocation by an agency will be credited to that agency's water bank account. Credits will accumulate during the entire shortage period, subject to potential restrictions imposed pursuant to Section 3.2.1. Credits remaining at the end of the shortage period will be zeroed out; no financial or other credit shall be granted for banked water.

3.2.1. Maximum Balances. The SFPUC may suspend the prospective accumulation of credits in all accounts. Alternatively, the SFPUC may impose a ceiling on further accumulation of credits in water bank balances based on a uniform ratio of the bank balance to the annual water allocation. In making a decision to suspend the prospective accumulation of water bank credits, the SFPUC shall consider the available water supply as set forth in Section 1.1 of this Plan and other reasonable, relevant factors.

3.3. Account Debits. Each month, monthly purchases will be compared to the budget for that month. Purchases in excess of monthly budgets will be debited against an agency's water bank account. Bank debits remaining at the end of the fiscal year will be subject to excess use charges (see Section 4).

3.4. Transfers of Banked Water. In addition to the transfers of shortage allocations provided for in Section 2.5, voluntary transfers of banked water will also be permitted between the SFPUC and any Wholesale Customer, and among the Wholesale Customers. The volume of transferred water will be credited to the transferee's water bank account and debited against the transferor's water bank account. The transferring parties must notify the SFPUC and BAWSCA of each transfer in writing (so that adjustments can be made to bank accounts), and will meet with the SFPUC, if requested, to discuss any affect the transfer may have on SFPUC operations. Transfers of banked water shall be deemed to be an emergency transfer and shall become effective on the third business day after notice of the transfer has been delivered to the SFPUC.

If the SFPUC incurs extraordinary costs in implementing transfers, it will give written notice to the transferring parties within ten (10) business days after receipt of notice of the transfer. Extraordinary costs means additional costs directly attributable to accommodating transfers and which are not incurred in non-drought years nor simply as a result of the shortage condition itself. Extraordinary costs shall be calculated in accordance with the procedures in the Agreement and shall be subject to the disclosure and auditing requirements in the Agreement. In the case of transfers between Wholesale Customers, such extraordinary costs shall be considered to be expenses chargeable solely to individual Wholesale Customers and shall be borne equally by the parties to the transfer. In the case of transfers between the SFPUC and a Wholesale Customer, the SFPUC's share of any extraordinary transfer costs shall not be added to the Wholesale Revenue Requirement.

3.4.1. Transfer Limitations. The agency transferring banked water will be allowed to transfer no more than the accumulated balance in its bank. Transfers of estimated prospective banked credits and the "overdrafting" of accounts shall not be permitted. The price of transfer water originally derived from the SFPUC system is to be determined by the transferring parties and is not specified herein. Transfers of banked water shall be in compliance with Section 3.05 of the Agreement.

SECTION 4. WHOLESALE EXCESS USE CHARGES

4.1. Amount of Excess Use Charges. Monthly excess use charges shall be determined by the SFPUC at the time of the declared water shortage consistent with the calendar in Section 6 and in accordance with Section 6.03 of the Agreement. The excess use charges will be in the form of multipliers applied to the rate in effect at the time the excess use occurs. The same excess use charge multipliers shall apply to the Wholesale Customers and all Retail Customers. The excess use charge multipliers apply only to the charges for water delivered at the rate in effect at the time the excess use occurred.

4.2 Monitoring Suburban Water Use. During periods of voluntary rationing, water usage greater than a customer's allocation (as determined in Section 2) will be indicated on each SFPUC monthly water bill. During periods of mandatory rationing, monthly and cumulative water usage greater than a Wholesale Customer's shortage allocation and the associated excess use charges will be indicated on each SFPUC monthly water bill.

4.3. Suburban Excess Use Charge Payments. An annual reconciliation will be made of monthly excess use charges according to the calendar in Section 6. Annual excess use charges will be calculated by comparing total annual purchases for each Wholesale Customer with its annual shortage allocation (as adjusted for transfers of shortage allocations and banked water, if any). Excess use charge payments by those Wholesale Customers with net excess use will be paid according to the calendar in Section 6. The SFPUC may dedicate excess use charges paid by Wholesale Customers toward the purchase of water from the State Drought Water Bank or other willing sellers in order to provide additional water to the Wholesale Customers. Excess use charges paid by the Wholesale Customers constitute Wholesale Customer revenue and shall be included within the SFPUC's annual Wholesale Revenue Requirement calculation.

SECTION 5. GENERAL PROVISIONS GOVERNING WATER SHORTAGE ALLOCATION PLAN

5.1. Construction of Terms. This Plan is for the sole benefit of the parties and shall not be construed as granting rights to any person other than the parties or imposing obligations on a party to any person other than another party.

5.2. Governing Law. This Plan is made under and shall be governed by the laws of the State of California.

5.3. Effect on Agreement. This Plan describes the method for allocating water between the SFPUC and the collective Wholesale Customers during system-wide water shortages of 20 percent or less. This Plan also provides for the SFPUC to allocate water among the Wholesale Customers in accordance with directions provided by the Wholesale Customers through BAWSCA under Section 2.2, and to implement a program by which such allocations may be voluntarily transferred among the Wholesale Customers. The provisions of this Plan are intended to implement Section 3.11(C) of the Agreement and do not affect, change or modify any other section, term or condition of the Agreement.

5.4. Inapplicability of Plan to Allocation of SFPUC System Water During Non-Shortage Periods. The SFPUC's agreement in this Plan to a respective share of SFPUC system water during years of shortage shall not be construed to provide a basis for the allocation of water between the SFPUC and the Wholesale Customers when no water shortage emergency exists.

5.5. Termination. This Plan shall expire at the end of the Term of the Agreement.. The SFPUC and the Wholesale Customers can mutually agree to revise or terminate this Plan prior to that date due to changes in the water delivery capability of the SFPUC system, the acquisition of new water supplies, and other factors affecting the availability of water from the SFPUC system during times of shortage.

SECTION 6. ALLOCATION CALENDAR

6.1. Annual Schedule. The annual schedule for the shortage allocation process is shown below. This schedule may be changed by the SFPUC to facilitate implementation.

6.1.1

In All Years	Target Dates
1. SFPUC delivers list of annual purchases by each Wholesale Customer during the immediately preceding Supply Year	November 1
2. SFPUC meets with the Wholesale Customers and presents water supply forecast for the following Supply Year	February
3. SFPUC issues initial estimate of available water supply	February 1
4. SFPUC announces potential first year of drought (if applicable)	February 1
5. SFPUC and Wholesale Customers meet upon request to exchange information concerning water availability and projected system-wide purchases	February 1-May 31
6. SFPUC issues revised estimate of available water supply, and confirms continued potential shortage conditions, if applicable	March 1
7. SFPUC issues final estimate of available water supply	April 15th or sooner if adequate snow course measurement data is available to form a robust estimate on available water supply for the coming year.
8. SFPUC determines amount of water available to Wholesale Customers collectively	April 15th or sooner if adequate snow course measurement data is available to form a robust estimate on available water supply for the coming year.

In Drought Years	Target Dates
9. SFPUC formally declares the existence of water shortage emergency (or end of water shortage emergency, if applicable) under Water Code Sections 350 et. seq.	April 15-31
10. SFPUC declares the need for a voluntary or mandatory response	April 15-31
11. BAWSCA submits calculation to SFPUC of individual Wholesale Customers' percentage shares of water allocated to Wholesale Customers collectively	April 15- 31
12. SFPUC determines individual shortage allocations, based on BAWSCA's submittal of individual agency percentage shares to SFPUC, and monthly water budgets (Default Schedule)	April 25—May 10
13. Wholesale Customers submit alternative monthly water budgets (optional)	May 8-May 24
14. Final drought shortage allocations are issued for the Supply Year beginning July 1 through June 30	June 1
15. Monthly water budgets become effective	July 1
16. Excess use charges indicated on monthly Suburban bills	August 1 (of the beginning year) through June 30 (of the succeeding year)
17. Excess use charges paid by Wholesale Customers for prior year	August of the succeeding year

NOT USED

ATTACHMENT J

DEFINITIONS AND FORMULAS FOR CALCULATING PROPORTIONAL ANNUAL WATER USE

TABLE OF CONTENTS

This Attachment contains four sections, three figures, and five tables.

Section A:	Water Meters
Section B:	Calculation of Proportional Annual Water Use
Section C:	Data Requirements and Schedule
Section D:	County Line and In-City Terminal Reservoir Meter Calibration and Maintenance
Figure 1:	Locations of SFPUC County-Line Meters and In-City Terminal Reservoirs
Figure 2:	Generalized Schematic of Lake Merced Pump Station
Figure 3:	Locations of System Input and In-Line Meters
Table 1:	Base Usage and Allocation Rates
Table 2:	Locations of SFPUC County-line Meters and In-City Terminal Reservoirs
Table 3:	Locations of SFPUC System Input and In-line Meters
Table 4:	County-line Meters, In-City Terminal Reservoirs and Associated Metering Equipment
Table 5:	Meter Calibration and Maintenance Frequency

Table 1 presents the format for the water usage and allocation rate calculations for reference and to illustrate the definitions and formulas described in Sections A through C. Tables 2 and 3 list the meters whose locations are shown on Figures 1 and 3, respectively. Table

4 identifies the type of meter and associated metering equipment for the County-line Meters and Terminal Reservoirs. Table 5 identifies the meter calibration and maintenance frequency for the meters and equipment listed in Table 4.

SECTION A. WATER METERS

1. General

The Agreement provides that certain operating and maintenance expenses and the capital cost of certain categories of utility plant in service are to be allocated between San Francisco and the Wholesale Customers on the basis of proportionate annual usage of the Regional Water System. The purpose of this Attachment is to describe the meters and illustrate the method by which proportionate annual usage will be calculated.

2. Units of Measurement, Rounding, Conversion

The SFPUC will compile the usage data required to complete Table 1 annually. The units of measurement and conventions for converting and rounding will be as follows.

The data in the Table 1 will be presented, and the calculations contemplated by this Attachment shown, in units of millions of gallons per day (mgd), rounded to the nearest tenth of an mgd. Percentages (e.g., the City and Wholesale usage rates) shall be carried to two digits to the right of the decimal point and reduction factors shall be carried to four digits to the right of the decimal point. Data compiled by the SFPUC in units of hundreds of cubic feet per year (ccf) shall be converted to mgd by multiplying hundreds of cubic feet per year by 0.0000020493 (or 2.0493×10^{-6}) for non-leap years and 0.0000020437 (or 2.0437×10^{-6}) for leap years.

In rounding, if the rightmost digit dropped is 0 through 4, the preceding digit shall be left unchanged; if the rightmost digit dropped is 5 through 9, the preceding digit shall be increased by 1.

3. Location of Meters/Gauges

The SFPUC presently maintains meters and gauges that have been used to determine the proportionate usage of the Regional Water System, in accordance with the methods and calculations described in Exhibit J to the 1984 contract between San Francisco and the Wholesale Customers. These meters consist of "County-Line Meters," "In-City Terminal Reservoir Meters" and "System Input and In-line Meters" as described in the following subsections. As new capital improvement projects are designed and constructed by the SFPUC, it may be necessary for new meters to be installed to ensure continued accurate determinations of the proportionate usage of the Regional Water System. "Planned meters" are included in the following subsections where planned capital improvement projects are likely to require the installation of additional meters.

a. County-line Meters

The SFPUC presently maintains meters at or near the San Mateo-San Francisco County line to measure flow through all transmission pipelines entering the City ("County-line Meters"). The existing and planned County-line Meters are listed in Table 2 and shown on Figures 1 and 2. Additional details pertaining to the County-line meters located at the Lake Merced Pump Station, and specifically to water deliveries from the pump station to Sunset Reservoir, Sutro Reservoir, and Lake Merced are provided below.

(1) County-Line deliveries to Sunset and Sutro Reservoirs

Water delivered to the City through the Sunset Supply Pipeline may be pumped from the Lake Merced Pump Station to either Sunset Reservoir or Sutro Reservoir located within the City. When water is pumped from the Lake Merced Pump Station to both Sunset and Sutro reservoirs simultaneously, the recording instrumentation on the Sunset and Sutro venturi meters are designed to record flows through both meters. When water is pumped to Sutro Reservoir only (typically utilizing Pump No. 4 at the

Lake Merced Pump Station), the source water is from the Sunset Reservoir (not the County-line), and the direction of flow through the Sunset venturi meter is reversed. Under this pumping scenario, the recording instrumentation on the Sunset and Sutro venturi meters are designed to not record flow on their respective recorders such that the in-City transfer of water between Sunset and Sutro Reservoirs is not included as a County-line delivery to the City. Figure 2 provides a generalized schematic of the Lake Merced Pump Station and the typical direction of flow from the County-line, through the pump station.

(2) County-line deliveries to Lake Merced

In order to raise and maintain water levels in Lake Merced, the SFPUC occasionally delivers water directly from the Regional Water System to Lake Merced. Deliveries from the Regional Water System to Lake Merced are accomplished at the Lake Merced Pump Station. The procedure involves operating valves on the suction side of Sunset Pump No. 2 such that water may flow by gravity in the Sunset Supply Pipeline, from San Mateo County, across the County-line and into San Francisco, through Lake Merced Pump Station and into the Lake Merced wet well. A 16-inch pipeline connection on the suction side of Sunset Pump No. 2 allows for deliveries of water to the wet well (see Figure 2). Water deliveries from the Regional Water System to Lake Merced are considered County-line deliveries and an in-City usage in the calculation of water allocation rates.

b. In-City Terminal Reservoirs

Water usage by the City includes water deliveries from the SFPUC's "terminal reservoirs." The terminal reservoirs are: 1) Sunset Reservoir, 2) University Mound Reservoir, and 3) Merced Manor Reservoir. The terminal reservoirs are shown on Figure 1.

c. System Input and In-Line Meters

The SFPUC presently measures water flow into and through the Regional System utilizing "System Input and In-Line Meters." The existing and planned System Input and In-Line Meters are listed in Table 3 and shown on Figure 3.

d. Wholesale Customer Meters and City Retail Customer Meters Located Outside the Boundaries of the City

The SFPUC presently measures water deliveries from the Regional Water System to its Wholesale Customers at various locations where the water delivery systems of the individual Wholesale Customers tie into the Regional Water System. The meters at these locations are referred to as the Wholesale Customers' "master meters." The SFPUC also measures water deliveries from the Regional Water System to other customers located outside of the boundaries of the City that are not Wholesale Customers. Water deliveries to the Wholesale Customers and Retail Customers outside the City's boundaries that receive water from the Regional Water System are accounted for by the SFPUC's Customer Service Division as described in Section B.

4. Replacement and Relocation of Meters, Gauges, and Recording Devices.

The SFPUC presently equips all of its large venturi meters with differential pressure transmitters. The smaller meters utilize other methods and equipment to register and record flows. The SFPUC will maintain the meters, gauges, and recording devices described above in subsections (a), (b), (c), and (d) unless and until such meters, gauges, and recording devices are replaced.

The SFPUC may replace the meters, gauges, and recording devices described above in subsections (a), (b), (c), and (d) or install new meters, gauges, and recording devices at new locations, provided that such changes do not diminish the accuracy of the water flow measurements or impair the ability of the SFPUC to separate direct City water use from water use by the wholesale customers. Maintenance and calibration procedures for new or replaced equipment may change. Modified maintenance and calibration procedures for new or replaced equipment will conform to industry standards set forth in AWWA Manual M33, the applicable

standards in the International Society of Automation, and will implement the manufacturer's instructions for maintenance and calibration. The SFPUC will provide BAWSCA with advance written notice of any such changes, together with a brief explanation of the reasons therefor and a description of the type and location of the replacement. Such notice shall automatically amend the list of meters, gauges, and recording devices set forth above in subsections (a), (b), (c), and (d).

5. Recording of Water Flow Data

a. Flow Data

The City shall record and maintain data measuring base water flow throughout the SFPUC Regional Water System as necessary to determine proportional annual water usage.

b. Reservoir Data

The SFPUC shall record and maintain data measuring the levels of the terminal reservoirs described above in subsection A.3.b and shown on Figure 1 on an hourly basis. Flow values derived from reservoir level readings for all reservoirs in the SFPUC wholesale system shall be calculated using the tables contained in the SFPUC publication "Reservoir Data" (aka "The Weir Book"), which set forth the relationship between reservoir levels and water volumes, as such tables may be amended from time to time to reflect changes in the volumes of the various reservoirs. The tables to be used initially shall be those from the current edition of The Weir Book.

SECTION B. CALCULATION OF PROPORTIONAL ANNUAL USAGE

"Base rates" means the percentages of annual SFPUC deliveries attributed to the Wholesale Customers and to City Retail Customers.

The percentage of annual SFPUC metered deliveries attributed to the Wholesale Customers (i.e., the wholesale base rate) shall be calculated for each fiscal year as described below and illustrated in Table 1. The item numbers listed below correspond to the item numbers listed in Table 1.

(1) "Gross San Francisco County line base deliveries" shall equal the total amount of water flowing into the City's distribution system through transmission pipelines entering the City, as measured by the County-Line Meters described in Section A.3.a. and shown on Figures 1 and 2.

(2) "Daly City base deliveries" shall equal the water flowing to Daly City through meter accounts provided downstream of the County-Line meters or through SFPUC's City Distribution Division. At present these accounts are:

(a) CSPL1/Macdonald Avenue Service (Account number 010084-01-0)

(b) Guttenberg Street Service (Account number 010013-01-3)

(c) Carter Street Service (Account numbers 284070-01-8 and 284071-01-6)

These accounts represent a portion of the total deliveries to Daly City. The quantities of water delivered to these four Daly City accounts are reported monthly in Form MGT441 by the SFPUC's Customer Service Division. These connections to meters are presently located within the City, and thus record water which has already been recorded by the SFPUC's master meters at the County line. So long as this condition continues, Daly City base deliveries shall be subtracted from "Gross San Francisco County line base deliveries."

(3) "Net San Francisco base deliveries" shall equal the result of subtracting "Daly City base deliveries" from "Gross San Francisco County line base deliveries."

(4) "Other suburban raw water base deliveries" shall equal the sum of all deliveries of raw (untreated) water to customers of the SFPUC located outside the City other than deliveries to the Wholesale Customers. "Other suburban raw water base deliveries" include deliveries of raw water in Alameda and San Mateo Counties to SFPUC Retail Customers, City departments and commissions, and other users affiliated with San Francisco.

(5) "Other suburban treated water base deliveries" shall equal the sum of all deliveries of treated water to customers of the SFPUC located outside the City other than deliveries to the Wholesale Customers. Other suburban treated water base deliveries include deliveries of treated water to the SFPUC's Retail Customers in San Mateo, Santa Clara and Alameda Counties (such as NASA Ames Research Center and LLNL), to City departments and commissions and other users affiliated with San Francisco (such as the San Francisco International Airport, the San Francisco County Jail, and tenants of land owned by the City Recreation and Park Department).

(6) "Other suburban base deliveries" shall equal the sum of "Other suburban raw water deliveries" and "Other suburban treated water deliveries." The combined amount of raw and treated water delivered to suburban entities other than the Wholesale Customers is reported monthly in Form MGT440 by the SFPUC's Customer Service Division.

(7) "Total City base usage" shall equal "Net San Francisco base deliveries" plus "Other suburban base deliveries."

(8) "Total wholesale base usage" shall equal the sum of all metered deliveries to the Wholesale Customers measured at their SFPUC master meters (including all deliveries to Daly City which are comprised of deliveries through meters located outside San Francisco and meters located inside San Francisco, deliveries through the latter of which are designated above in paragraph B.1.2 as "Daly City base

deliveries"). The quantity of water delivered to the individual Wholesale Customers, and the combined amount of water delivered to all Wholesale Customers is reported monthly in Form MGT440 by the SFPUC's Customer Service Division.

(9) "Total system base usage" shall equal "City base usage" plus "Wholesale base usage."

(10) "Wholesale base rate" shall equal the percentage obtained by dividing "Wholesale base usage" by "Total system base usage."

(11) "City base rate" shall equal the percentage obtained by subtracting "Wholesale base rate" from 100 percent.

(12) "Base system input" shall equal all amounts of water supplied to the SFPUC Regional Water System, which presently comes from the following sources:

(a) Hetch Hetchy water as measured at the venturi meters on the 58–inch, 61-inch, and 78.5-inch San Joaquin Pipeline Nos. 1, 2, and 3 near Oakdale.

(b) Water supplied by HHWPD to LLNL as measured at the customer meter. Water delivered from the system to LLNL shall be deemed negative in sign for the purpose of determining "Base system input."

(c) Hetch Hetchy water pumped from the Alameda siphons to San Antonio Reservoir as measured at the venturi meter on the 60-inch San Antonio pipeline. Water delivered from the system to San Antonio Reservoir shall be deemed negative in sign for the purpose of determining "Base system input."

(d) Sunol Valley Water Treatment Plant as measured at the meter on the 78-inch effluent pipeline.

(e) Harry Tracy Water Treatment Plant as measured at the venturi meters on the 60-inch and 78-inch effluent pipelines.

(f) Raw water deliveries to all SFPUC Retail Customers outside the City boundaries as measured at the customer meter. These deliveries are considered positive for the purposes of Table 1. Currently, raw water deliveries to the system are represented by the following account numbers contained in Form MGT440 prepared by the SFPUC's Customer Service Division:

266081-01-7 (Calaveras Nursery)
266081-02-5 (Calaveras Nursery)
264355-01-7 (Caltrans)
266084-02-9 (Color Spot Nursery)
272701-02-0 (Color Spot Nursery)
266069-02-0 (Crystal Springs Golf Course)
266078-02-1 (Dell Franklin)
266078-01-3 (Dells Nursery)
266084-01-1 (Hi-C Nursery)
272701-01-2 (Hi-C Nursery)
284112-01-8 (Hansen Aggregates)
266084-03-7 (Jeff Anhorn Nursery)
272701-03-8 (Jeff Anhorn Nursery)
266079-02-9 (Mission Valley Rock)
281043-01-8 (Mission Valley Rock)
267618-02-3 (Nagata Farms)
267618-01-5 (Nagata Farms)
266090-01-8 (Naka Nursery)

266091-01-6 (Naka Nursery)
266090-02-6 (Naka Nursery)
266091-02-4 (Naka Nursery)
264315-02-9 (Pacific Nurseries)
266076-01-7 (Sunol Christmas Tree Farm)
266076-02-5 (Sunol Tree Farm)
276095-01-5 (Sunol Valley Golf & Recreation)
266077-02-3 (Ura Farm)
264352-01-4 (Ura, John)
266075-01-9 (Valley Crest)
268276-01-1 (Valley Crest Nursery)
266093-01-2 (Valley Crest Tree Company)
268426-02-0 (Valley Crest Tree Company)
266075-02-7 (Valley Crest Tree Company)
266093-02-0 (Valley Crest Tree Company)
268276-02-9 (Valley Crest Tree Company)
266082-01-5 (Western Star Nursery)
266089-01-0 (Western Star Nursery)
267254-02-7 (Western Star Nursery)
266082-02-3 (Western Star)
266089-02-8 (Western Star)
267254-03-5 (Western Star)

(g) Raw water deliveries from Pilarcitos Reservoir and Crystal Springs Reservoir to Coastside County Water District as measured at the customer meters. These deliveries are considered positive for the purposes of Table 1. Currently, raw water deliveries to Coastside County Water District from both reservoirs are represented under account number 010027-01-9 contained in Form MGT441 prepared by the SFPUC's Customer Service Division:

(h) Crystal Springs Balancing Reservoir. The flow into or out of the Crystal Springs Balancing Reservoir shall be calculated based on the changes in the amounts of water stored in the reservoir. The amounts of water stored shall be determined by the use of water level sensors, and the application of water level readings to a water level-storage capacity table. Decreases in storage, which indicate a flow from the Balancing Reservoir into the system, shall be deemed positive in sign. Increases in storage, which indicate a flow into the Balancing Reservoir from the system, shall be deemed negative in sign. Over the period of a year, the total flows into and out of Crystal Springs Balancing Reservoir are nearly equivalent. As such, total system input from Crystal Springs Reservoir shall be deemed zero for calculating current base rates.

(i) Deliveries to Crystal Springs Reservoir as measured by the overflow weir at the Pulgas Pump Station. Deliveries from the system to Crystal Springs Reservoir ("spills") shall be deemed negative in sign for the purpose of determining "Base system input."

(j) Terminal Reservoirs. The "terminal reservoirs" consist of Sunset Reservoir, University Mound Reservoir, and Merced Manor Reservoir, each located within the City of San Francisco. The flow into or out of the terminal reservoirs shall be calculated based on the changes in the amounts of water stored in them. The amounts of water stored shall be determined by the use of water level sensors, and the application of water levels to water level-storage capacity tables. Over the period of a year, the total flows into and out of terminal reservoirs are nearly equivalent. As such, total system input from the terminal reservoirs shall be deemed zero for calculating base rates.

(k) Other Sources. Other sources of flow into, or from, the Regional Water System, shall be accounted for as "other sources." Examples of other

sources of system input would include intertie water deliveries between the Regional System and the Santa Clara Valley Water District, and between the Regional System and the East Bay Municipal Utilities District, and deliveries of raw water from Crystal Springs Reservoir in the event of an emergency. Flows from the system shall be deemed negative in sign for the purpose of determining "Base system input."

(13) "Total base system input" shall equal the sum of the system inputs from the sources described in paragraph B.1.12.

(14) "Joint system loss reduction factor" shall equal "Total system base usage" divided by "Total base system input." "Joint system loss reduction factor" shall not exceed 1.0.

(15) "Daly City reduction factor" shall equal "Net San Francisco base deliveries" divided by "Gross San Francisco County line base deliveries." "Daly City reduction factor" shall not exceed 1.0.

(16) "Total suburban base deliveries" shall equal "Other suburban base deliveries" plus "Total wholesale base usage."

(17) "Suburban reduction factor" shall equal "Wholesale base usage" divided by "Total suburban base deliveries." "Suburban reduction factor" shall not exceed 1.0.

(18) "HHWPD Deliveries above Oakdale" shall equal the total amount of water delivered by the HHWPD to users located above the system input meters in Oakdale. Water users located above the system input meters in Oakdale are currently represented by Groveland Community Services District and the HHWPD facility at Moccasin.

(19) "HH Reduction Factor" is calculated for the purpose of determining the Wholesale Customers' share of the Hetch Hetchy Assessment. The factor shall equal a fraction, the numerator of which is the total system input measured at the Oakdale meters (Table 1, line 12.a) and the denominator of which is the sum of the total system input measured at the Oakdale meters (Table 1, line 12.a) plus the total "HHWPD deliveries above Oakdale" (Table 1, line 18).

SECTION C. DATA REQUIREMENTS AND SCHEDULE

1. Collection and Dissemination of Data

The SFPUC presently compiles daily flow data for the County-line meters, System Input and In-Line Meters, and daily reservoir water level data, and provides copies of that data to the Wholesale Customers (through BAWSCA) on a monthly basis. The SFPUC also provides copies of wholesale "Suburban Resale" and City Retail water usage data to BAWSCA on a monthly basis. Additionally, the SFPUC provides BAWSCA access to flow data for the meters as reported and recorded by the SFPUC's SCADA system.

The SFPUC shall continue to provide the flow and water usage data described above to BAWSCA on a monthly basis, and shall continue to allow BAWSCA access to the SCADA system data, so that a coordinated effort between the SFPUC and BAWSCA will allow for updating Table 1 of this Attachment annually on a timely basis.

It shall continue to be the SFPUC's responsibility to compile the data necessary to update Table 1 of this Attachment annually and the City shall deliver to BAWSCA, for review and approval, copies of the updated Table 1 by September 15 for the fiscal year ending the preceding June 30, as shown by the schedule contained in Section C.3.

Upon reasonable notice to the General Manager of the SFPUC, BAWSCA shall be given access to all water flow and usage records compiled by the SFPUC, including raw data, at reasonable times during business hours and shall have the right to copy such records and data at its expense.

2. Lack of Data

The parties recognize that, because of human error, mechanical failure, or other unplanned events, portions of the data required for the calculation of the usage rates and ratios described in Sections B and C of this Attachment occasionally may be unavailable or incorrect. In the event that such data are unavailable or inaccurate, the SFPUC shall make a reasonable estimate of the unavailable or incorrect data or use the most accurate alternative data that are available, and substitute the estimate therefor.

If the SFPUC uses an estimate of the unavailable or inaccurate data or alternative data, it shall provide BAWSCA with the following:

(1) a description of the unavailable or inaccurate data and the estimation or substitution of data used therefor;

(2) an explanation of the cause of the missing or inaccurate data and the reasons underlying the SFPUC's estimation or substitution of alternate data; and

(3) a statement of how the error or malfunction that caused the unavailability or inaccuracy of the data will be avoided in the future.

The SFPUC shall provide this information to BAWSCA upon calculation by the SFPUC of the usage rates and ratios described in this Attachment for the fiscal year in question.

3. Schedule for Completing the Annual Calculations of Water Usage Rates

The parties recognize the importance of updating Table 1 of this Attachment annually in a timely manner, and that historically, doing so has required a coordinated effort between the SFPUC and BAWSCA. To assure timely completion of the annual calculations of water usage rates and ratios, the parties agree to adhere to the following schedule.

(1) By August 15: The SFPUC shall forward to BAWSCA all data for the fiscal year ending the preceding June 30, necessary to make a determination of the base water usage and base allocation rates for the Wholesale Customers and the City.

(2) By September 15. The City shall deliver to BAWSCA, for review and approval, draft copies of the updated Table 1 for the fiscal year ending the preceding June 30.

(3) Between September 15 and October 15. The SFPUC and BAWSCA shall reconcile any discrepancies or inaccuracies in the draft calculations of water usage rates and shall reach agreement on a final updated Table 1 for the fiscal year ending the preceding June 30.

(4) By November 1. The SFPUC shall deliver to BAWSCA a finalized updated Table 1, signed by the SFPUC General Manager, or appropriate designee, representing the water usage rates agreed upon by the SFPUC and BAWSCA, for the fiscal year ended June 30.

(5) By November 15. BAWSCA shall return the finalized Table 1 to the SFPUC, counter-signed by the BAWSCA General Manager/CEO. If the SFPUC does not receive the countersigned Table 1 from BAWSCA by November 15, it may use the water use data as contained in the Table 1 delivered pursuant to paragraph (4) above, subject to arbitration as provided in section 8.01 of the Agreement.

SECTION D. COUNTY LINE AND IN-CITY TERMINAL RESERVOIR METER CALIBRATION AND MAINTENANCE

1. General

This section refers only to the County-Line and In-City Terminal Reservoir Meters. The term "meter(s)" includes the primary meter itself (most of the primary meters in the SFPUC's water system are Venturi-type flow meters) as well as any and all of the associated equipment used to measure, record, and transmit flow and water level data. The metering equipment associated with the primary metering device (also referred to as the secondary metering equipment) includes differential pressure transmitters, recorders, telecommunications equipment and the portion of the SFPUC's Supervisory Control and Data Acquisition (SCADA) System that is used to transmit flow and water level measurements from the water meter to the computer terminal that records the measured data.

The County-Line and In-City Terminal Reservoir meters, their general locations, and their associated metering equipment are listed in Table 4.

2. Frequency and Type of Work to be Performed

The meters, water level sensors, and associated metering equipment are to be inspected, tested, calibrated, and maintained according to the applicable meter calibration and maintenance frequency specified in Table 5.

3. Components of the Calibration and Maintenance Work

The SFPUC will contract with an independent metering consultant to perform periodic inspections, testing, servicing and calibrations of the meters and metering equipment for the County-line meters and In-City Terminal Reservoirs. The metering consultant's calibration and maintenance work will include the following components:

- Annual Pitot Tube Tests: Pitot tube flow tests shall be performed once a year on all Venturi-type flow meters. See Sections 4.b and 4.c for further detail.

- Quarterly Secondary Meter Equipment Testing and Calibration: The secondary metering equipment shall be tested for accuracy and calibrated quarterly at five input levels (0%, 25%, 50%, 75% and 100% of the full range of flow). See Section 4.a for further detail.

- Cleaning: Clean and remove dust, oils, dirt, etc. from all instruments.

- Flushing: Flush and clean Venturi tube differential pressure (D/P) sensing lines.

- Inspecting: Inspections for mechanical fatigue, leaky pipes and fittings, worn parts, and improper operation of electrical/electronic equipment.

- Lubrication: Mechanical parts shall be lubricated as needed.

4. Calibration Procedures

The metering consultant shall continue to calibrate and maintain the County-line meters and metering equipment listed in Table 4 in accordance with the frequency of work specified in Table 5. The work includes documenting meter readings and accuracy before and after calibration. Specific tasks to be completed by the metering consultant are as follows:

a) Quarterly testing and calibration. The secondary metering equipment shall be tested and calibrated quarterly using NIST Traceable test equipment, and a "dead weight tester."

The system loop error for the secondary metering equipment is determined by connecting its output to the differential pressure transmitter and adjusting the dead weight tester to 5 places over the full range of flow: 0%, 25%, 50%, 75% and 100%, while all instruments in the loop are connected. For water level transmitters, provide simulated test head equal to full range of the transmitter being calibrated, comparing the simulated test head to its 4-20 milliamp output signal to determine transmitter error and calibration requirements. The system loop error for the secondary metering equipment may not exceed +/-2%. The individual components of the secondary metering equipment shall also be tested at the same 5 input levels and calibrated as necessary to ensure the error of the system and individual components does not exceed +/- 2%.

b) Annual Pitot Tube Testing and Calibration. Annual Pitot tube testing shall be conducted for a comparison of flow totalized by the Pitot tube test equipment and the totalizer used by the SFPUC for water measurement and billing purposes. Annual Pitot tube flow testing shall be performed on all flow meters for assessment of Venturi error using the Annubar continuous flow method at 22% of the pipe radius. Pitot tube flow testing must be conducted continuously for a minimum of 30 minutes per test.

The Pitot tube flow tests are first performed before any of the secondary metering instruments are calibrated to determine the total system error (system consisting of the primary metering device and secondary metering equipment). Once the total system loop error has been established, perform secondary loop instrument testing and calibration as per the quarterly testing and calibration procedures described in 4.a above. If the total system error exceeds +/- 2% after calibration of the secondary metering equipment, minor adjustments to the differential pressure transmitter shall be made to correct (calibrate) the error in the Venturi meter. Repeat Pitot tube testing must be performed after the individual instrument calibration and differential pressure transmitter adjustments have been performed to establish that total system loop error is within +/- 2%.

c) Pitot tube testing shall be conducted at a flow rate representing the typical flow for the meter (and, if operationally possible, at three different flows ranging from a minimum to near maximum capacity flow).

d) The metering consultant shall perform the meter testing and calibration procedures utilizing the meter characteristic curves (for example, the pressure drop vs. flow for a Venturi meter) that have been obtained during previous meter calibration and maintenance work.

e) During each quarterly site visit, the metering consultant shall inspect, assess and document the condition of all metering equipment, including meter, gauges, indicators, recorders, transmitters and other instrumentation, used in the measurement and recording of flow rates and cumulative flow totals and shall document all operational problems with the calibration instruments and meters during the calibration process. Problems may include air entrainment, leakage, flow disturbance and unstable meter readings.

f) Prior to each quarterly site visit, the metering consultant shall review prior calibration records and reports for each meter to determine if previously-identified errors or equipment deficiencies were corrected as previously recommended.

g) Each quarter, the metering consultant shall submit a final report (See Section 6) containing all of the calibration results for each meter tested and calibrated during the quarter. The metering consultant's report shall include a narrative description of the work conducted on each meter and meter calibration reports for the individual metering equipment. The quarterly report shall also address deficiencies that were not previously corrected according to the recommendations made in the prior report.

5. Calibration Instruments

The instrument used for flow testing of the primary meter (Venturi) must meet the accuracy standards required by the American Water Works Association (AWWA), and be

capable of measuring actual flows with an error of less than +/- 2%. If a particular calibration instrument is not rated for accuracy by the AWWA, its accuracy will be determined by reference to its manufacturer's representations as to accuracy.

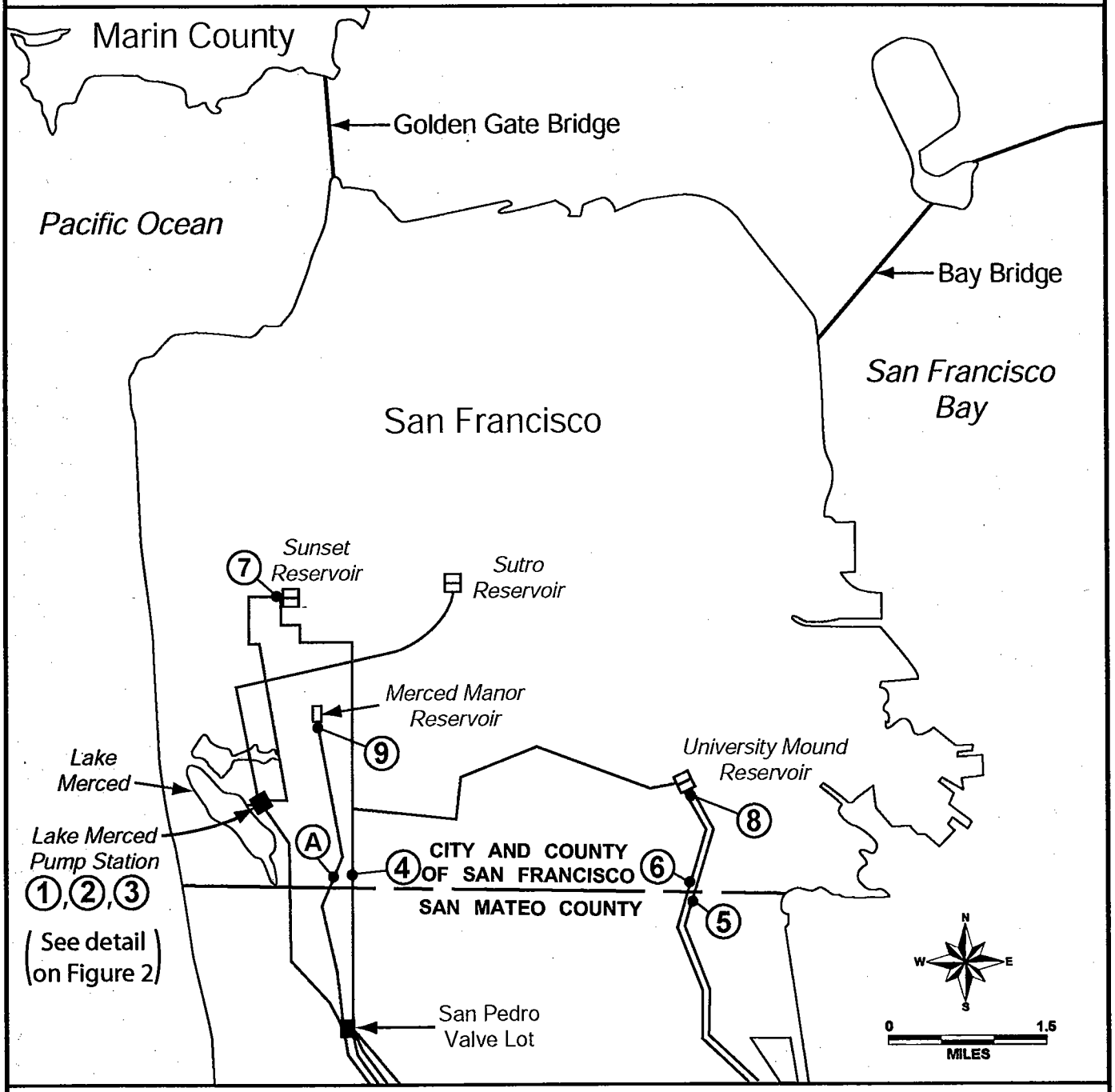
6. Calibration Reports

Within fourteen (14) working days after the beginning of each quarter, the metering consultant shall submit a written progress report of the work performed during the previous quarter. Each quarterly report will describe the results of the meter calibrations and any other tasks performed. The report will also include comments regarding any observations of abnormal conditions and any recommendations regarding these meters and their related equipment.

The reports must include complete descriptions and status of meters and related equipment, dates and times of service, all calibration specifics, pipeline dimensions, range of flow rates and totalized volumes, before and after error analysis and accuracy levels achieved, testing equipment used, and the name(s) of the person(s) that performed the work.

When appropriate and necessary, the metering consultant shall provide recommendations for improving the accuracy and reliability of the equipment and/or the methods of data collection. If, in the opinion of the metering consultant, the condition of a meter or its associated metering equipment is found to be defective, damaged, or otherwise in need of immediate repair or replacement, the metering consultant shall: 1) promptly notify the appropriate SFPUC personnel of the problem and recommend a solution to the problem so that the SFPUC can determine how to address it and, 2) include the problem description in its quarterly report.

Locations of SFPUC County-Line Meters and In-City Terminal Reservoirs

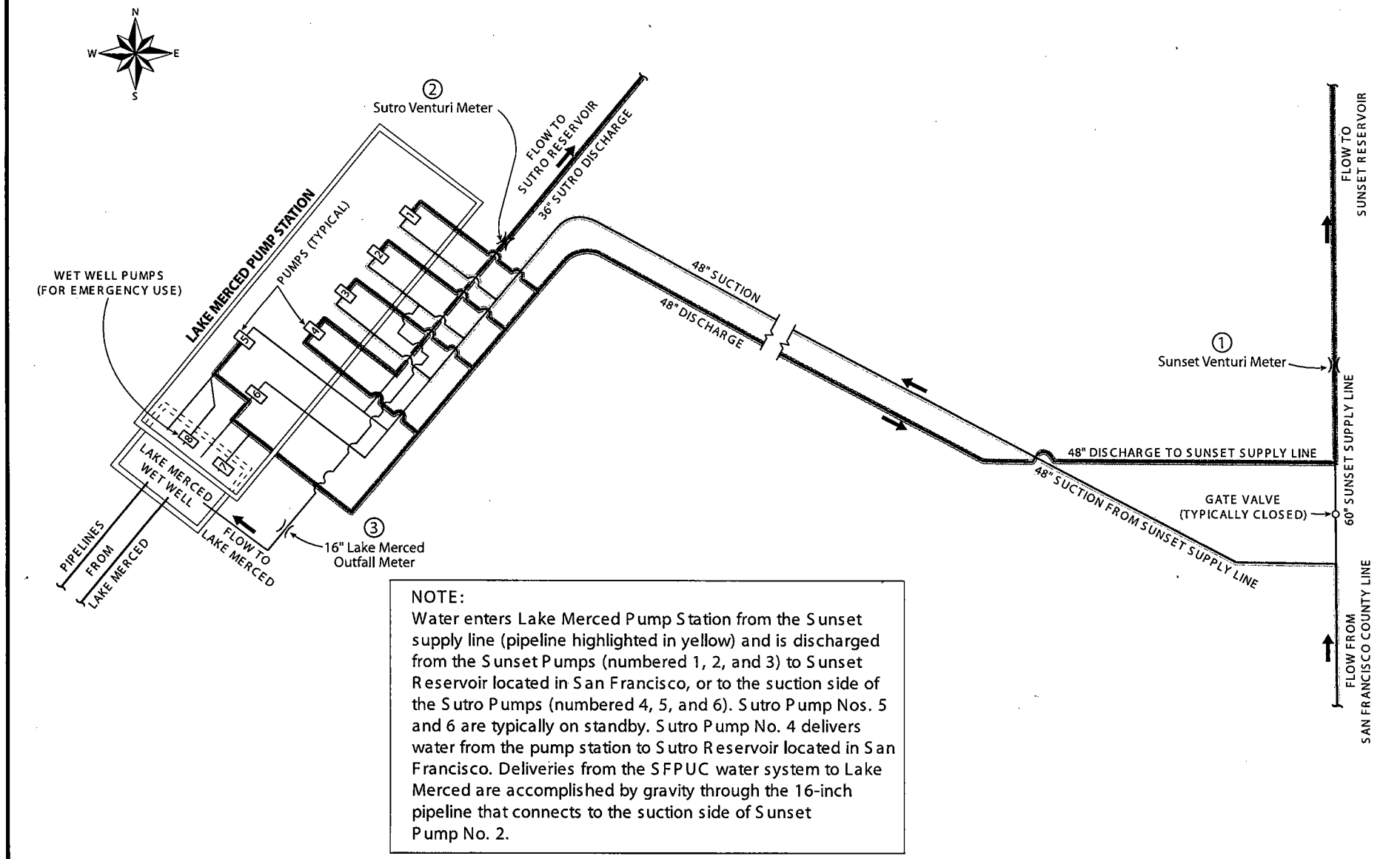


METER	PIPELINE	LOCATION
1	Sunset	Lake Merced Pump Station
2	Sutro	Lake Merced Pump Station
3	Lake Merced Outfall	Lake Merced Pump Station
4	San Andreas No. 2	Junipero Serra (Hwy. 280) South of Belle Ave.
5	Crystal Springs No. 1	PG&E Martin Service Center Yard
6	Crystal Springs No. 2	Tamasco Ct. South of Sunnydale Ave.
A	San Andreas No. 3 (Planned)	To be determined

METER	RESERVOIR	LOCATION
7	Sunset Reservoir	26th Avenue and Ortega
8	University Mound Reservoir	University Avenue and Bacon
9	Merced Manor Reservoir	23rd Avenue and Ocean

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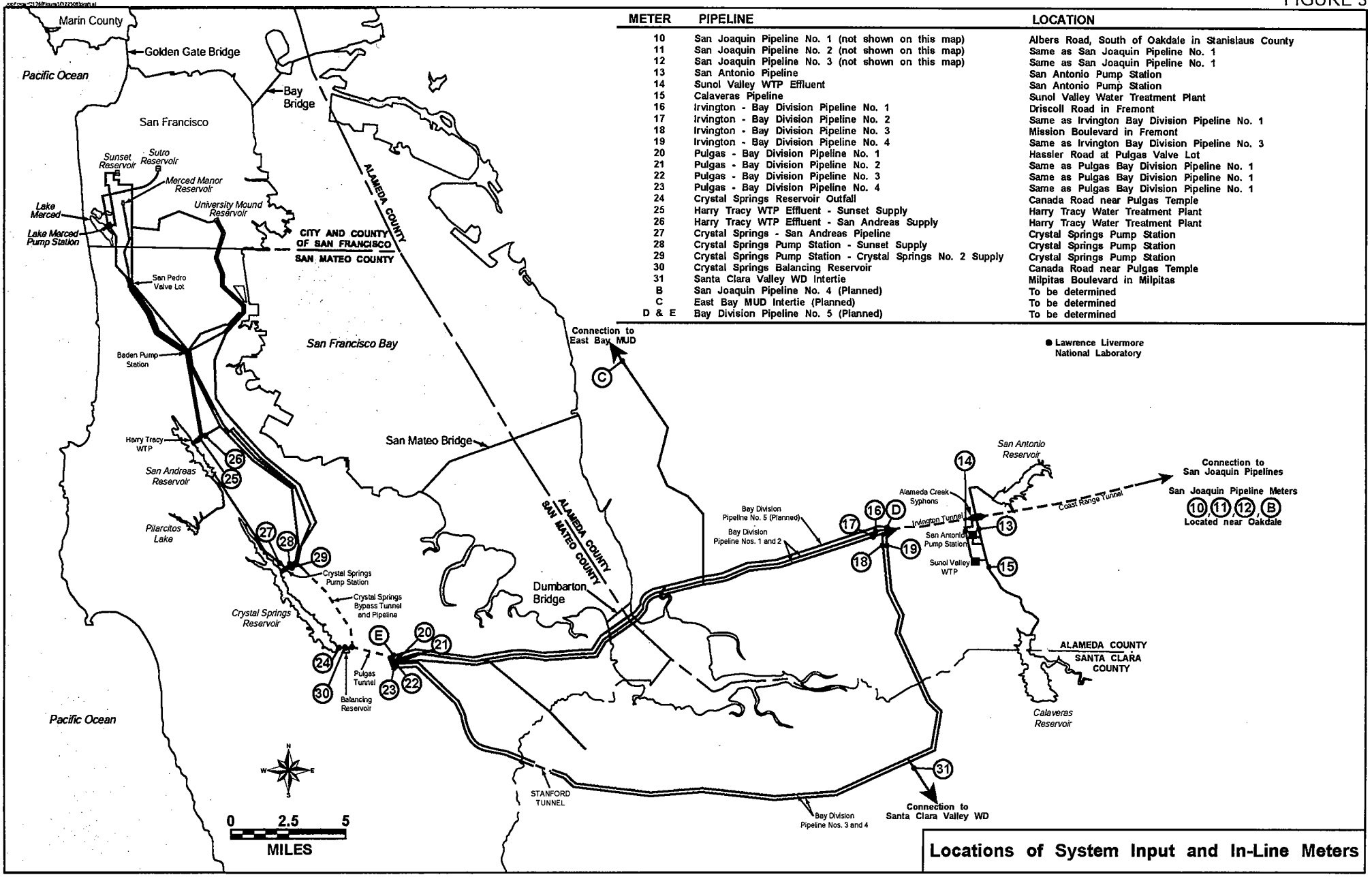


NOTE:
Water enters Lake Merced Pump Station from the Sunset supply line (pipeline highlighted in yellow) and is discharged from the Sunset Pumps (numbered 1, 2, and 3) to Sunset Reservoir located in San Francisco, or to the suction side of the Sutro Pumps (numbered 4, 5, and 6). Sutro Pump Nos. 5 and 6 are typically on standby. Sutro Pump No. 4 delivers water from the pump station to Sutro Reservoir located in San Francisco. Deliveries from the SFPUC water system to Lake Merced are accomplished by gravity through the 16-inch pipeline that connects to the suction side of Sunset Pump No. 2.

Generalized Schematic of Lake Merced Pump Station

FIGURE 2

FIGURE 3



METER	PIPELINE	LOCATION
10	San Joaquin Pipeline No. 1 (not shown on this map)	Albers Road, South of Oakdale in Stanislaus County
11	San Joaquin Pipeline No. 2 (not shown on this map)	Same as San Joaquin Pipeline No. 1
12	San Joaquin Pipeline No. 3 (not shown on this map)	Same as San Joaquin Pipeline No. 1
13	San Antonio Pipeline	San Antonio Pump Station
14	Sunol Valley WTP Effluent	San Antonio Pump Station
15	Calaveras Pipeline	Sunol Valley Water Treatment Plant
16	Irvington - Bay Division Pipeline No. 1	Driscoll Road in Fremont
17	Irvington - Bay Division Pipeline No. 2	Same as Irvington Bay Division Pipeline No. 1
18	Irvington - Bay Division Pipeline No. 3	Mission Boulevard in Fremont
19	Irvington - Bay Division Pipeline No. 4	Same as Irvington Bay Division Pipeline No. 3
20	Pulgas - Bay Division Pipeline No. 1	Hassler Road at Pulgas Valve Lot
21	Pulgas - Bay Division Pipeline No. 2	Same as Pulgas Bay Division Pipeline No. 1
22	Pulgas - Bay Division Pipeline No. 3	Same as Pulgas Bay Division Pipeline No. 1
23	Pulgas - Bay Division Pipeline No. 4	Same as Pulgas Bay Division Pipeline No. 1
24	Crystal Springs Reservoir Outfall	Canada Road near Pulgas Temple
25	Harry Tracy WTP Effluent - Sunset Supply	Harry Tracy Water Treatment Plant
26	Harry Tracy WTP Effluent - San Andreas Supply	Harry Tracy Water Treatment Plant
27	Crystal Springs - San Andreas Pipeline	Crystal Springs Pump Station
28	Crystal Springs Pump Station - Sunset Supply	Crystal Springs Pump Station
29	Crystal Springs Pump Station - Crystal Springs No. 2 Supply	Crystal Springs Pump Station
30	Crystal Springs Balancing Reservoir	Canada Road near Pulgas Temple
31	Santa Clara Valley WD Intertie	Milpitas Boulevard in Milpitas
B	San Joaquin Pipeline No. 4 (Planned)	To be determined
C	East Bay MUD Intertie (Planned)	To be determined
D & E	Bay Division Pipeline No. 5 (Planned)	To be determined

Locations of System Input and In-Line Meters

Table 1
Base Usage (mgd) and Allocation Rates

(1) Usage	(2) Definition	(3) 2004-05	(4) 2005-06	(5) 2006-07	(6) 2007-08	(7) 2008-09	(8) 2009-10
1. Gross S.F. Co. line	B.1	79.5	78.3	75.7			
2. Daly City portion	B.2	0.2	0.2	0.2			
3. Net S.F.	(1-2)	79.3	78.1	75.5			
4. Other suburban raw water	B.4	0.4	0.5	0.7			
5. Other suburban treated water	B.5	4.1	3.4	3.9			
6. Total other suburban	(4+5)	4.5	3.9	4.6			
7. Total City usage	(3+6)	83.8	82.0	80.1			
8. Total wholesale usage	B.8	167.4	164.4	175.8			
9. Total system usage	(7+8)	251.2	246.4	255.9			
10. Wholesale alloc. rate	(8/9)	66.63%	66.72%	68.70%			
11. City alloc. rate	(100%-10)	33.37%	33.28%	31.30%			
12a. HHWPD input (Oakdale)	B.12	194.7	202.6	227.3			
12b. Deliveries to LLNL	B.12	-0.4	-0.9	-0.9			
12c. HH to San Ant. Res.	B.12	-3.8	-1.8	-11.6			
12d. Sunol Valley WTP	B.12	28.5	29.4	17.6			
12e. Harry Tracy WTP	B.12	45.2	40.4	41.2			
12f. Raw water deliveries	B.12	0.4	0.4	0.7			
12g. Deliveries to Coastside Co. WD	B.12	1.8	1.6	2.1			
12h. Crys. Sprs. Bal. Res.	B.12	0.0	0.0	0.0			
12i. Spill to CS Res.	B.12	-19.9	-42.6	-37.1			
12j. Terminal Reservoirs	B.12	0.0	0.0	0.0			
12k. Other sources	B.12	0.0	1.9	3.8			
13. Total system input	B.13	246.5	231.0	243.1			
14. Jt. sys. loss red. fact.	(9/13)	1.0000	1.0000	1.0000			
15. Daly City red. factor	(3/1)	0.9975	0.9974	0.9974			
16. Total suburban	(6+8)	171.9	168.3	180.4			
17. Suburban red. factor	(8/16)	0.9736	0.9768	0.9745			
18. HHWPD Deliveries above Oakdale	B.18						
19. HH Reduction Factor	B.19	99.56%					

Table 2
Locations of SFPUC County-Line Meters and In-City Terminal Reservoirs

County-Line Meters

Meter	Pipeline	Location
1	Sunset	Lake Merced Pump Station
2	Sutro	Lake Merced Pump Station
3	Lake Merced Outfall	Lake Merced Pump Station
4	San Andreas No. 2	Junipero Serra (Hwy. 280) South of Belle Ave.
5	Crystal Springs No. 1	PG&E Martin Service Center Yard
6	Crystal Springs No. 2	Tamasco Ct. South of Sunnydale Ave.
A	San Andreas No. 3 (Planned)	To be determined

In-City Terminal Reservoirs

Meter	Reservoir	Location
7	Sunset Reservoir	26th Avenue and Ortega
8	University Mound Reservoir	University Avenue and Bacon
9	Merced Manor Reservoir	23rd Avenue and Ocean

Table 3
Locations of SFPUC System Input and In-Line Meters

Meter	Pipeline	Location
10	San Joaquin Pipeline No. 1	Albers Road, South of Oakdale in Stanislaus County
11	San Joaquin Pipeline No. 2	Same as San Joaquin Pipeline No. 1
12	San Joaquin Pipeline No. 3	Same as San Joaquin Pipeline No. 1
13	San Antonio Pipeline	San Antonio Pump Station
14	Sunol Valley WTP Effluent	San Antonio Pump Station
15	Calaveras Pipeline	Sunol Valley Water Treatment Plant
16	Irvington – Bay Division Pipeline No. 1	Driscoll Road in Fremont
17	Irvington – Bay Division Pipeline No. 2	Same as Irvington Bay Division Pipeline No.1
18	Irvington – Bay Division Pipeline No. 3	Mission Boulevard in Fremont
19	Irvington – Bay Division Pipeline No. 4	Same as Irvington Bay Division Pipeline No.3
20	Pulgas – Bay Division Pipeline No. 1	Hassler Road at Pulgas Valve Lot
21	Pulgas – Bay Division Pipeline No. 2	Same as Pulgas Bay Division Pipeline No. 1
22	Pulgas – Bay Division Pipeline No. 3	Same as Pulgas Bay Division Pipeline No. 1
23	Pulgas – Bay Division Pipeline No. 4	Same as Pulgas Bay Division Pipeline No. 1
24	Crystal Springs Reservoir Outfall	Canada Road near Pulgas Temple
25	Harry Tracy WTP Effluent – Sunset Supply	Harry Tracy Water Treatment Plant
26	Harry Tracy WTP Effluent – San Andreas Supply	Harry Tracy Water Treatment Plant
27	Crystal Springs – San Andreas Pipeline	Crystal Springs Pump Station
28	Crystal Springs Pump Station – Sunset Supply	Crystal Springs Pump Station
29	Crystal Springs Pump Station – Crystal Springs No. 2 Supply	Crystal Springs Pump Station
30	Crystal Springs Balancing Reservoir	Canada Road near Pulgas Temple
31	Santa Clara Valley WD Intertie	Milpitas Boulevard in Milpitas
B	San Joaquin Pipeline No. 4 (Planned)	To be determined
C	East Bay MUD Intertie (Planned)	To be determined
D&E	Bay Division Pipeline No. 5 (Planned)	To be determined

TABLE 4
SFPUC COUNTY-LINE METERS, IN-CITY TERMINAL RESERVOIRS, AND ASSOCIATED METERING EQUIPMENT

County-Line Meter	Meter Type	Location
1. **Sunset**	60" Venturi	Lake Merced Pump Station
Associated Metering Equipment:	• Rosemount D/P transmitter • Honeywell recorder • SCADA	
2. **Sutro**	36" Venturi	Lake Merced Pump Station
Associated Metering Equipment:	• Rosemount D/P transmitter • Honeywell recorder • SCADA	
3. **Lake Merced Outfall**	16" Mag. Meter	Lake Merced Pump Station
Associated Metering Equipment:	• Honeywell recorder • SCADA	
4. **San Andreas No. 2**	36" Venturi	Junipero Serra (Hwy. 280) south of Belle Avenue
Associated Metering Equipment:	• Yokogawa D/P transmitter • NLS display • AGM electronics • Honeywell recorder • SCADA	
5. **Crystal Springs No. 1**	44" Venturi	PG&E Martin Service Center Yard
Associated Metering Equipment:	• Yokogawa D/P transmitter • NLS display • AGM electronics • Honeywell recorder • SCADA	
6. **Crystal Springs No. 2**	60" Venturi	Tamasco Ct. south of Sunnydale Avenue
Associated Metering Equipment:	• Yokogawa D/P transmitter • NLS display • AGM electronics • SCADA	
In-City Terminal Reservoirs		
1. **Sunset**	Pressure Transducer	26th Avenue and Ortega
Associated Metering Equipment:	• Honeywell recorder • SCADA	
2. **Merced-Manor**	Pressure Transducer	23rd Avenue and Ocean
Associated Metering Equipment:	• Honeywell recorder • SCADA	
3. **University Mound**	Pressure Transducer	University Avenue and Bacon
Associated Metering Equipment:	• Honeywell recorder • SCADA	

TABLE 5
METER CALIBRATION AND MAINTENANCE FREQUENCY

METER/ EQUIPMENT	FREQUENCY			WORK TO BE PERFORMED (See Work Codes Listed Below)					
	Quarterly	Semi-Annual	Annual	CA	CL	FL	IN	LU	PT
Venturi Meters			X	X		X (1)	X (1)		X
Magnetic Meters		X		X (2)	X (2)		X (2)		
Yokagowa D/P Transmitters	X			X	X	X	X		
Rosemount D/P Transmitters	X			X	X	X	X		
Honeywell Recorders	X			X	X		X		
Water Level Sensors (Pressure Transducers)	X			X	X		X		
SCADA Electronics	X			X					
AGM Electronics	X			X					
NLS Digital Displays	X			X					
Electrostatic 24V DC Power Supplies			X				X (3)		
ASCO Solenoids			X		X		X (4)	X	

WORK CODES:
CA = CALIBRATE; CL = CLEAN; FL = FLUSH; IN = INSPECT; LU = LUBRICATE; PT = PITOT TUBE TEST.

NOTES:
(1) Inspection and flushing requirements for Venturi meters refer to the pressure tubing from the meter to the differential pressure transmitter.

(2) May calibrate using clamp-on meter where conditions allow. Inspection and cleaning requirements for magnetic meters refer to the sensors or probes that are inserted through the pipe wall.

(3) Adjust voltage if necessary.

(4) Replace rubber ware as needed.

ATTACHMENT K-1
WHOLESALE CUSTOMERS' SHARE OF NET BOOK VALUE OF EXISTING ASSETS
****PRELIMINARY - TO BE SUBSTITUTED WITH FINAL 6/30/09 VALUES****
(Section 5.03)

	Notes	Projected Value		
		Water	Hetch Hetchy	Total
Regional System Net Plant as of 6/30/08 (Actual)	1	$ 435,639,907	$ 66,135,724	
Less: Projected Depreciation on Regional Assets	2	$ (32,526,143)	$ (3,598,189)	
Plus: Projected FY 2008-09 Capital Additions	3	$ 62,771,153	$ -	
Projected Regional System Net Plant as of 6/30/09		$ 465,884,917	$ 62,537,535	
Plus: Projected Construction Work In Progress (CWIP) as of 6/30/09	4	$ 16,928,503	$ 5,807,023	
Projected Regional System Net Plant and CWIP as of 6/30/09		$ 482,813,420	$ 68,344,558	$ 551,157,978
Allocation Factor:	5	70.1%	64.2%	
Wholesale Share of Projected Regional System Net Plant as of 6/30/09		$ 326,585,327	$ 40,149,098	$ 366,734,424
Plus: Wholesale Share of Projected CWIP as of 6/30/09	6	$ 11,866,881	$ 3,728,109	$ 15,594,989
Wholesale Share of Projected Net Plant and CWIP as 6/30/09		$ 338,452,207	$ 43,877,206	$ 382,329,414
Interest Rate:		5.13%	5.13%	
Term (Yrs):		25	25	
Monthly Principal & Interest		$ 2,004,277	$ 259,836	$ 2,264,113
Annual Wholesale Revenue Requirement Amount		$ 24,051,326	$ 3,118,033	$ 27,169,359

Notes

1 FAACS 120A Report as of 6/30/08

2 SFPUC Estimate

3 SFPUC Estimate based on projects and amounts as follows:

	Water Assets
CUW358 Sunset Reservoir (North Basin)	$ 57,382,744
CUW 365 Cross Connection Controls	$ 3,679,415
CUW 394 Watershed Land Acqusition	$ 1,708,994
Total Additions	$ 62,771,153

4 CWIP based on balance as 6/30/08 plus YTD expenditures (see Attachment K-2)

5 Fixed allocation factors based on dollar weighted 5-year average of J-Table allocation factors (2003-04 through 2007-08)

6 Wholesale share CWIP based on balance as 6/30/08 plus YTD expenditures (see Attachment K-2)

ATTACHMENT K-2
WHOLESALE CUSTOMERS' SHARE OF THE BOOK VALUE OF REVENUE FUNDED CAPITAL EXPENDITURES
****PRELIMINARY - TO BE SUBSTITUTED WITH FINAL 6/30/09 VALUES****
(Section 5.03)

[1] Project No.	[2] Project Description	[3] Rate Class	[4] CWIP as of 6/30/08	[5] FY 2008-09 Expenditures	[6] Reduction for 02A Funding	[7] CWIP as 6/30/09	[8] Water Related CWIP	[9] Wholesale Share	
A. Water Enterprise									
1 Regional Projects									
CUW352	Alameda Creek Fishery	Joint	$ 2,007,607	$ 224,582	$ 2,232,189	$ -		$ -	
CUW353	Seismic Upgrade @ Hayward Fault	Joint	$ 3,129,234	$ 1,967,625	$ 5,096,859	$ -		$ -	
CUW354	LOWER CRYSTAL SPRINGS DAM-REV-SFWD	Joint	$ 7,046,944	$ 1,086,262	$ 8,133,206	$ -		$ -	
CUW355	STANDBY POWER FACILITIES	Joint	$ 3,715,276	$ 6,596,849	$ 10,312,125	$ -		$ -	
CUW357	Adit Leak Repairs	Joint	$ 783	$ 1,129	$ 1,912	$ -		$ -	
CUW359	Irvington Tunnel	Joint	$ 21,391,129	$ 5,176,713	$ 26,567,842	$ -		$ -	
CUW359	Irvington Tunnel	Joint	$ 7,837,176	$ -	$ 7,837,176	$ -		$ -	
CUW361		Joint	$ 368,057	$ 1,383,959	$ 1,752,016	$ -		$ -	
CUW361		Joint	$ 1,255,545	$ -	$ 1,255,545	$ -		$ -	
CUW361	Pulgas Balancing Reservoir	Joint	$ 1,248,002	$ -	$ 1,248,002	$ -		$ -	
CUW361		Joint	$ 570,179	$ -	$ 570,179	$ -		$ -	
CUW361		Joint	$ 712,921	$ -	$ 712,921	$ -		$ -	
CUW363	SCADA Phase II	Joint	$ 1,335,371	$ 1,738,045	$ 3,073,416	$ -		$ -	
CUW363	SCADA Phase II	Joint	$ 1,062,050	$ -	$ 1,062,050	$ -		$ -	
CUW365	Cross Connection Control	Joint	$ 3,635,172	$ 547,801	$ 4,182,973	$ -		$ -	Capitalized in FY 2008-09
CUW367	HTWTP LT Impr	Joint	$ 8,011,348	$ 2,479,731	$ 10,491,079	$ -		$ -	
CUW368		Joint	$ 23,640,601	$ -	$ 23,640,601	$ -		$ -	
CUW368	BDPL Hydraulic Capacity	Joint	$ 17,556,905	$ 4,200,442	$ 21,757,347	$ -		$ -	
CUW368		Joint	$ 2,579,847	$ -	$ 2,579,847	$ -		$ -	
CUW370	Pipeline Readiness	Joint	$ 5,320,934	$ 328,070	$ 5,649,004	$ -		$ -	
CUW371	CSPS and Pipeline	Joint	$ 11,420,770	$ 3,872,779	$ 15,293,549	$ -		$ -	
CUW372	University Mound (N)	Joint	$ 4,624,981	$ 1,068,147	$ 5,693,128	$ -		$ -	
CUW373	SJPL	Joint	$ 19,479,341	$ 6,023,849	$ 25,503,190	$ -		$ -	
CUW373	SJPL	Joint	$ 7,199,051	$ -	$ 7,199,051	$ -		$ -	
CUW374	Calaveras Dam	Joint	$ 31,171,669	$ 4,314,430	$ 35,486,099	$ -		$ -	
CUW374	Calaveras Dam	Joint	$ 2,366,343	$ -	$ 2,366,343	$ -		$ -	
CUW378	CSPL #2	Joint	$ 7,453,098	$ 913,369	$ 8,366,467	$ -		$ -	
CUW379	SAPL #3	Joint	$ 5,728,934	$ 588,346	$ 6,317,280	$ -		$ -	
CUW380	BDPK #3&4 Crossovers	Joint	$ 3,855,357	$ 1,083,888	$ 4,939,245	$ -		$ -	
CUW381		Joint	$ 5,450,995	$ -	$ 5,450,995	$ -		$ -	
CUW381	SVWTP Expansion	Joint	$ 53,222	$ 3,090,520	$ 3,143,742	$ -		$ -	
CUW381		Joint	$ 97,373	$ -	$ 97,373	$ -		$ -	
CUW382	SVWTP Treated Water Reservoir	Joint	$ 5,799,505	$ 575	$ 5,800,080	$ -		$ -	
CUW384	Tesla	Joint	$ 6,102,621	$ 7,444,942	$ 13,547,563	$ -		$ -	
CUW386	SAPS X-CONNECT & PUMP IMP 96A UEB	Joint	$ 1,374,491	$ 971,625	$ 2,346,116	$ -		$ -	
CUW388	PEIR	Joint	$ 896,476	$ 1,641,717	$ 2,538,193	$ -		$ -	
CUW388	PEIR	Joint	$ 1,331,676	$ -	$ 1,331,676	$ -		$ -	
CUW390	Desalination Pilot	Joint	$ 175,165	$ -	$ 175,165	$ -		$ -	
CUW391	Baden/San Pedro Valve Lots	Joint	$ 3,964,642	$ 948,589	$ 4,913,231	$ -		$ -	
CUW392	Program Management	Joint	$ 2,452,297	$ 5,081,444	$ 7,533,741	$ -		$ -	
CUW393	BDPL #4 Condition Assessment	Joint	$ 25,071	$ 294,634	$ 319,705	$ -		$ -	
CUW394	Watershed Enviroment Improvement	Joint	$ 142,924	$ 96,027	$ 238,951	$ -		$ -	Capitalized in FY 2008-09
CUW101	SAN ANDREAS PLANT EXPANSION #1	Joint	$ 182	$ 96,027		$ 96,209		$ 67,443	
CUW111	LOWER CRYSTAL SPRINGS DAM-REV-SFWD	Joint	$ 40,436	$ -		$ 40,436		$ 28,346	
CUW151	Baden PS	Joint	$ 921	$ 26,760		$ 27,681		$ 19,404	
CUW161	Water Treatment Facilities	Joint	$ 75,801	$ 605		$ 76,406		$ 53,561	
CUW178	SAPS X-CONNECT & PUMP IMP 96A UEB	Joint	$ 104,902	$ -		$ 104,902		$ 73,536	
CUW202		Joint	$ 50,808	$ -		$ 50,808		$ 35,616	
CUW202	Replace PCCP	Joint	$ 285,003	$ 64,256		$ 349,259		$ 244,831	
CUW202		Joint	$ 2,365	$ -		$ 2,365		$ 1,658	
CUW127	SCADA	Joint	$ 50,029	$ 2,481,274		$ 2,531,303		$ 1,774,443	
CUW356	New Crystal Springs Bypass Tunnel	Joint	$ 13,992,264	$ 5,560,862	$ 16,028,397	$ 3,524,729		$ 2,470,835	
CUW358	Sunset (N)	Joint	$ 52,494,764	$ 4,887,980	$ 55,806,081	$ 1,576,663		$ 1,105,241	Capitalized in FY 2008-09
CUW387	Tesla Portal Disinfection	Joint	$ 2,377,262	$ (1,996)	$ 1,223,945	$ 1,151,321		$ 807,076	
CUW135		Joint	$ 45,413	$ -		$ 45,413		$ 31,835	
CUW135	New Lines and Bypass Valves	Joint	$ 153,983	$ 620,156		$ 774,139		$ 542,671	
CUW135		Joint	$ 8,860	$ -		$ 8,860		$ 6,211	
CUW143		Joint	$ 5,656	$ -		$ 5,656		$ 3,965	
CUW143	HH Water Treatment Plan	Joint	$ 709,972	$ 8,817		$ 718,789		$ 503,871	
CUW143		Joint	$ 96,292	$ -		$ 96,292		$ 67,501	
CUW186	SVWTP IMPROVEMENT PROJECT-CPB-SFWD	Joint	$ 3,604	$ -		$ 3,604		$ 2,526	
CUW206		Joint	$ 4,365	$ -		$ 4,365		$ 3,060	
CUW206	Tesla Portal/Thomas Shaft Emergency Disinfection	Joint	$ 283,620	$ 5,665		$ 289,285		$ 202,789	
CUW206		Joint	$ 227,004	$ -		$ 227,004		$ 159,130	
CUW231	Millbrae Labs	Joint	$ 81,856	$ 34,685		$ 116,541		$ 81,695	
CUW236	TELSA/SJVH WQ MONITORING IMPR	Joint	$ 152,963	$ -		$ 152,963		$ 107,227	
CUW366		Joint	$ 16,523	$ -		$ 16,523		$ 11,583	
CUW366	HTWTP ST Improvements	Joint	$ 1,398,798	$ 5,732,626	$ 7,131,424	$ -		$ -	
CUW366		Joint	$ 1,452,901	$ -	$ 1,452,901	$ -		$ -	
CUW120	WATER QUALITY PLANNING STUDY	Joint	$ 577	$ -		$ 577		$ 404	
CUW164	WATER VULNERABILITY STUDY-UEB	Joint	$ 479	$ -		$ 479		$ 336	
CUW181	STANDBY POWER FACILITIES	Joint	$ 5,905	$ -		$ 5,905		$ 4,139	
CUW210	Millbrae Administrative Bldg Remodel	Joint	$ 7,803	$ 321,553		$ 329,356		$ 230,879	
CUW220	Calaveras Dam Evaluation	Joint	$ 308,971	$ -		$ 308,971		$ 216,589	
CUW227	Watershed Facilities and Fencing	Joint	$ 190,552	$ 206,448		$ 397,000		$ 278,297	
CUW228	Watershed Roads	Joint	$ 358,434	$ 85,337		$ 443,771		$ 311,083	
CUW232	Crystal Springs Dam Discharge	Joint	$ 363,823	$ -		$ 363,823		$ 255,040	
CUW242	Demolition of Unsafe Structures	Joint	$ 311,548	$ 22,741		$ 334,289		$ 234,337	
CUW242	Demolition of Unsafe Structures	Joint	$ 315	$ -		$ 315		$ 221	
CUW261	Regional R&R - Storage	Joint	$ 275,694	$ 277,958		$ 553,652		$ 388,110	
CUW262	Regional R&R - Treatement	Joint	$ 1,236,895	$ 409,282		$ 1,646,177		$ 1,153,970	
CUW262	Regional R&R - Treatement	Joint	$ 277,383	$ -		$ 277,383		$ 194,445	

ATTACHMENT K-2
WHOLESALE CUSTOMERS' SHARE OF THE BOOK VALUE OF REVENUE FUNDED CAPITAL EXPENDITURES
****PRELIMINARY - TO BE SUBSTITUTED WITH FINAL 6/30/09 VALUES****
(Section 5.03)

[1] Project No.	[2] Project Description	[3] Rate Class	[4] CWIP as of 6/30/08	[5] FY 2008-09 Expenditures	[6] Reduction for 02A Funding	[7] CWIP as 6/30/09	[8] Water Related CWIP	[9] Wholesale Share
CUW263	Regional R&R - Transmission	Joint	$ 768,422	$ 797,659		$ 1,566,081		$ 1,097,823
CUW263		Joint	$ 1,224,094	$ -		$ 1,224,094		$ 858,090
CUW360	PLANNING - WSTD Sunol Quarry Reservoirs	Joint	$ 2,513	$ -		$ 2,513		$ 1,762
CUW934	BOA/BAW/13/F2/SFWD-CONT PROJ-OPER FD	Joint	$ 59,479	$ (2,210)	$ 998,005	$ (940,736)		$ (659,456)
	TOTAL REGIONAL WATER PROJECTS		$ 313,100,517	$ 84,802,574	$379,397,925	$ 18,505,166		$ 12,972,121
	Less Projects to be Capitalized in FY 2008-09					$ 1,576,663		$ 1,105,241
	ADJUSTED TOTAL REGIONAL WATER PROJECTS					$ 16,928,503		$ 11,866,881
2	Wholesale Direct							
	None							
B.	Hetch Hetchy Water & Power							
CUH703	Priest Reservoir By-pass	Joint	-	47,164		$ 47,164	$ 21,224	$ 13,626
CUH762	SJPL Reparis	Water	53,616	255,011		$ 308,627	$ 308,627	$ 198,139
CUH766	HH Security Improvements	Joint	164,478	261,601		$ 426,079	$ 191,736	$ 123,094
CUH767	Power Transformers	Power	-	-		$ -	$ -	$ -
CUH803	Street Lights	Power	-	40,506		$ 40,506	$ -	$ -
CUH804	HH Roads	Joint	-	341,240		$ 341,240	$ 153,558	$ 98,584
CUH829	HH SCADA	Joint	-	-		$ -	$ -	$ -
CUH842	Moccasin Cottages Renovations	Joint	-	-		$ -	$ -	$ -
CUH846	New Moccasin Penstock	Power	543,073	-		$ 543,073	$ -	$ -
CUH851	Turbine Generator Renovations	Power	111,755	926,254		$ 1,038,009	$ -	$ -
CUH868	Moccasin Energy Absorber	Power	-	-		$ -	$ -	$ -
CUH876	Moccasin Phone System	Joint	-	15,677		$ 15,677	$ 7,055	$ 4,529
CUH878	O'Shaugnessy Discharge/Toulumne River Channel Impr.	Joint	31,953	168,076		$ 200,029	$ 90,013	$ 57,788
CUH891	Metering Muni Load	Power	18	4,361		$ 4,379	$ -	$ -
CUH893	Cherry/Eleanor Pump Upgrade	Power	-	17,012		$ 17,012	$ -	$ -
CUH896	Street Lights	Power	9,294	568,794		$ 578,088	$ -	$ -
CUH899	Canyon Tunnel Penstock	Power	6,210	21,804		$ 28,014	$ -	$ -
CUH915	UG Assessment/Hunters Point	Power	961,755	1,668,663		$ 2,630,418	$ -	$ -
CUH926	Pipe Purchase	Water	-	13,667		$ 13,667	$ 13,667	$ 8,774
CUH931	Microwave Replacement	Joint	3,157,491	156,270		$ 3,313,761	$ 1,491,192	$ 957,346
CUH932	HH SCADA	Joint	-	-		$ -	$ -	$ -
CUH825	Distribution System	Power	446,419	109,797		$ 556,216	$ -	$ -
CUH941	HHP SCADA Security & Control, East/O'Shaugnessy	Joint	1,433,974	246,948		$ 1,680,922	$ 756,415	$ 485,618
CUH942	O'Shaugnessy Dam Discharge Needle Valves	Joint	-	-		$ -	$ -	$ -
CUH943	Renewable Energy	Power	-	-		$ -	$ -	$ -
CUH945	SJPL Crossovers	Water	-	-		$ -	$ -	$ -
CUH946	Facility Maintenance	Joint	-	239		$ 239	$ 108	$ 69
CUH947	Sustainable Energy Account	Power	441,226	1,838,396		$ 2,279,622	$ -	$ -
CUH948	Facility Maintenance - Transmission Lines	Power	70,631	101,295		$ 171,926	$ -	$ -
CUH949	POW Maintenance	Power	-	-		$ -	$ -	$ -
CUH950	HPH/KPH/MPH	Power	1,236,853	1,167,621		$ 2,404,474	$ -	$ -
CUH955	Solar Monitoring	Power	222	-		$ 222	$ -	$ -
CUH956	Facility Maintenance - Gate Valves	Water	275,213	-		$ 275,213	$ 275,213	$ 176,687
CUH957	Moccasin Corrison Control	Joint	48,023	110,986		$ 159,009	$ 71,554	$ 45,938
CUH958	Generation Metering	Power	-	18,811		$ 18,811	$ -	$ -
CUH959	Moccasin Reservoir Water Quality	Water	109,379	-		$ 109,379	$ 109,379	$ 70,221
CUH960	Solar Power Project	Power	6,480	(5,333)		$ 1,147	$ -	$ -
CUH861	MECA Solar	Power	-	26,369		$ 26,369	$ -	$ -
CUH962	SF Electrical Reliability	Power	9,672,565	2,653		$ 9,675,218	$ -	$ -
CUH964	Watershed Lan Purchase	Water	-	75,756		$ 75,756	$ 75,756	$ 48,635
CUH966	MECA - Demand Reduction	Power	-	-		$ -	$ -	$ -
CUH969	SFIA SCADA	Power	-	-		$ -	$ -	$ -
CUH971	Neward - CCSF Tranmission Project	Power	235,120	54,602		$ 289,722	$ -	$ -
CUH972	Load Metering	Power	145,039	1,274		$ 146,313	$ -	$ -
CUH973	Distribution Assessment	Power	-	-		$ -	$ -	$ -
CUH975	Hetch Hetchy Water R&R	Power	-	130,100		$ 130,100	$ -	$ -
CUH975	Hetch Hetchy Water R&R	Water	52,613	516,524		$ 569,137	$ 569,137	$ 365,386
CUH975	Hetch Hetchy Water R&R	Joint	999,854	887,864		$ 1,887,718	$ 849,473	$ 545,362
CUH976	KPH Rewind	Power	1,053,295	1,417,914		$ 2,471,209	$ -	$ -
CUH977	Facilities Maintenance - Water	Joint	770,839	1,049,878		$ 1,820,717	$ 819,323	$ 526,005
CUH978	Community Choice Aggregation	Power	5,571	101,075		$ 106,646	$ -	$ -
CUH979	Hunters Point Distribution	Power	1,926,977	532,011		$ 2,458,988	$ -	$ -
CUH981	Shore Power for Cruise Ships	Power	2,690	-		$ 2,690	$ -	$ -
CUH986	SEA - Energy Efficiency	Power	15,262	-		$ 15,262	$ -	$ -
CUW687	525 Golden Gate	Joint	-	4,105		$ 4,105	$ 1,847	$ 1,186
IUH004	Auto Maintenance	Joint	-	3,882		$ 3,882	$ 1,747	$ 1,122
PUH501	SF Environment Energy/Green Power	Power	-	66,107		$ 66,107	$ -	$ -
PYEAES	Youth Employment	Joint	-	-		$ -	$ -	$ -
	TOTAL HHWP PROJECTS		23,987,888	12,964,974	-	36,952,862	5,807,023	$ 3,728,109
C	TOTAL COMBINED WATER AND HHWP		$ 337,088,405	$ 97,767,548	$379,397,925	$ 55,458,028		**$ 15,594,990**

Notes
1. 6/30/08 CWIP per FAMIS
2. FY 2008-09 Expenditures posted through 3/20/09 per FAMIS
3. Wholesale share of CWIP 70.1% (see Note 5 Attachment K-1)
4. Water Related HHWP CWIP includes 100% of Water and 45% of Joint
5. Wholesale share of CWIP 64.2% (see Note 5 Attachment K-1)
6. Fund 2A expenditures are funded by Series 2006A bond proceeds, proceeds of commercial paper redeemed from 2006A proceeds and earnings on such proceeds, as applicable.

ATTACHMENT K-3
25 YEAR PAYOFF SCHEDULE FOR EXISITING RATE BASE
WATER ENTERPRISE REGIONAL ASSETS AND ONE DIRECT WHOLESALE ASSET
****PRELIMINARY - TO BE SUBSTITUTED WITH FINAL 6/30/09 VALUES****
(Section 5.03)

	Water Assets
6/30/09 Wholesale Share of Net Plant & CWIP (Attachment K-1)	338,452,207
Interest Rate:	5.13%
Term:	25
Monthly Principal & Interest Calculation:	2,004,277
Annual Wholesale Revenue Requirement:	24,051,326

Fiscal Yr Ending	Principal	Interest	**Annual Payment (Wtr)**	Year End Balance
Jun-10	6,848,259	17,203,067	**24,051,326**	331,603,948
Jun-11	7,207,954	16,843,372	**24,051,326**	324,395,994
Jun-12	7,586,541	16,464,785	**24,051,326**	316,809,453
Jun-13	7,985,013	16,066,313	**24,051,326**	308,824,439
Jun-14	8,404,415	15,646,911	**24,051,326**	300,420,024
Jun-15	8,845,844	15,205,482	**24,051,326**	291,574,180
Jun-16	9,310,459	14,740,867	**24,051,326**	282,263,721
Jun-17	9,799,478	14,251,848	**24,051,326**	272,464,243
Jun-18	10,314,181	13,737,145	**24,051,326**	262,150,062
Jun-19	10,855,919	13,195,407	**24,051,326**	251,294,143
Jun-20	11,426,110	12,625,216	**24,051,326**	239,868,033
Jun-21	12,026,250	12,025,076	**24,051,326**	227,841,784
Jun-22	12,657,911	11,393,415	**24,051,326**	215,183,873
Jun-23	13,322,749	10,728,577	**24,051,326**	201,861,123
Jun-24	14,022,507	10,028,819	**24,051,326**	187,838,616
Jun-25	14,759,019	9,292,307	**24,051,326**	173,079,597
Jun-26	15,534,215	8,517,111	**24,051,326**	157,545,382
Jun-27	16,350,127	7,701,199	**24,051,326**	141,195,254
Jun-28	17,208,894	6,842,432	**24,051,326**	123,986,361
Jun-29	18,112,766	5,938,560	**24,051,326**	105,873,594
Jun-30	19,064,113	4,987,213	**24,051,326**	86,809,482
Jun-31	20,065,428	3,985,898	**24,051,326**	66,744,054
Jun-32	21,119,335	2,931,991	**24,051,326**	45,624,719
Jun-33	22,228,597	1,822,729	**24,051,326**	23,396,122
Jun-34	23,396,122	655,204	**24,051,326**	0
Totals:	338,452,207	262,830,943	601,283,150	

ATTACHMENT K-4
25 YEAR PAYOFF SCHEDULE FOR EXISTING RATE BASE
HETCH HETCHY WATER ASSETS AND WATER-RELATED PORTION OF JOINT ASSETS
****PRELIMINARY - TO BE SUBSTITUTED WITH FINAL 6/30/09 VALUES****
(Section 5.03)

	Hetch Hetchy
6/30/09 Wholesale Share of Net Plant & CWIP (Attachment K-1)	43,877,206
Interest Rate:	5.13%
Term:	25
Monthly Principal & Interest Calculation:	259,836
Annual Wholesale Revenue Requirement:	3,118,033

Fiscal Yr Ending	Principal	Interest	**Annual Payment (HH)**	Year End Balance
Jun-10	887,814	2,230,219	**3,118,033**	42,989,393
Jun-11	934,445	2,183,588	**3,118,033**	42,054,948
Jun-12	983,525	2,134,507	**3,118,033**	41,071,423
Jun-13	1,035,183	2,082,849	**3,118,033**	40,036,239
Jun-14	1,089,555	2,028,478	**3,118,033**	38,946,685
Jun-15	1,146,782	1,971,250	**3,118,033**	37,799,903
Jun-16	1,207,015	1,911,017	**3,118,033**	36,592,887
Jun-17	1,270,412	1,847,621	**3,118,033**	35,322,475
Jun-18	1,337,138	1,780,894	**3,118,033**	33,985,337
Jun-19	1,407,370	1,710,663	**3,118,033**	32,577,967
Jun-20	1,481,290	1,636,743	**3,118,033**	31,096,678
Jun-21	1,559,092	1,558,940	**3,118,033**	29,537,585
Jun-22	1,640,981	1,477,051	**3,118,033**	27,896,604
Jun-23	1,727,172	1,390,861	**3,118,033**	26,169,432
Jun-24	1,817,889	1,300,144	**3,118,033**	24,351,544
Jun-25	1,913,371	1,204,662	**3,118,033**	22,438,173
Jun-26	2,013,868	1,104,165	**3,118,033**	20,424,305
Jun-27	2,119,643	998,389	**3,118,033**	18,304,662
Jun-28	2,230,974	887,058	**3,118,033**	16,073,688
Jun-29	2,348,153	769,880	**3,118,033**	13,725,535
Jun-30	2,471,486	646,546	**3,118,033**	11,254,048
Jun-31	2,601,298	516,735	**3,118,033**	8,652,751
Jun-32	2,737,927	380,106	**3,118,033**	5,914,824
Jun-33	2,881,733	236,300	**3,118,033**	3,033,091
Jun-34	3,033,091	84,941	**3,118,033**	0
	43,877,206	34,073,607	77,950,813	

ATTACHMENT K-5
UNEXPENDED APPROPRIATIONS FOR REVENUE-FUNDED REGIONAL ASSETS
CONSTRUCTION WORK IN PROGRESS AS OF MARCH 30, 2009
(Section 5.04)

Project	Project Title	Fund Type	Subfund	Classification	Appropriation	YTD Expenditures	PTD Expenditures	Encumbrances	Available Balances	Notes
				Water Assets						
CUW257	WATERSHED PROTECTION	5W	AAAACP	REGIONAL	1,448,720	29,653	413,529	141,643	893,548	
CUW250	WATERSHED TRAILS&RECREATION IMPRO	5W	AAAACP	REGIONAL	387,639	9,431	112,689	6,675	268,275	
CUW261	REGIONAL WATER STORAGE RNR -BUDGE	5W	AAAACP	REGIONAL	1,750,000	250,970	526,664	26,687	1,196,648	Annual R&R
CUW242	DEMOLITION UNSAFE STRUCTURES	5W	AAAACP	REGIONAL	1,000,000	22,647	407,820	21,524	570,656	
CUW263	CONVEYANCE/TRANSMISSION - BUDGET	5W	AAAACP	REGIONAL	7,825,000	763,603	3,378,543	125,990	4,320,466	Annual R&R
CUW264	WATERSHED ROADS - BUDGET	5W	AAAACP	REGIONAL	3,000,000	77,074	1,391,500	162,401	1,446,099	Annual R&R
CUW262	TREATMENT FACS/WQ IMPROVE-BUDGET	5W	AAAACP	REGIONAL	4,801,000	399,073	2,704,204	349,016	1,747,780	Annual R&R
CUW168	ALAMEDA CREEK FISH RELEASE	5W	AAAACP	REGIONAL	1,537,398	46,624	1,040,919	152,647	343,832	
CUW231	MILLBRAE LAB CAPITAL IMPROVEMENTS	5W	AAAACP	REGIONAL	770,000	19,119	532,135	0	237,865	
CUW227	WATERSHED FENCES/FACILITES	5W	AAAACP	REGIONAL	3,000,000	206,222	2,223,776	581,926	194,298	
CUW253	FACILITIES SECURITY PROJECT	5W	AAAACP	REGIONAL	5,300,000	73,048	4,146,944	113,124	1,039,931	
CUW210	MILLBRAE ADMIN BLDG INTERIM REMODEL	5W	AAAACP	REGIONAL	2,407,700	284,902	1,935,204	160	472,337	
CUW228	WATERSHED ROADS RECONSTRUCTION	5W	AAAACP	REGIONAL	5,170,000	82,992	4,413,061	18,598	738,340	
CUW202	SAN ANTONIO PIPELINE EMERGENCY REPA	5W	AAAACP	REGIONAL	1,400,000	6,012	1,269,190	61,727	69,083	
CUW148	ENVIRONMENTAL & REGULATORY COMP	5W	AAAACP	REGIONAL	3,241,279	0	3,014,995	184,774	41,510	
CUW135	NEW LINE & BYPASS VALVES	5W	AAAACP	REGIONAL	4,829,680	2,103	4,689,067	0	140,613	
CUW143	HETCH HETCHY WATER TREATMENT PLAN	5W	AAAACP	REGIONAL	18,821,529	0	18,452,053	47,947	321,529	
CUW161	TREATMENT FACILITIES IMPROVEMENTS	5W	AAAACP	REGIONAL	15,028,319	334	14,747,873	0	280,446	
CUW241	FACILITIES MAINT SUPPORT STRUCTURES	5W	AAAACP	REGIONAL	5,000,000	8,390	4,988,882	0	11,118	
CUW392	PROGRAM MANAGEMENT SERVICES - WSIF	5W	AAAACP	LOCAL/REGIONAL	1,837,000	(98,519)	751,659	71,973	1,013,368	
CUW127	INST SCADA SYSTEM	5W	AAAACP	LOCAL/REGIONAL	13,156,681	2,481,274	8,653,641	0	4,503,040	
CUW710	OCIP PROJECT CONTROL	5W	AAAACP	LOCAL/REGIONAL	2,497,881	235,706	2,496,959	0	922	
	TOTAL ALL PROJECTS				104,209,826	4,900,661	82,291,307	2,066,813	19,851,706	
	LOCAL PROJECTS			LOCAL	0	0	0	0	0	
	JOINT LOCAL AND REGIONAL PROJECTS			LOCAL/REGIONAL	17,491,562	2,618,462	11,902,259	71,973	5,517,330	
	REGIONAL PROJECTS			REGIONAL	86,718,264	2,282,199	70,389,048	1,994,840	14,334,376	
	TOTAL ALL PROJECTS				104,209,826	4,900,661	82,291,307	2,066,813	19,851,706	
				Hetchy Hetchy Assets						
CUH975	WATER INFRASTRUCTURE - BUDGET	5T	AAAACP	WATER	9,000,000	1,534,488	2,806,592	3,565,023	2,628,385	
CUH964	WATERSHED PROPERTY PURCHASES	5T	AAAACP	WATER	800,000	75,756	454,756	0	345,244	
CUH957	FAC MAINTENANCE-WATER TRANSPORTAT	5T	AAAACP	WATER	3,400,000	110,986	2,885,394	209,138	305,469	
CUH703	PRIEST RESERVOIR DIVERSION CHANNEL	5T	AAAACP	WATER	21,210,344	47,164	20,166,993	0	1,043,351	
CUH926	PIPELINE PURCHASE REPLACEMENT PIPE	5T	AAAACP	WATER	159,860	13,667	157,489	0	2,371	
CUH762	SAN JOAQUIN PIPELINE REPAIRS	5T	AAAACP	WATER	41,469,206	255,011	41,215,761	134,652	118,792	
CUW687	525 GOLDEN GATE	5T	AAAACP	JOINT	280,600	4,105	26,437	0	254,163	
CUH977	FACILITIES MAINTENANCE - BUDGET	5T	AAAACP	JOINT	9,300,000	1,049,878	3,578,478	803,231	4,918,290	
CUH931	HH MICROWAVE REPLACEMENT	5T	AAAACP	JOINT	4,767,000	156,270	3,313,761	1,227,242	225,997	
CUH941	HH SCADA SECURITY & CONTROL, EAST	5T	AAAACP	JOINT	2,068,180	246,948	1,680,922	256,198	131,060	
CUH804	HETCH-HETCHY ROADS REBUILDING	5T	AAAACP	JOINT	4,175,027	341,240	3,544,483	113,314	517,230	
CUH766	HETCHY FACILITIES SECURITY IMPROV.	5T	AAAACP	JOINT	2,086,692	261,601	1,960,386	62,470	63,836	
CUH876	MOCCASIN PHONE SYSTEM	5T	AAAACP	JOINT	1,610,000	15,677	1,528,780	0	81,220	
CUH878	O'SHAUGENESSY DIS.REPAIRS	5T	AAAACP	JOINT	7,179,009	33,750	7,101,644	9,297	68,068	
CUH810	VARIOUS OLD JOB	5T	AAAACP	JOINT	7,613,638	18,690	7,538,034	1,561	74,044	
CUH946	FAC MAINTENANCE-SUPPORT STRUCTURE	5T	AAAACP	JOINT	2,281,454	239	2,273,485	0	7,969	
CUH949	RIGHT OF WAY MAINTENANCE	5T	AAAACP	JOINT	815,000	0	814,208	166	626	
	TOTAL ALL PROJECTS				118,216,010	4,165,470	101,047,602	6,382,292	10,786,117	
	POWER PROJECTS			POWER	0	0	0	0	0	
	WATER PROJECTS			WATER	76,039,410	2,037,072	67,686,985	3,908,812	4,443,613	
	JOINT PROJECTS			JOINT	42,176,600	2,128,397	33,360,617	2,473,480	6,342,504	
	TOTAL ALL PROJECTS				118,216,010	4,165,470	101,047,602	6,382,292	10,786,117	

ATTACHMENT L-1
IDENTIFICATION OF WSIP PROJECTS AS REGIONAL/RETAIL
(Section 5.04)

Project Number		Project Description
REGIONAL		
		San Joaquin Region
CUW373	Regional	San Joaquin Pipeline System Rehabilitation
CUW384	Regional	Tesla Advance Disinfection
CUW387	Regional	Tesla Portal Disinfection
		Sunol Valley Region
CUW352	Regional	Alameda Creek Fishery Enhancement
CUW355	Regional	Stand-by Power - Various Locations
CUW359	Regional	New Irvington Tunnel/Alameda Siphon No. 4
CUW370	Regional	Pipeline Readiness Improvements
CUW374	Regional	Calaveras Dam Replacement
CUW381	Regional	SVWTP 40 mgd Addition
CUW382	Regional	SVWTP Finished Water Reservoir
CUW386	Regional	San Antonio Pump Station Upgrade
		Bay Division Region
CUW353	Regional	Seismic Upgrade BDPL 3 & 4
CUW363	Regional	SCADA Phase II/Security Upgrades
CUW368	Regional	BDPL Reliability Upgrades
CUW380	Regional	BDPL 3 & 4 Crossover
CUW389	Regional	EBMUD Intertie
CUW393	Regional	BDPL 4 Slipline
		Peninsula Region
CUW354	Regional	Lower Crystal Springs Dam Improvement
CUW356	Regional	Crystal Springs Bypass Tunnel
CUW357	Regional	Adit Leak Repairs
CUW361	Regional	Pulgas Balancing Reservoir Rehabilitation and Improvements
CUW365	Regional	Cross Connection Control
CUW366	Regional	HTWTP Short Term Improvemetns
CUW367	Regional	HTWTP Long Term Improvements
CUW369	Regional	Capuchino Valve Lot Improvements
CUW371	Regional	Crystal Springs/San Andreas Transmission
CUW378	Regional	Crystal Springs Pipleine 2 Replacement
CUW379	Regional	San Andreas Pipeline 3 Installation
CUW390	Regional	Desalination
CUW391	Regional	Baden & San Pedro Valve Lots Improvements

ATTACHMENT L-1
IDENTIFICATION OF WSIP PROJECTS AS REGIONAL/RETAIL
(Section 5.04)

Project Number		Project Description
		San Francisco Region
CUW358	Regional	Sunset Reservoir Upgrades - North Basin
CUW372	Regional	University Mound Reservoir Upgrades - North Basin
		System-Wide
CUW388	Regional	PEIR
CUW392	Regional	Program Management Services
CUW394	Regional	Watershed Land Acquisition
RETAIL		
		Reservoirs
CUW307	Local	Summit Reservoir Rehabilitation
CUW310	Local	New Northwest Reservoir
CUW319	Local	Hunters Point Reservoir Rehabilitation
CUW334	Local	Stanford Heights Reservoir Rehabilitation
CUW335	Local	Potrero Heights Reservoir Rehabiliation
CUW337	Local	Sutro Reservoir Rehabilitation
		Pump Stations/Tanks
CUW306	Local	Crocker Amazon Pump Station Upgrade
CUW309	Local	Lake Merced Pump Station Upgrade
CUW314	Local	La Grande Tank Upgrade
CUW318	Local	Forest Hill Tank Rehabilitation
CUW320	Local	Forest Hilll Pump Station Upgrade
CUW321	Local	Forest Knoll Pump Station Upgrade
CUW322	Local	Lincoln Park Pump Station Upgrade
CUW323	Local	Alemany Pump Station Upgrade
CUW324	Local	Mount Davidson Pump Station Upgrade
CUW326	Local	Palo Alto Pump Station Upgrade
CUW326	Local	Sktview-AquaVista Pump Station Upgrade
CUW327	Local	Summit Pump Station Upgrade
CUW328	Local	McLaren #1 Tank Rehabilitation
CUW329	Local	Potrero Heights Tank Seismic Upgrade
CUW330	Local	Forest Knoll Tank Seismic Upgrade
CUW331	Local	Lincoln Park Tank Seismic Upgrade
CUW332	Local	McLaren #2 Tank Rehabilitation
CUW333	Local	Mount Davidson Tank Seismic Upgrade
CUW338	Local	La Grande Pump Station Upgrade
CUW339	Local	Potrero Heights Pump Station Upgrade
CUW340	Local	Vista Francisco Pump Station Upgrade

ATTACHMENT L-1
IDENTIFICATION OF WSIP PROJECTS AS REGIONAL/RETAIL
(Section 5.04)

Project Number		Project Description
		Pipelines/Valves
CUW304	Local	North University Mound System Upgrade
CUW308	Local	Motorize Key Valves
CUW311	Local	Sunset Circulation Improvements
CUW312	Local	Lincoln Way Transmission Line
CUW313	Local	Noe Valley Transmission Main, Phase 2
CUW315	Local	East/West Transmission Main
CUW316	Local	Fulton @ Sixthe Ave Main Replacement
		Water Supply/Water Quality
CUW301	Local	Groundwater
CUW302	Local	Recycled Water
CUW364	Local	Lawrence-Livermore National Laboratory Water Quality Improvements
		Miscellaneous
CUW303	Local	Vehicle Service Facility Upgrade
CUW305	Local	Fire Protection at CCD

03/13/06

$507,815,000
PUBLIC UTILITIES COMMISSION
OF THE CITY AND COUNTY OF SAN FRANCISCO
SAN FRANCISCO WATER REVENUE BONDS, 2006 SERIES A

$110,065,000
PUBLIC UTILITIES COMMISSION
OF THE CITY AND COUNTY OF SAN FRANCISCO
SAN FRANCISCO WATER REVENUE BONDS, 2006 REFUNDING SERIES B

CERTIFICATE REGARDING USE OF PROCEEDS

The undersigned hereby states and certifies as follows:

(i) The undersigned is the General Manager of the Public Utilities Commission of the City and County of San Francisco (the "Commission"), and is authorized to execute this certificate on behalf of the Commission and is knowledgeable with respect to the matters set forth herein.

(ii) On the date hereof, the Commission is issuing the two series of bonds captioned above (the "2006 Series A Bonds," the "2006 Refunding Series B Bonds" and, together, the "Bonds") pursuant to an Amended and Restated Indenture dated as of August 1, 2002 and the First Supplemental Indenture dated as of March 1, 2006 (collectively, the "Indenture"), both by and between the Commission and U.S. Bank National Association, as trustee (the "Trustee").

(iii) The Trustee will transfer and deposit the proceeds of the 2006 Series A Bonds received by the Trustee on the date hereof as follows:

(1) $48,212,528.32 will be deposited in the 2006 Series A Capitalized Interest Account established within the Interest Fund;

(2) $15,958,031.25 will be deposited in the 2006 Series A Reserve Account of the Bond Reserve Fund;

(3) $623,906.09 will be deposited in the 2006 Series A Costs of Issuance Fund;

(4) $120,622,352.19 will be deposited in the 2006 Series A Refunding Fund and transferred pursuant to Irrevocable Refunding Instructions of the Commission dated the date hereof; and

(5) the remaining $338,600,816.86 will be transferred to the Treasurer for deposit to the 2006 Series A Project Fund.

(iv) The proceeds of the 2006 Series A Bonds transferred pursuant to the Irrevocable Refunding Instructions of the Commission will be used to defease and refund the Commission's Commercial Paper Notes (Water Series) on a current basis. The Notes were issued to finance a portion of the facilities described in Exhibit A hereto.

(v) The proceeds of the Bonds deposited in the 2006 Series A Project Fund will be used to finance a portion of the facilities described in Exhibit A hereto.

(vi) The Trustee will transfer and deposit the proceeds of the 2006 Refunding Series B Bonds received by the Trustee on the date hereof as follows:

(1) $192,498.04 will be deposited in the 2006 Refunding Series B Costs of Issuance Fund; and

(2) $111,178,241.95 will be deposited in the 2006 Refunding Series B Refunding Fund.

(vii) The proceeds of the Bonds deposited in the 2006 Refunding Series B Refunding Fund, together with amounts on deposit in the funds and accounts established under the Indenture for the Commission's San Francisco Water Revenue Bonds, 1996 Series A (the "1996 Series A Bonds") and its San Francisco Water Revenue Bonds, 2001 Series A (the "2001 Series A Bonds"), will be used to refund on an advance basis a portion of the outstanding 1996 Series A Bonds and a portion of the outstanding 2001 Series A Bonds. The portion of the 1996 Series A Bonds being refunded were issued to finance the facilities (the "1996 Project") described in Exhibit B hereto, and the portion of the 2001 Series A Bonds being refunded were used to finance the facilities (the "2001 Project") described in Exhibit B hereto.

(viii) Exhibit C hereto attached describes (A) each use to be made by any person of the Project, the 1996 Project and the 2001 Project other than use by the Commission and other non-federal governmental units and other than use by members of the public generally, and (B) payments (if any) directly or indirectly in respect of such use which are to be made after the date hereof;

(ix) Other than as set forth in Exhibit A and Exhibit B, no portion of the proceeds of the Bonds will be used, directly or indirectly, to make or finance a loan to any person (other than a State or local government unit) or to acquire property which will be sold or leased to any person (other than a State or local government unit) on an installment a sale basis except as referenced in Exhibit C.

(x) The Commission expects to use the Project for the purposes referenced and discussed in Exhibit A, Exhibit B, Exhibit C and Exhibit D or for other governmental purposes of the Commission during the entire term of the Bonds.

(xi) Set forth on Exhibit D is the Commission's methodology for determining governmental use and private use with respect to the water enterprise.

(xii) To the best knowledge of the undersigned, the above statements are reasonable and there are no other facts, estimates or circumstances, other than those set forth herein, that would materially affect the statements made herein.

Capitalized terms used but not defined herein have the meanings set forth in the Indenture.

IN WITNESS WHEREOF, I have hereunto set my name this 15th day of March, 2006.

PUBLIC UTILITIES COMMISSION OF THE
CITY AND COUNTY OF SAN FRANCISCO

By: _____
General Manager

ATTACHMENT L-2 (CONTINUED)
WATER ENTERPRISE REVENUE BOND 2006 SERIES A
SUMMARY OF SOURCES AND USES OF FUNDS
(Section 5.04)

Source: Closing Documents (Certificate Regarding Use of Proceeds)

Proceeds		
Principal	507,815,000.00	
Plus Premium	19,109,138.35	
Minus Underwriter's Discount	(932,940.06)	
Minus Insurance	(1,973,563.58)	
Net Proceeds	524,017,634.71	
Use of Proceeds		
Capitalized Interest Fund	48,212,528.32	
Bond Reserve Fund	15,958,031.25	
Insurance Fund	623,906.09	
Series A Refunding Fund	120,622,352.19	459,223,169.05
Series A Project Fund	338,600,816.86	
Total Uses	524,017,634.71	

	Commercial Paper	Project Fund	Total
Hetch Hetchy			
Tesla Portal Disinfection	251,262.58	1,147,302.42	1,398,565.00
Advance Disinfection	429,714.76	5,611,554.24	6,041,269.00
SJPL	4,737,937.28	17,784,667.72	22,522,605.00
Total Hetch Hetchy	5,418,914.62	24,543,524.38	29,962,439.00
SF Regional			
University Mound - North	55,728.10	5,964,279.90	6,020,008.00
Sunset - North	7,525,896.84	28,782,094.16	36,307,991.00
Groundwater	3,400,973.67	2,963,110.33	6,364,084.00
Recycled Water	1,548,036.76	11,316,958.24	12,864,995.00
Total SF Regiona1	12,530,635.37	49,026,442.63	61,557,078.00
SF Local	45,405,787.71	106,407,313.30	151,813,101.01
Sunol Valley Subregional			
Calaveras Dam	9,065,945.51	15,993,818.49	25,059,764.00
Stand-by Power	556,398.67	1,207,319.33	1,763,718.00
Pipeline Readiness	649,566.31	4,942,205.69	5,591,772.00
SAPS Upgrade	213,423.44	1,748,134.56	1,961,558.00
SVWTP Finished Water Res	3,317,203.82	7,838,383.18	11,155,587.00
Irvington Tunnel	4,084,139.65	18,247,176.35	22,331,316.00
Alameda Creek Fishery	656,765.00	1,327,119.00	1,983,884.00
SVWTP 40 mgd Addition	25,378.75	3,474,585.25	3,499,964.00
Total Sunol Valley Subregional	18,568,821.15	54,778,741.85	73,347,563.00

ATTACHMENT L-2 (CONTINUED)
WATER ENTERPRISE REVENUE BOND 2006 SERIES A
SUMMARY OF SOURCES AND USES OF FUNDS
(Section 5.04)

Miscellaneous				
PEIR	3,204,177.44	5,103,872.56	8,308,050.00	
PPPCMS Services	2,964,786.31	10,358,811.69	13,323,598.00	
Watershed Land Acquisition	-	502,660.00	502,660.00	
Total Miscellaneous	6,168,963.75	15,965,344.25	22,134,308.00	
LLNL	133,156.60	282,702.40	415,859.00	
Bay Division Subregional				
Seismic Upgrade BDPL 3 & 4	4,758,306.54	16,481,539.46	21,239,846.00	
BDPL Reliability	4,360,664.44	40,874,800.56	45,235,465.00	
BDPL 3 & 4 Crossover	802,494.94	493,817.06	1,296,312.00	
SCADA Phase II	65,497.37	1,247,963.63	1,313,461.00	
EBMUD Intertie	6,668,906.37	4,075,015.63	10,743,922.00	
BDPL 4 Slipline	-	1,219,251.00	1,219,251.00	
Total Bay Division Subregional	16,655,869.66	64,392,387.34	81,048,257.00	
Peninsula Subregional				
Capuchino Valve Lot	162,584.69	753,779.31	916,364.00	
CS/SA Transmission	2,288,853.10	3,448,975.90	5,737,829.00	
Adit Leak Repair	255,334.99	1,650,368.01	1,905,703.00	
HTWTP Short Term	2,874,763.69	3,582,860.31	6,457,624.00	
Cross Connection Control	1,150,559.48	324,549.52	1,475,109.00	
CS Bypass Tunnel	2,873,475.22	15,532,584.78	18,406,060.00	
LCS Dam Improvement	931,587.07	3,278,932.93	4,210,520.00	
Pulgas Balancing Reservoir	1,218,341.39	2,706,284.61	3,924,626.00	
HTWTP Long Term	1,107,185.77	2,549,793.23	3,656,979.00	
Baden & San Pedro Valve Lots	60,203.48	2,963,540.52	3,023,744.00	
Total Peninsula Subregional	12,922,888.88	36,791,669.12	49,714,558.00	
San Francisco Subregional				
CSPL 2 Replacement	1,269,111.95	5,019,824.05	6,288,936.00	
SAPL 3	1,492,584.40	1,942,479.60	3,435,064.00	
Desalination	55,618.10	596,473.90	652,092.00	
Total San Francisco Subregional	2,817,314.45	7,558,777.55	10,376,092.00	
Grand Total	120,622,352.19	359,746,902.82	480,369,255.01	
Regional			328,140,295.00	68.31%
Local			152,228,960.01	31.69%
			480,369,255.01	

This certificate is for illustration only. It was prepared in 2006 and shown groundwater and recycled water projects as regional instead of local. In addition, it does not reflect expenditures for the portions of regional assets which in rate base as of June 30, 2008 nor what is expected to be added to rate base through June 30, 2009. For these reasons, the percentages shown for regional and local projects are not accurate.

ATTACHMENT L-3
WATER ENTERPRISE REVENUE BOND 2006 SERIES A
ANNUAL REPORT ON EXPENDITURES OF AND EARNINGS ON PROCEEDS
AS OF JUNE 30, 2009
(Section 5.04 A)

Project Number		Project Description	Net Financing Proceeds[1]	Appropriated Interest Earnings[2]	Adjusted Project Funding	Expenditures Thru 6/30/09[3]	Remaining Balance
REGIONAL PROGRAM							
		San Joaquin Region					
CUW373	Regional	San Joaquin Pipeline System Rehabilitation	1,398,565				
CUW384	Regional	Tesla Advance Disinfection	6,041,269				
CUW387	Regional	Tesla Portal Disinfection	22,522,605				
		Total San Joaquin Region	29,962,439				
		Sunol Valley Region					
CUW352	Regional	Alameda Creek Fishery Enhancement	1,983,884				
CUW355	Regional	Stand-by Power - Various Locations	1,763,718				
CUW359	Regional	New Irvington Tunnel/Alameda Siphon No. 4	22,331,316				
CUW370	Regional	Pipeline Readiness Improvements	5,591,772				
CUW374	Regional	Calaveras Dam Replacement	25,059,764				
CUW381	Regional	SVWTP 40 mgd Addition	3,499,964				
CUW382	Regional	SVWTP Finished Water Reservoir	11,155,587				
CUW386	Regional	San Antonio Pump Station Upgrade	1,961,558				
		Total Sunol Valley Region	73,347,563				
		Bay Division Region					
CUW353	Regional	Seismic Upgrade BDPL 3 & 4	21,234,846				
CUW363	Regional	SCADA Phase II/Security Upgrades	1,313,461				
CUW368	Regional	BDPL Reliability Upgrades	45,235,465				
CUW380	Regional	BDPL 3 & 4 Crossover	21,239,846				
CUW389	Regional	EBMUD Intertie	10,743,922				
CUW393	Regional	BDPL 4 Slipline	1,219,251				
		Total Bay Division Region	100,986,791				
		Peninsula Region					
CUW354	Regional	Lower Crystal Springs Dam Improvement	4,210,520				
CUW356	Regional	Crystal Springs Bypass Tunnel	18,406,050				
CUW357	Regional	Adit Leak Repairs	1,905,703				
CUW361	Regional	Pulgas Balancing Reservoir Rehabilitation and Improvements	3,924,626				
CUW365	Regional	Cross Connection Control	1,475,109				
CUW366	Regional	HTWTP Short Term Improvemetns	6,457,624				
CUW367	Regional	HTWTP Long Term Improvements	3,656,979				
CUW369	Regional	Capuchino Valve Lot Improvements	916,364				
CUW371	Regional	Crystal Springs/San Andreas Transmission	5,737,829				
CUW378	Regional	Crystal Springs Pipleine 2 Replacement	6,288,936				
CUW379	Regional	San Andreas Pipeline 3 Installation	3,435,064				
CUW390	Regional	Desalination	652,092				
CUW391	Regional	Baden & San Pedro Valve Lots Improvements	3,023,744				
		Total Peninsula Region	60,090,650				
		San Francisco Region					
CUW358	Regional	Sunset Reservoir Upgrades - North Basin	6,020,008				
CUW372	Regional	University Mound Reservoir Upgrades - North Basin	36,307,991				
		Total San Francisco Region	42,327,999				
		System-Wide					
CUW388	Regional	PEIR	8,308,050				
CUW392	Regional	Program Management Services	13,323,598				
CUW394	Regional	Watershed Land Acquisition	502,660				
		Total System-Wide	22,134,308				
		Total Regional Program	328,849,750				
LOCAL PROGRAM							
		Reservoirs					
CUW307	Local	Summit Reservoir Rehabilitation					
CUW310	Local	New Northwest Reservoir					
CUW319	Local	Hunters Point Reservoir Rehabilitation					
CUW334	Local	Stanford Heights Reservoir Rehabilitation					
CUW335	Local	Potrero Heights Reservoir Rehabilitation					
CUW337	Local	Sutro Reservoir Rehabilitation					
		Total Reservoirs					
		Pump Stations/Tanks					
CUW306	Local	Crocker Amazon Pump Station Upgrade					
CUW309	Local	Lake Merced Pump Station Upgrade					
CUW314	Local	La Grande Tank Upgrade					
CUW318	Local	Forest Hill Tank Rehabilitation					
CUW320	Local	Forest Hilll Pump Station Upgrade					
CUW321	Local	Forest Knoll Pump Station Upgrade					
CUW322	Local	Lincoln Park Pump Station Upgrade					
CUW323	Local	Alemany Pump Station Upgrade					
CUW324	Local	Mount Davidson Pump Station Upgrade					

ILLUSTRATION ONLY DRAFT

WATER ENTERPRISE REVENUE BOND 2006 SERIES A
ANNUAL REPORT ON EXPENDITURES OF AND EARNINGS ON PROCEEDS
AS OF JUNE 30, 2009
(Section 5.04 A)

Project Number		Project Description	Net Financing Proceeds[1]	Appropriated Interest Earnings[2]	Adjusted Project Funding	Expenditures Thru 6/30/09[3]	Remaining Balance
CUW326	Local	Palo Alto Pump Station Upgrade					
CUW326	Local	Sktview-AquaVista Pump Station Upgrade					
CUW327	Local	Summit Pump Station Upgrade					
CUW328	Local	McLaren #1 Tank Rehabilitation					
CUW329	Local	Potrero Heights Tank Seismic Upgrade					
CUW330	Local	Forest Knoll Tank Seismic Upgrade					
CUW331	Local	Lincoln Park Tank Seismic Upgrade					
CUW332	Local	McLaren #2 Tank Rehabilitation					
CUW333	Local	Mount Davidson Tank Seismic Upgrade					
CUW338	Local	La Grande Pump Station Upgrade					
CUW339	Local	Potrero Heights Pump Station Upgrade					
CUW340	Local	Vista Francisco Pump Station Upgrade					
		Total Pump Stations/Tanks					
		Pipelines/Valves					
CUW304	Local	North University Mound System Upgrade					
CUW308	Local	Motorize Key Valves					
CUW311	Local	Sunset Circulation Improvements					
CUW312	Local	Lincoln Way Transmission Line					
CUW313	Local	Noe Valley Transmission Main, Phase 2					
CUW315	Local	East/West Transmission Main					
CUW316	Local	Fulton @ Sixth Ave Main Replacement					
		TtoalPipelines/Valves					
		Water Supply/Water Quality					
CUW301	Local	Groundwater					
CUW302	Local	Recycled Water					
CUW364	Local	Lawrence-Livermore National Laboratory Water Quality Improvements					
		Total Water Supply/Water Quality					
		Miscellaneous					
CUW303	Local	Vehicle Service Facility Upgrade					
CUW305	Local	Fire Protection at CCD					
		Total Miscellaneous					
		Total Local Program					
		Grand Total Regional and Local Programs					
		Unappropriated Interest Earnings					
		Percent of Net Proceeds[4]					
		Percent of Net Proceeds and Earnings[4]					

ILLUSTRATION ONLY DRAFT

[1]Net financing proceeds available on date of issue (i.e. deposit to project fund)
[2]Cumulative net of arbitrage rebate liability
[3]Cumulative
[4]If financing sources Substantially Expended, proceed allocations are then fixed

REVENUE-FUNDED CAPITAL ADDITIONS (Section 5.04.B)
Subfund: 5W CPF WCF - Wholesale Customer Capital Fund (Water)

Projected FAMIS as of July 1, 2009 (Day 1 of New Budget Year)

		A	B	C	D	E	F	G=C-D-F	H	I=G-H
						Wholesale Customer Capital Fund (5W CPF WCF)				
Based on Proportionate Annual Water Deliveries of ...			68.7%							
Project	Title	FY 2009-10 Approved Budget* - Total Regional	FY 2009-10 Approved Budget - WHOLESALE SHARE	Total Appropriation - All Years^	All Years Actual Expenditures^	Fiscal Year 2009-10 Actual Expenditures^	Encumbered But Not Expended^	Appropriated, Unencumbered Balance^	Projected Expended & Encumbered through 6/30/2010	Projected Surplus / (Shortfall)
CUW262	Regional Water RnR - Treatment Facilities	$ 1,000,000	$ 687,000	$ 687,000	$ -	$ -	$ -	$ 687,000	$ 229,000	$ 458,000
CUW263	Regional Water RnR - Conveyance/Transmission Systems	$ 7,000,000	$ 4,809,000	$ 4,809,000	$ -	$ -	$ -	$ 4,809,000	$ 1,603,000	$ 3,206,000
CUW264	Regional Water - Watersheds / ROW Management	$ 500,000	$ 343,500	$ 343,500	$ -	$ -	$ -	$ 343,500	$ 114,000	$ 229,500
FUW100	Regional Water - Facilities Maintenance	$ 3,700,000	$ 2,541,900	$ 2,541,900	$ -	$ -	$ -	$ 2,541,900	$ 847,000	$ 1,694,900
CUW261	Regional Water - Storage									
	Regional Total	**$ 12,200,000**	**$ 8,381,400**	**$ 8,381,400**	**$ -**	**$ -**	**$ -**	**$ 8,381,400**	**$ 2,793,000**	**$ 5,588,400**

Source: * SFPUC Commission Approved Budget, February 2009, Same Format
^ FAMIS - City's Official Financial System of Record

Ties to Budget Hearing Materials

REVENUE-FUNDED CAPITAL ADDITIONS (Section 5.04.B)
Subfund: 5W CPF WCF - Wholesale Customer Capital Fund (Water)

Projected FAMIS as of June 30, 2010 (Last Day of Budget Year)

						Wholesale Customer Capital Fund (5W CPF WCF)				
Based on Proportionate Annual Water Deliveries of ...			68.7%							
Project	Title	FY 2009-10 Approved Budget* - Total Regional	FY 2009-10 Approved Budget - WHOLESALE SHARE	Total Appropriation - All Years^	All Years Actual Expenditures^	Fiscal Year 2009-10 Actual Expenditures^	Encumbered But Not Expended^	Appropriated, Unencumbered Balance^	Projected Expended & Encumbered through 6/30/2011	Projected Surplus / (Shortfall)
CUW262	Regional Water RnR - Treatment Facilities	$ 1,000,000	$ 687,000	$ 687,000	$ 235,000	$ 235,000	$ -	$ 452,000	$ 409,000	$ 43,000
CUW263	Regional Water RnR - Conveyance/Transmission Systems	$ 7,000,000	$ 4,809,000	$ 4,809,000	$ 1,395,000	$ 1,395,000	$ 25,000	$ 3,389,000	$ 1,589,000	$ 1,800,000
CUW264	Regional Water - Watersheds / ROW Management	$ 500,000	$ 343,500	$ 343,500	$ 115,000	$ 115,000	$ 50,000	$ 178,500	$ 35,500	$ 143,000
FUW100	Regional Water - Facilities Maintenance	$ 3,700,000	$ 2,541,900	$ 2,541,900	$ 850,000	$ 850,000	$ 123,000	$ 1,568,900	$ 768,900	$ 800,000
CUW261	Regional Water - Storage	$ -	$ -							
	Regional Total	**$ 12,200,000**	**$ 8,381,400**	**$ 8,381,400**	**$ 2,595,000**	**$ 2,595,000**	**$ 198,000**	**$ 5,588,400**	**$ 2,802,400**	**$ 2,786,000**

Source: * SFPUC Commission Approved Budget, February 2009, Same Format
^ FAMIS - City's Official Financial System of Record

Ties to Budget Hearing Materials Shown on Attachment N-2, Schedule 3

Shown On Attachment N-2, Schedule 3 Revenue Capital - Actual Expenditures

Shown on Attachement N-2, Schedule 3 Continuing Appropriation Needed for Mulit-Year Revenue Funded Capital

REVENUE-FUNDED CAPTIAL ADDITIONS (Section 5.04.B)
Subfund: 5T CPF WCF - Wholesale Customer Capital Fund (Hetch Hetchy)

Projected FAMIS as of July 1, 2009 (Day 1 of New Budget Year)

		A		B	C	D	E	F	G=C-D-F	H	I=G-H
						Wholesale Customer Capital Fund (5W CPF WCF)					
Based on Proportionate Annual Water Deliveries of ...				68.1%							
Project	Title	FY 2009-10 Approved Budget* - Total Regional		FY 2009-10 Approved Budget - WHOLESALE SHARE	Total Appropriation - All Years^	All Years Actual Expenditures^	Fiscal Year 2009-10 Actual Expenditures^	Encumbered But Not Expended^	Appropriated, Unencumbered Balance^	Projected Expended & Encumbered through 6/30/2010	Projected Surplus / (Shortfall)
CUH931	HH Microwave Replacement	$ 4,000,000	J	$ 1,224,900	$ 1,224,900	$ -	$ -	$ -	$ 1,224,900	$ 408,000	$ 816,900
CUH977	HH Water R&R - Facilities Maintenance	$ 3,500,000	J	$ 1,071,788	$ 1,071,788	$ -	$ -	$ -	$ 1,071,788	$ 357,000	$ 714,788
CUH947	SEA - Go Solar Incentive Porject	$ 4,000,000	P	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
CUH971	Alternative Transmission Studies	$ 1,000,000	P	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
CUH976	HH Water R&R - Power Infrastructure	$ 16,700,000	P	$ -	$ -					$ -	
CUH979	Hunters Point Municipal Power	$ -	P	$ -	$ -					$ -	
CUH983	Civic Center Sustainability District	$ 1,090,000	P	$ -	$ -					$ -	
CUH986	General Fund Dept - Energy Efficiency	$ 7,365,158	P	$ -	$ -					$ -	
	Renewable/Generation	$ 3,501,307	P	$ -	$ -					$ -	
	Treasure Island Improvement Project	$ 2,700,000	P	$ -	$ -					$ -	
	Enterprise Fund Dept - Energy Efficiency	$ 325,722	P	$ -	$ -					$ -	
CUH975	HH Water R&R - Water Infrastructure	$ 6,000,000	W	$ 4,083,000	$ 4,083,000					$ 1,361,000	
	Toulumne River Watershed Protection	$ 2,000,000	W	$ 1,361,000	$ 1,361,000					$ 454,000	
	Regional Total	**$ 52,182,187**		**$ 7,740,688**	**$ 7,740,688**	**$ -**	**$ -**	**$ -**	**$ 2,296,688**	**$ 2,580,000**	**$ 1,531,688**

Source: * SFPUC Commission Approved Budget, February 2009, Same Format
^ FAMIS - City's Official Financial System of Record

Ties to Budget Hearing Materials

REVENUE-FUNDED CAPTIAL ADDITIONS (Section 5.04.B)
Subfund: 5T CPF WCF - Wholesale Customer Capital Fund (Hetch Hetchy)

Projected FAMIS as of June 30, 2010 (Last Day of Budget Year)

						Wholesale Customer Capital Fund (5W CPF WCF)					
Based on Proportionate Annual Water Deliveries of ...				68.1%							
Project	Title	FY 2009-10 Approved Budget* - Total Regional		FY 2009-10 Approved Budget - WHOLESALE SHARE	Total Appropriation - All Years^	All Years Actual Expenditures^	Fiscal Year 2009-10 Actual Expenditures^	Encumbered But Not Expended^	Appropriated, Unencumbered Balance^	Projected Expended & Encumbered through 6/30/2011	Projected Surplus / (Shortfall)
CUH931	HH Microwave Replacement	$ 4,000,000	J	$ 1,224,900	$ 1,224,900	$ 1,224,900	$ 1,224,900	$ -	$ -	$ -	$ -
CUH977	HH Water R&R - Facilities Maintenance	$ 3,500,000	J	$ 1,071,788	$ 1,071,788	$ 1,071,788	$ 1,071,788	$ -	$ (1)	$ (1)	$ -
CUH947	SEA - Go Solar Incentive Porject	$ 4,000,000	P	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
CUH971	Alternative Transmission Studies	$ 1,000,000	P	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
CUH976	HH Water R&R - Power Infrastructure	$ 16,700,000	P	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
CUH979	Hunters Point Municipal Power	$ -	P	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
CUH983	Civic Center Sustainability District	$ 1,090,000	P	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
CUH986	General Fund Dept - Energy Efficiency	$ 7,365,158	P	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Renewable/Generation	$ 3,501,307	P	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Treasure Island Improvement Project	$ 2,700,000	P	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Enterprise Fund Dept - Energy Efficiency	$ 325,722	P	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
CUH975	HH Water R&R - Water Infrastructure	$ 6,000,000	W	$ 4,083,000	$ 4,083,000	$ 4,083,000	$ 4,083,000	$ -	$ -	$ -	$ -
	Toulumne River Watershed Protection	$ 2,000,000	W	$ 1,361,000	$ 1,361,000	$ 1,361,000	$ 1,361,000	$ -	$ -	$ -	$ -
	Regional Total	**$ 52,182,187**		**$ 7,740,688**	**$ 7,740,688**	**$ 7,740,688**	**$ 7,740,688**	**$ -**	**$ (1)**	**$ (1)**	**$ -**

Source: * SFPUC Commission Approved Budget, February 2009, Same Format
^ FAMIS - City's Official Financial System of Record

Ties to Budget Hearing Materials
Shown on Attachment N-2, Schedule 6

Shown On Attachment N-2, Schedule 6
Revenue Capital - Actual Expenditures

Show on Attachment N-2, Schedule 6
Continuing Appropriation
Needed for Mulit-Year
Revenue Funded Capital

ATTACHMENT M-2

REVENUE FUNDED CAPITAL
ANNUAL REPORTING REQUIREMENTS
(Section 5.04B)

Part A. Updated Actual Information Through Most Recent Fiscal Year (Due in November)

Each year, the SFPUC will provide a report on the status of the regional revenue funded projects with the following information:

Project-level information (through close-out)

1 Scope of project
2 Current cost estimate/budget.
3 Expected milestone dates (ie, design, environmental, construction period, close-out, etc.)
4 Contract status
5 Reasons for status changes from prior report.
6 Other information relevant to whether project is on time/on budget.
7 For most recently completed fiscal year and estimated for current year:
8 Total expenditures (capital and operating); amounts paid from other sources.
9 Amount of encumbered and unencumbered appropriations
10 Application of any unused appropriations

Wholesale Capital Fund

11 Beginning balance, deposits, capital expenditures (by project), earnings, ending balance.
12 Components of ending balance; wholesale portion of:
13 Appropriated and encumbered
14 Appropriated but unencumbered

Part B. Proposed Appropriations for Upcoming Year (Due in March)

15 Project information, to the extent not provided in Part A
16 Expected funding needs for regional projects
17 Unused or excess appropropriations carried over.
18 Proposed appropriation for upcoming fiscal year.

ATTACHMENT M-3
WHOLESALE REVENUE-FUNDED CAPITAL FUND - BALANCING ACCOUNT ADJUSTMENT
**** EXAMPLE REPORTING FORMAT ****
(Section 6.08)

		(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)	(1)
		FY 2009-10	FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20
a.	Beginning balance	$0	$5,671,414	$8,960,834	$9,669,194	$10,420,781	$11,217,991	$5,498,801	$6,198,022	$6,944,933	$7,742,299	$8,593,037
b.	Transfer to Balancing Account	$0					($6,467,533)					($2,574,995)
	Year 1											
c.	Budgeted appropriation	$8,381,400					$10,697,026					$13,652,417
d.	Encumbrance/Expenditure	($2,793,800)	($2,793,800)	($2,793,800)			($3,565,675)	($3,565,675)	($3,565,675)			($4,550,806)
	Year 2											
e.	Budgeted appropriation		$8,800,470					$11,231,878				
f.	Encumbrance/Expenditure		($2,933,490)	($2,933,490)	($2,933,490)			($3,743,959)	($3,743,959)	($3,743,959)		
	Year 3											
g.	Budgeted appropriation			$9,240,494					$11,793,471			
h.	Encumbrance/Expenditure			($3,080,165)	($3,080,165)	($3,080,165)			($3,931,157)	($3,931,157)	($3,931,157)	
	Year 4											
i.	Budgeted appropriation				$9,702,518					$12,383,145		
j.	Encumbrance/Expenditure				($3,234,173)	($3,234,173)	($3,234,173)			($4,127,715)	($4,127,715)	($4,127,715)
	Year 5											
k.	Budgeted appropriation					$10,187,644					$13,002,302	
l.	Encumbrance/Expenditure					($3,395,881)	($3,395,881)	($3,395,881)			($4,334,101)	($4,334,101)
m.	Subtotal	$5,587,600	$8,744,594	$9,393,873	$10,123,885	$10,898,206	$5,251,755	$6,025,163	$6,750,702	$7,525,246	$8,351,628	$6,657,838
n.	Interest earnings (e.g., 3%)	$83,814	$216,240	$275,321	$296,896	$319,785	$247,046	$172,859	$194,231	$217,053	$241,409	$228,763
o.	Ending fund balance (unencumbered, unexpende	$5,671,414	$8,960,834	$9,669,194	$10,420,781	$11,217,991	$5,498,801	$6,198,022	$6,944,933	$7,742,299	$8,593,037	$6,886,601
p.	Five Year Cumulative Appropriations w/ interest					$47,504,581					$60,180,421	
q.	10% of Cumulative Appropriations w/ interest					$4,750,458					$6,018,042	
r.	Ending fund balance					$11,217,991					$8,593,037	
s.	Excess balance transferred to Balancing Account*					($6,467,533)					($2,574,995)	

*Test: Any balance in excess of 10% of the cumulative five-year appropriation total is credited to the balancing account.

BALANCING ACCOUNT / RATE SETTING CALCULATION
REFERENCE SECTION 6.03.A.3.a

	FY 2007-08	FY 2008-09	FY 2009-10
Step 1:			
A. Balancing Account as of June 30, 2007	$12,882,000		
B. Interest on Balancing Account at Pooled Investment Rate for Fiscal Year	$554,000		
C. Wholesale Revenues for Fiscal Year	($113,932,000)		
D. Wholesale Revenue Requirement for Fiscal Year	$119,224,000		
E. Settlement Credits or Other Adjustments	$2,448,614		
F. 1984 Agreement Balancing Account Credits	$0		
G. Balancing Account as of June 30, 2008	$21,176,614		
Step 2:			
A. Balancing Account as of June 30, 2008		$21,176,614	
B. Interest on Balancing Account at Pooled Investment Rate for Fiscal Year		$529,000	
C. Wholesale Revenues for Fiscal Year		-$123,604,000	
D. Wholesale Revenue Requirement for Fiscal Year		$120,562,000	
E. Settlement Credits or Other Adjustments		$21,000	
F. 1984 Agreement Balancing Account Credits		$0	
G. Balancing Account as of June 30, 2009		$18,684,614	
Step 3:			
A. Balancing Account as of June 30, 2009			$0
B. Interest on Balancing Account at Pooled Investment Rate for Fiscal Year			$0
C. Wholesale Revenues for Fiscal Year			-$127,485,900
D. Wholesale Revenue Requirement for Fiscal Year			$140,994,733
E. Settlement Credits or Other Adjustments			$21,000
F. 1984 Agreement Balancing Account Credits			$1,997,220
G. Balancing Account as of June 30, 2010			$15,527,053
H. Net Change in Wholesale Revenue Coverage			$4,488,233
I. Total Revenue Deficiency or Surplus			$20,015,286
J. Projected Water Sales in Ccf	84,621,240	83,205,600	85,920,000
K. Deficiency or (Surplus) $/Ccf			$0.23
L. Deficiency or (Surplus) Ccf as a Percentage of Revenues			15.7%

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Note: Dollar amounts are for illustrative purposes only. The Parties have not agreed on the amount of the balancing account as of June 30, 2007, revenue requirement for FY 2007-08, settlement credits for FY 2007-08, and the amount of the balancing account as of June 30, 2009.

BALANCING ACCOUNT / RATE SETTING CALCULATION
METHOD OF CALCULATION
REFERENCE SECTION 6.03.A.3.a

N = The year for which rates are being set

N-1 = The current year

N-2 = The most recently completed year for which actual results are available

Calculation Method:

Step 1 Determine the actual revenue differential for year N-2
- A. Enter the beginning amount of the Balancing Account
- B. Calculate the interest earned at the Pooled Investment Account Rate for (A)
- C. Enter the actual Wholesale revenues billed
- D. Enter the Wholesale Revenue Requirement
- E. Enter settlement credits or adjustments, if any
- F. Enter carry-over 1984 Agreement credits owed the City, if any
- G. Calculate the ending amount of the Balancing Account

Step 2 Determine the projected revenue differential for year N-1
- A. Enter the beginning amount of the Balancing Account; this is the same amount as G in Step 1
- B. Calculate the interest earned at the Pooled Investment Account Rate for (A)
- C. Enter the actual Wholesale revenues billed
- D. Enter the Wholesale Revenue Requirement
- E. Enter settlement credits or adjustments, if any
- F. Enter carry-over 1984 Agreement credits owed the City, if any
- G. Calculate the ending amount of the Balancing Account

Step 3 Determine the projected revenue differential for year N
- A. Enter the beginning amount of the Balancing Account; this is the same amount as G in Step 2
- B. Calculate the interest earned at the Pooled Investment Account Rate for (A)
- C. Enter the actual Wholesale revenues billed
- D. Enter the Wholesale Revenue Requirement
- E. Enter settlement credits or adjustments, if any
- F. Enter carry-over 1984 Agreement credits owed the City, if any
- G. Calculate the ending amount of the Balancing Account
- H. Enter the net change in the Wholesale Revenue Coverage, if applicable
- I. Calculate the total revenue deficiency or surplus (G) + (H)
- J. Enter the projected water sales to Wholesale Customers in Ccf
- K. Calculate the required increase in the commodity portion of the rate by dividing (I) by (J)
- L. Calculate the required increase in revenues by dividing (I) by (C)

WHOLESALE REVENUE REQUIREMENT SCHEDULES
CALCULATION OF WHOLESALE REVENUE REQUIREMENT
FISCAL YEAR 2009-10
REFERENCE ARTICLE 5

ATTACHMENT N-2
SCHEDULE 1

EXPENSE CATEGORY	CONTRACT REFERENCE	SCHEDULE REFERENCE	TOTAL	DIRECT RETAIL	DIRECT WHOLESALE	REGIONAL	JOINT EXPENSE ALLOCATION FACTOR	WHOLESALE SHARE
OPERATING AND MAINTENANCE EXPENSE:								
SOURCE OF SUPPLY	5.05 (A)	SCH 8.1	$ 14,943,953	$ 1,251,062	$ -	$ 13,692,891	ANNUAL USE[1]	$ 9,364,568
PUMPING	5.05 (B)	SCH 8.1	$ 4,342,682	$ 3,854,000	$ -	$ 488,682	ANNUAL USE[1]	$ 334,210
TREATMENT	5.05 (C)	SCH 8.1	$ 30,445,053	$ -	$ -	$ 30,445,053	ANNUAL USE[1]	$ 20,821,372
TRANSMISSION & DISTRIBUTION	5.05 (D)	SCH 8.1	$ 53,416,232	$ 30,163,286	$ -	$ 23,252,946	ANNUAL USE[1]	$ 15,902,690
CUSTOMER ACCOUNTS[2]	5.05 (E)	SCH 8.1	$ 7,552,213	$ 7,401,169	$ 151,044	$ -	2%	$ 151,044
TOTAL O&M			$ 110,700,133	$ 42,669,517	$ 151,044	$ 67,879,572		46,573,883
COMPOSITE % (WHOLESALE SHARE / TOTAL O&M)	5.06 (C)							42.07%
ADMINISTRATIVE AND GENERAL EXPENSES:								
COWCAP	5.06 (A)	SCH 8.1	$ 1,238,009	$ -	$ -	$ 1,238,009	COMPOSITE O&M	$ 520,857
SERVICES OF SFPUC BUREAUS	5.06 (B)	SCH 7	$ 22,465,291	$ 8,178,424	$ -	$ 14,286,867	ANNUAL USE[1]	$ 9,770,788
OTHER A&G	5.06 (C)	SCH 8.1	$ 12,972,477	$ 4,009,891	$ -	$ 8,962,586	COMPOSITE O&M	$ 3,770,749
COMPLIANCE AUDIT	5.06 (D)	SCH 8.1	$ 200,000	$ -	$ -	$ 200,000	50%	$ 100,000
TOTAL A&G			$ 36,875,777	$ 12,188,315	$ -	$ 24,687,462		$ 14,162,394
PROPERTY TAXES	5.07	SCH 8.1	$ 1,417,293	$ -	$ -	$ 1,417,293	ANNUAL USE[1]	$ 969,287
CAPITAL COST RECOVERY								
PRE-2009 ASSETS	5.03	ATT K						$ 24,051,326
DEBT SERVICE ON NEW ASSETS	5.04 (A)	SCH 2						$ 17,952,931
REVENUE FUNDED ASSETS - APPROPRIATED TO WHOLESALE CAPITAL FUND	5.04 (B)	SCH 3						$ 8,381,400
TOTAL CAPITAL COST RECOVERY								$ 50,385,657
WHOLESALE SHARE HETCH HETCHY WATER & POWER	5.04	SCH 4						$ 28,903,512
WHOLESALE REVENUE REQUIREMENT								$ 140,994,733
WHOLESALE REVENUE COVERAGE[3]								$ 4,488,233

ILLUSTRATION ONLY DRAFT

[1]Proportional Annual Use (68.39%)
[2]Water Enterprise Share of Customer Accounts Expenses (62% of Total Customer Accounts Expenses)
[3]25% of Wholesale Share of Debt Service

WHOLESALE REVENUE REQUIREMENT SCHEDULES
WATER ENTERPRISE CAPITAL COST RECOVERY - ANNUAL DEBT SERVICE
FISCAL YEAR 2009-10
REFERENCE SECTION 5.04.A

ATTACHMENT N-2
SCHEDULE 2

	2006 BOND ISSUE SERIES A	2008 BOND ISSUE ALL SERIES	2009 BOND ISSUE ALL SERIES	XXXX BOND ISSUE ALL SERIES	XXXX BOND ISSUE ALL SERIES	XXXX BOND ISSUE ALL SERIES	XXXX BOND ISSUE ALL SERIES	TOTAL ALL OUTSTANDING BONDS
USE OF BOND PROCEEDS								
RETAIL PROJECTS	31.61%	22.95%	19.42%	XX.XX%	XX.XX%	XX.XX%	XX.XX%	
REGIONAL PROJECTS	68.39%	77.05%	80.58%	YY.YY%	YY.YY%	YY.YY%	YY.YY%	
PRINCIPAL PAYMENT	$ 8,765,000	-	-	-		-	-	$ 8,765,000
RETAIL PROJECTS	$ 2,770,617	-	-	-		-	-	$ 2,770,617
REGIONAL PROJECTS	$ 5,994,384	-	-	-		-	-	$ 5,994,384
INTEREST PAYMENT (GROSS)	$ 23,353,388	$ 5,561,386	$ 56,181,932	-		-	-	$ 85,096,706
RETAIL PROJECTS	$ 7,382,006	$ 1,276,338	$ 10,910,531	-		-	-	$ 19,568,875
REGIONAL PROJECTS	$ 15,971,382	$ 4,285,048	$ 45,271,401	-		-	-	$ 65,527,831
INTEREST PAYMENT (CAPITALIZED)	-	-	$ 56,181,932					
RETAIL PROJECTS	-	-	$ 10,910,531					
REGIONAL PROJECTS	-	-	$ 45,271,401					
INTEREST PAYMENT (NET)	$ 23,353,388	$ 5,561,386	-					
RETAIL PROJECTS	$ 7,382,006	$ 1,276,338	-					
REGIONAL PROJECTS	$ 15,971,382	$ 4,285,048	-					
TOTAL PRINCIPAL AND INTEREST PAYMENT	32,118,388	5,561,386	-	-	-	-	-	$ 37,679,774
RETAIL PROJECTS	10,152,622	1,276,338	-	-	-	-	-	$ 11,428,961
REGIONAL PROJECTS	21,965,766	4,285,048	-	-	-	-	-	$ 26,250,813
PROPORTIONAL ANNUAL USE	68.39%	68.39%	68.39%	ZZ.ZZ%	ZZ.ZZ%	ZZ.ZZ%	ZZ.ZZ%	
WHOLESALE SHARE	$ 15,022,387	$ 2,930,544	-	-	-	-	-	$ 17,952,931 (TO SCHEDULE 1)

ILLUSTRATION ONLY DRAFT

Note: Allocation of bond proceeds shown are for illustrative purposes only. Regional projects will not include bond proceeds used to construct or acquire assets capitalized prior to 7/1/09. Regional projects also will not include in-city groundwater or in-city recycled water projects.

WHOLESALE REVENUE REQUIREMENT SCHEDULES
WATER ENTERPRISE CAPITAL COST RECOVERY - REVENUE FUNDED CAPITAL PROJECTS
FISCAL YEAR 2009-10
REFERENCE SECTION 5.04.B

ATTACHMENT N-2
SCHEDULE 3

		PROJECT APPROPRIATION	CLASSIFICATION	ALLOCATION FACTOR	WHOLESALE SHARE	TOTAL APPROPRIATION ALL YEARS	ALL YEARS ACTUAL EXPENDITURES	FY 2009-10 ACTUAL EXPENDITURES	ENCUMBERED, NOT EXPENDED	APPROPRIATED, UNENCUMBERED BALANCE
CUH980	Treasure Island Improvement Project	3,800,000	RETAIL	0.0%	$ -	$ -	$ -	$ -	$ -	$ -
CUW253	Facilities Security	500,000	RETAIL	0.0%	$ -	$ -	$ -	$ -	$ -	$ -
CUW260	Local Water R&R	22,347,520	RETAIL	0.0%	$ -	$ -	$ -	$ -	$ -	$ -
CUW686	Automated Meter Reading System	36,001,000	RETAIL	0.0%	$ -	$ -	$ -	$ -	$ -	$ -
	Total Local	62,648,520			$ -	$ -	$ -	$ -	$ -	$ -
CUW202	Replace Prestressed Concrete Cylr Pipe	-	REGIONAL	68.7%	$ -	$ -	$ -	$ -	$ -	$ -
CUW261	Regional Water R&R - Storage	-	REGIONAL	68.7%	$ -	$ -	$ -	$ -	$ -	$ -
CUW262	Regional Water R&R -Treatment Facilities	1,000,000	REGIONAL	68.7%	$ 687,000	$ 687,000	$ 235,000	$ 235,000	$ -	$ 452,000
CUW263	Regional Water R&R Conveyance/Transmission	7,000,000	REGIONAL	68.7%	$ 4,809,000	$ 4,809,000	$ 1,395,000	$ 1,395,000	$ 25,000	$ 3,389,000
CUW264	Regional Watersheds/ROW Management	500,000	REGIONAL	68.7%	$ 343,500	$ 343,500	$ 115,000	$ 115,000	$ 50,000	$ 178,500
FUW100	Regional Facilities Maintenance	3,700,000	REGIONAL	68.7%	$ 2,541,900	$ 2,541,900	$ 850,000	$ 850,000	$ 123,000	$ 1,568,900
	Total Regional	12,200,000			$ 8,381,400	$ 8,381,400	$ 2,595,000	$ 2,595,000	$ 198,000	$ 5,588,400
	TOTAL ALL PROJECTS	74,848,520			$ 8,381,400	$ 8,381,400	$ 2,595,000	$ 2,595,000 (TO SCHEDULE 1)	$ 198,000 (TO SCHEDULE 1)	$ 5,588,400 (TO SCHEDULE 1)

ILLUSTRATION ONLY DRAFT

WHOLESALE REVENUE REQUIREMENT SCHEDULES
CALCULATION OF WHOLESALE SHARE OF HETCH HETCHY WATER & POWER
FISCAL YEAR 2009-10
REFERENCE ARTICLE 5

ATTACHMENT N-2
SCHEDULE 4

EXPENSE CATEGORY	CONTRACT REFERENCE	SCHEDULE REFERENCE	TOTAL	POWER SPECIFIC	WATER SPECIFIC	JOINT	JOINT ALLOCATION PERCENTAGE	WATER-RELATED TOTAL	WHOLESALE ALLOCATION FACTOR	WHOLESALE SHARE
OPERATION AND MAINTENANCE										
OPERATION	5.08 B 1	SCH 8.2	$ 44,612,220	$ 31,853,965	$ 9,557,861	$ 3,200,394	45%	$ 10,998,038	ADJUSTED PROPORTIONAL ANNUAL USE	$ 7,484,165
MAINTENANCE	5.08 B 1	SCH 8.2	$ 16,868,612	$ 5,048,039	$ 3,238,622	$ 8,581,951	45%	$ 7,100,500	ADJUSTED PROPORTIONAL ANNUAL USE	$ 4,831,890
TOTAL OPERATION AND MAINTENANCE			$ 61,480,832	$ 36,902,004	$ 12,796,483	$ 11,782,345		$ 18,098,538		$ 12,316,055
ADMINISTRATIVE AND GENERAL										$ -
COWCAP	5.08 B 2	SCH 8.2	$ 1,139,579	$ -	$ -	$ 1,139,579	45%	$ 512,811	ADJUSTED PROPORTIONAL ANNUAL USE	$ 348,968
SERVICES OF SFPUC BUREAUS	5.08 B 2	SCH 7	$ 8,255,307	$ 5,375,656	$ 2,879,651	$ -	45%	$ 2,879,651	ADJUSTED PROPORTIONAL ANNUAL USE	$ 1,959,603
OTHER A&G	5.08 B 2	SCH 8.2	$ 25,581,481	$ 14,913,071	$ 36,070	$ 10,632,340	45%	$ 4,820,623	ADJUSTED PROPORTIONAL ANNUAL USE	$ 3,280,434
CUSTOMER ACCOUNTS	5.08 B 2	SCH 8.2	$ 347,403	$ 347,403	$ -	$ -	45%	$ -	ADJUSTED PROPORTIONAL ANNUAL USE	$ -
TOTAL ADMINISTRATIVE AND GENERAL			$ 35,323,770	$ 20,636,130	$ 2,915,721	$ 11,771,919		$ 8,213,085		$ 5,589,004
PROPERTY TAXES	5.08 B 3	SCH 8.2	$ 452,000	$ -	$ -	$ 456,305	45%	$ 205,337	ADJUSTED PROPORTIONAL ANNUAL USE	$ 139,732
CAPITAL COST RECOVERY										
PRE-2009 ASSETS	5.09 B 1	ATT K-4								$ 3,118,033
DEBT SERVICE ON NEW ASSETS	5.09 B 2	SCH 5								$ -
REVENUE FUNDED ASSETS-APPROPRIATIONS TO WHOLESALE CAPITAL FUND	5.09 B 3	SCH 6								$ 7,740,688
TOTAL CAPITAL COST RECOVERY										$ 10,858,721
WHOLESALE SHARE OF HETCH HETCHY WATER & POWER										$ 28,903,512 (TO SCHEDULE 1)
WHOLESALE REVENUE COVERAGE[1]										$ -

[1]Adjusted Proportional Annual Use (68.39% X 99.50% = 68.05%)
[2]25% of Wholesale Share of Debt Service

ILLUSTRATION ONLY DRAFT

WHOLESALE REVENUE REQUIREMENT SCHEDULES
HETCH HETCHY CAPITAL COST RECOVERY - ANNUAL DEBT SERVICE
FISCAL YEAR 2009-10
REFERENCE SECTION 5.09.B.1

ATTACHMENT N-2
SCHEDULE 5

	XXXX BOND ISSUE ALL SERIES	XXXX BOND ISSUE ALL SERIES	XXXX BOND ISSUE ALL SERIES	XXXX BOND ISSUE ALL SERIES	XXXX BOND ISSUE ALL SERIES	XXXX BOND ISSUE ALL SERIES	XXXX BOND ISSUE ALL SERIES	TOTAL ALL OUTSTANDIN G BONDS
USE OF BOND PROCEEDS								
POWER PROJECTS	XX.XX%	XX.XX%	XX.XX%	XX.XX%	XX.XX%	XX.XX%	XX.XX%	[redacted]
WATER PROJECTS	YY.YY%	YY.YY%	YY.YY%	YY.YY%	YY.YY%	YY.YY%	YY.YY%	
JOINT PROJECTS	ZZ.ZZ%	ZZ.ZZ%	ZZ.ZZ%	ZZ.ZZ%	ZZ.ZZ%	ZZ.ZZ%	ZZ.ZZ%	
PRINCIPAL PAYMENT	-	-	-	-	-	-	-	-
POWER SHARE	-	-	-	-	-	-	-	-
WATER SHARE	-	-	-	-	-	-	-	-
JOINT SHARE	-	-	-	-	-	-	-	
INTEREST PAYMENT (NET)	-	-	-	-	-	-	-	-
POWER SHARE	-	-	-	-	-	-	-	-
WATER SHARE	-	-	-	-	-	-	-	-
JOINT SHARE								
TOTAL PRINCIPAL AND INTEREST PAYMENT	-	-	-	-	-	-	-	-
POWER SHARE	-	-	-	-	-	-	-	-
WATER SHARE	-	-	-	-	-	-	-	-
JOINT SHARE								
WATER RELATED PRINCIPAL AND INTEREST PAYMENT[1]								
ADJUSTED PROPORTIONAL ANNUAL USE	68.05%	68.05%	68.05%	68.05%	68.05%	68.05%	68.05%	[redacted]
WHOLESALE SHARE	-	-	-	-	-	-	-	-

(TO SCHEDULE 4)

[1]Water Related = 100% of Water Share + 45% of Joint Share

ILLUSTRATION ONLY DRAFT

WHOLESALE REVENUE REQUIREMENT SCHEDULES
HETCH HETCHY CAPITAL COST RECOVERY - REVENUE FUNDED CAPITAL PROJECTS
FISCAL YEAR 2009-10
REFERENCE SECTION 5.04.B

ATTACHMENT N-2
SCHEDULE 6

		PROJECT APPROPRIATION	CLASSIFICATION	WATER RELATED PERCENTAGE	WATER RELATED SHARE	ALLOCATION FACTOR	WHOLESALE SHARE	TOTAL APPROPRIATION ALL YEARS	ALL YEARS ACTUAL EXPENDITURES	FY 2009-10 ACTUAL EXPENDITURES	ENCUMBERED, NOT EXPENDED	APPROPRIATED, UNENCUMBERED BALANCE
CUH931	HH Microwave Replacement	$ 4,000,000	JOINT	45%	$ 1,800,000	ADJUSTED PROPORTIONAL ANNUAL USE	$ 1,224,900	$ 1,224,900	$ 1,224,900	$ 1,224,900	$ -	$ -
CUH977	HH Water R&R - Facilities Maintenance	$ 3,500,000	JOINT	45%	$ 1,575,000	ADJUSTED PROPORTIONAL ANNUAL USE	$ 1,071,788	$ 1,071,788	$ 1,071,788	$ 1,071,788	$ -	$ -
	Total Joint	$ 7,500,000			$ 3,375,000		$ 2,296,688	$ 2,296,688	$ 2,296,688	$ 2,296,688	$ -	$ -
CUH947	SEA - Go Solar Incentive Project	$ 4,000,000	POWER	0%	$ -	ADJUSTED PROPORTIONAL ANNUAL USE	$ -					
CUH971	Alternative Transmission Studies	$ 1,000,000	POWER	0%	$ -	ADJUSTED PROPORTIONAL ANNUAL USE	$ -					
CUH976	HH Water R&R - Power Infrastructure	$ 16,700,000	POWER	0%	$ -	ADJUSTED PROPORTIONAL ANNUAL USE	$ -					
CUH979	Hunters Point Municipal Power	$ -	POWER	0%	$ -	ADJUSTED PROPORTIONAL ANNUAL USE	$ -					
CUH983	Civic Center Sustainability District	$ 1,090,000	POWER	0%	$ -	ADJUSTED PROPORTIONAL ANNUAL USE	$ -					
CUH986	General Fund Dept - Energy Efficiency	$ 7,365,158	POWER	0%	$ -	ADJUSTED PROPORTIONAL ANNUAL USE	$ -					
	Renewable/Generation	$ 3,501,307	POWER	0%	$ -	ADJUSTED PROPORTIONAL ANNUAL USE	$ -					
	Treasure Island Improvement Project	$ 2,700,000	POWER	0%	$ -	ADJUSTED PROPORTIONAL ANNUAL USE	$ -					
	Enterprise Fund Dept - Energy Efficiency	$ 325,722	POWER	0%	$ -	ADJUSTED PROPORTIONAL ANNUAL USE	$ -					
	Total Power	$ 36,682,187			$ -		$ -					
CUH975	HH Water R&R - Water Infrastructure	$ 6,000,000	WATER	100%	$ 6,000,000	ADJUSTED PROPORTIONAL ANNUAL USE	$ 4,083,000	$ 4,083,000	$ 4,083,000	$ 4,083,000	$ -	$ -
	Toulumne River Watershed Protection	$ 2,000,000	WATER	100%	$ 2,000,000	ADJUSTED PROPORTIONAL ANNUAL USE	$ 1,361,000	$ 1,361,000	$ 1,361,000	$ 1,361,000	$ -	$ -
	Total Water	$ 8,000,000			$ 8,000,000		$ 5,444,000	$ 5,444,000	$ 5,444,000	$ 5,444,000	$ -	$ -
	TOTAL ALL WATER RELATED PROJECTS	$ 96,364,374			$ 11,375,000		$ 7,740,688	$ 7,740,688	$ 7,740,688	$ 7,740,688 (TO SCHEDULE 4)	$ - (TO SCHEDULE 4)	$ - (TO SCHEDULE 4)

ILLUSTRATION ONLY DRAFT

WHOLESALE REVENUE REQUIREMENT SCHEDULES
SERVICES OF SFPUC BUREAUS - ALLOCATION TO ENTERPRISES
FISCAL YEAR 2009-10
REFERENCE SECTION 5.05.B

ATTACHMENT N-2
SCHEDULE 7

		EXPENDITURES	ADJUSTMENTS	ADJUSTED EXPENDITURES	HETCH HETCHY POWER	HETCH HETCHY WATER	WATER RETAIL	WATER REGIONAL	WASTEWATER	TOTAL
ALLOCATION FACTORS (SCHEDULE N-7.1)					11.13%	5.96%	16.94%	29.59%	36.37%	
PUC01	General Manager	$ 7,609,114	$ -	$ 7,609,114	$ 847,180	$ 453,820	$ 1,288,884	$ 2,251,548	$ 2,767,682	$ 7,609,114
PUC1101	BizServ-Administration	$ 4,081,981	$ -	$ 4,081,981	$ 454,478	$ 243,456	$ 691,434	$ 1,207,864	$ 1,484,749	$ 4,081,981
PUC1102	Finance	$ 8,817,687	$ -	$ 8,817,687	$ 981,739	$ 525,902	$ 1,493,600	$ 2,609,166	$ 3,207,280	$ 8,817,687
PUC1103	ITS[1]	$ 18,048,158	$ (1,835,357)	$ 16,212,801	$ 1,805,093	$ 966,959	$ 2,746,235	$ 4,797,391	$ 5,897,123	$ 16,212,801
PUC1106	Human Resources	$ 7,678,483	$ -	$ 7,678,483	$ 854,903	$ 457,958	$ 1,300,634	$ 2,272,074	$ 2,792,914	$ 7,678,483
PUC1108	Customer Services	$ 12,262,428	$ (12,262,428)	$ -	$ -	$ -	$ -	$ -	$ -	$ -
PUC12	External Affairs	$ 3,882,455	$ -	$ 3,882,455	$ 432,263	$ 231,556	$ 657,637	$ 1,148,824	$ 1,412,175	$ 3,882,455
	TOTAL	$ 34,752,000	$ (12,731,000)	$ 48,282,521	$ 5,375,656 (TO SCHEDULE 4)	$ 2,879,651 (TO SCHEDULE 4)	$ 8,178,424 (TO SCHEDULE 1)	$ 14,286,867 (TO SCHEDULE 1)	$ 17,561,923	$ 48,282,521

[1]Adjustment for Transfer of SCADA Expenditures to T&D Joint ($1,730,000)

ILLUSTRATION ONLY DRAFT

WHOLESALE REVENUE REQUIREMENT SCHEDULES
SERVICES OF SFPUC BUREAUS - ANNUAL SALARIES
FISCAL YEAR 2009-10
REFERENCE SECTION 5.05.B

ATTACHMENT N-2
SCHEDULE 7.1

DEPARTMENT/DIVISION	ALLOCATION FACTOR	GROUP CODE	SALARIES	PERCENTAGE	
HETCH HETCHY					
POWER		1	$ 6,677,939	6.27%	
WATER		2	$ 1,775,910	1.67%	
JOINT			$ 9,428,450		
WATER SHARE	45%	2	$ 4,242,803	3.98%	
POWER SHARE	55%	1	$ 5,185,648	4.87%	
WATER					
ADMINISTRATION (WTR01)			$ 1,009,246		
RETAIL SHARE	33.4%	3	$ 336,415	0.32%	
REGIONAL SHARE	33.3%	4	$ 336,415	0.32%	
HETCH HETCHY WATER SHARE	33.3%	2	$ 336,416	0.32%	
CDD (WTR03)		3	$ 17,356,922	16.29%	
WATER QUALITY (WTR04)		4	$ 7,282,589	6.83%	
WATER SUPPLY & TREATMENT (WTR05)		4	$ 18,154,689	17.05%	
NATURAL RESOURCES (WTR06)		4	$ 4,682,073	4.39%	
WATER RESOURCE PLANNING			$ 1,419,760		
WATER CONSERVATION		3	$ 355,703	0.33%	
RETAIL WATER RESOURCE PLANNING		3	$ -		
REGIONAL SHARE (NET SALARIES)		4	$ 1,064,057	1.00%	
WASTEWATER		5	$ 38,757,578	36.37%	
SALARIES BY GROUP CODE					
HETCH HETCHY - POWER		1	$ 11,863,587	11.13%	(TO SCHEDULE 7)
HETCH HETCHY - WATER		2	$ 6,355,129	5.96%	(TO SCHEDULE 7)
WATER - RETAIL		3	$ 18,049,040	16.94%	(TO SCHEDULE 7)
WATER- REGIONAL		4	$ 31,529,823	29.59%	(TO SCHEDULE 7)
WASTEWATER		5	$ 38,757,578	36.37%	(TO SCHEDULE 7)
TOTAL SALARIES			$ 106,555,156	100.00%	

ILLUSTRATION ONLY DRAFT

WHOLESALE REVENUE REQUIREMENT SCHEDULES **ATTACHMENT N-2**
CALCULATION OF THE WHOLESALE REVENUE REQUIREMENT **SCHEDULE 8.1**
FISCAL YEAR 2009-10
WATER ENTERPRISE SUMMARY OF OPERATING EXPENSES

	Retail	Wholesale	Regional	Total
Operating Expenses				
Transmission & Distributions	$ 30,163,286	$ -	$ 23,252,946	$ 53,416,232
Adjustments to Transmission & Distribution	$ -	$ -	$ -	$ -
Adjusted Transmission & Distribution	$ 30,163,286	$ -	$ 23,252,946	$ 53,416,232
Source of Supply	$ 1,251,062	$ -	$ 13,692,891	$ 14,943,953
Adjustments to Source of Supply	$ -	$ -	$ -	$ -
Adjusted Source of Supply	$ 1,251,062	$ -	$ 13,692,891	$ 14,943,953
Pumping	$ 3,854,000	$ -	$ 488,682	$ 4,342,682
Adjustments to Pumping	$ -	$ -	$ -	$ -
Adjusted Pumping	$ 3,854,000	$ -	$ 488,682	$ 4,342,682
Treatment	$ -	$ -	$ 30,445,053	$ 30,445,053
Adjustments to Treatment	$ -	$ -	$ -	$ -
Adjusted Treatment	$ -	$ -	$ 30,445,053	$ 30,445,053
Customer Accounts	$ 7,401,169	$ 151,044	$ -	$ 7,552,213
Adjustments to Customer Accounts	$ -	$ -	$ -	$ -
Adjusted Customer Accounts	$ 7,401,169	$ 151,044	$ -	$ 7,552,213
Total Adjusted Operating Expense	$ 42,669,517	$ 151,044	$ 67,879,572	$ 110,700,133
General & Administrative Expense				
COWCAP	$ -	$ -	$ 1,238,009	$ 1,238,009
Services of SFPUC Bureaus	$ 8,178,424	$ -	$ 14,286,867	$ 22,465,291
Other General & Administrative	$ 4,009,891	$ -	$ 8,962,586	$ 12,972,477
Adjustments to General & Administrative	$ -	$ -	$ -	$ -
Adjusted General & Administrative	$ 4,009,891	$ -	$ 8,962,586	$ 12,972,477
Compliance Audit	$ 100,000	$ 100,000	$ -	$ 200,000
Total General & Administrative	$ 12,288,315	$ 100,000	$ 24,487,462	$ 36,875,777
Property Taxes	$ -	$ -	$ 1,417,293	$ 1,417,293
Total	$ 54,957,832	$ 251,044	$ 93,784,327	$ 148,993,203

Source: FAMIS/EIS
Note: All adjustments to be separately identified above

ILLUSTRATION ONLY DRAFT

WHOLESALE REVENUE REQUIREMENT SCHEDULES
CALCULATION OF THE WHOLESALE REVENUE REQUIREMENT
FISCAL YEAR 2009-10
HETCHY HETCHY WATER & POWER SUMMARY OF OPERATING EXPENSES

ATTACHMENT N-2
SCHEDULE 8.2

	Power	Water	Joint	Total
Operating Expenses				
Purchased Power & Wheeling	$ 28,953,676			$ 28,953,676
Adjustments to Purchased Power & Wheeling	$ -			$ -
Adjusted Purchased Power & Wheeling	$ 28,953,676			$ 28,953,676
Operations				
Hydraulic Generation	$ 2,900,291	$ -	$ 3,200,394	$ 6,100,685
Transmission & Distribution	$ -	$ -	$ -	$ -
Water Quality Expense	$ -	$ 9,557,862	$ -	$ 9,557,862
Adjustments to Operations	$ -	$ -	$ -	$ -
Adjusted Operations	$ 2,900,291	$ 9,557,862	$ 3,200,394	$ 15,658,547
Maintenance				
Hydraulic Generation	$ 1,840,096	$ 3,238,622	$ 8,581,952	$ 13,660,670
Transmission & Distribution	$ 3,359,385	$ -	$ -	$ 3,359,385
Water Quality Expense	$ -	$ -	$ -	$ -
Adjustments to Maintenance	$ (151,442)	$ -	$ -	$ (151,442)
Adjusted Maintenance	$ 5,048,039	$ 3,238,622	$ 8,581,952	$ 16,868,613
Total Adjusted Operating Expense	$ 36,902,006	$ 12,796,484	$ 11,782,346	$ 61,480,836
General & Administrative Expense				
COWCAP	$ -	$ -	$ 1,139,579	$ 1,139,579
Services of SFPUC Bureaus	$ 5,375,656	$ 2,879,651	$ -	$ 8,255,307
Customer Accounts	$ 347,403	$ -	$ -	$ 347,403
Adjustments to Customer Accounts	$ -	$ -	$ -	$ -
Adjusted Customer Accounts	$ 347,403	$ -	$ -	$ 347,403
Other General & Administrative	$ 14,913,071	$ 36,070	$ 10,632,340	$ 25,581,481
Adjustments to General & Administrative	$ -	$ -	$ -	$ -
Adjusted General & Administrative	$ 14,913,071	$ 36,070	$ 10,632,340	$ 25,581,481
Total General & Administrative	$ 20,636,130	$ 2,915,721	$ 11,771,919	$ 35,323,770
Property Taxes	$ -	$ -	$ 452,000	$ 452,000
Total	$ 57,538,136	$ 15,712,205	$ 24,006,265	$ 97,256,606

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Source: FAMIS/EIS
Note: All adjustments to be separately identified above

SCHEDULE OF PROJECTED WATER SALES, WHOLESALE REVENUE REQUIREMENTS, AND WHOLESALE RATES **ATTACHMENT N-3**
CONTRACT REFERENCE: ARTICLE 6.03.A.3

	FISCAL YEAR N	N+1	N+2	N+3	N+4
OPERATION AND MAINTENANCE EXPENSES					
SOURCE OF SUPPLY	$ 9,364,568	$ -	$ -	$ -	$ -
PUMPING	$ 334,210	$ -	$ -	$ -	$ -
TREATMENT	$ 20,821,372	$ -	$ -	$ -	$ -
TRANSMISSION & DISTRIBUTION	$ 15,902,690	$ -	$ -	$ -	$ -
CUSTOMER ACCOUNTS	$ 151,044	$ -	$ -	$ -	$ -
TOTAL OPERATION AND MAINTENANCE EXPENSES	$ 46,573,884	$ -	$ -	$ -	$ -
ADMINISTRATIVE AND GENERAL EXPENSES					
COWCAP	$ 520,857	$ -	$ -	$ -	$ -
SF PUBLIC UTILITIES COMMISSION	$ 9,770,788	$ -	$ -	$ -	$ -
OTHER A&G	$ 3,770,749	$ -	$ -	$ -	$ -
COMPLIANCE AUDIT	$ 100,000	$ -	$ -	$ -	$ -
TOTAL ADMINISTRATIVE AND GENERAL EXPENSES	$ 14,162,394	$ -	$ -	$ -	$ -
PROPERTY TAXES	$ 969,287	$ -	$ -	$ -	$ -
CAPITAL COST RECOVERY					
PRE 2009 ASSETS	$ 24,051,326	$ -	$ -	$ -	$ -
DEBT SERVICE ON NEW ASSETS	$ 17,952,931	$ -	$ -	$ -	$ -
REVENUE FUNDED CAPITAL	$ 8,381,400	$ -	$ -	$ -	$ -
TOTAL CAPITAL COST RECOVERY	$ 50,385,657	$ -	$ -	$ -	$ -
WHOLESALE SHARE HHW&P	$ 28,903,512	$ -	$ -	$ -	$ -
WHOLESALE REVENUE REQUIREMENT	$ 140,994,734	$ -	$ -	$ -	$ -
BALANCING ACCOUNT AS OF JUNE 30	$ -	$ -	$ -	$ -	$ -
INTEREST ON BALANCING ACCOUNT	$ -	$ -	$ -	$ -	$ -
WHOLESALE REVENUES AT EXSITING RATE	$ (127,485,900)	$ -	$ -	$ -	$ -
WHOLESALE EXCESS USE CHARGES	$ -	$ -	$ -	$ -	$ -
SETTLEMENT CREDITS AND OTHER ADJUSTMENTS	$ 21,000	$ -	$ -	$ -	$ -
1984 AGREEMENT BALANCING ACCOUNT CREDITS	$ 1,997,220	$ -	$ -	$ -	$ -
WHOLESALE DEBIT SERVICE COVERAGE RESERVE	$ 4,488,233	$ -	$ -	$ -	$ -
WHOLESALE DEFICIENCY OR CREDIT	$ 20,015,287	$ -	$ -	$ -	$ -
PERCENT WHOLESALE DEFICIENCY OR CREDIT OF REVENUES AND EXCESS USE CHARGES	15.7%				
PROJECTED WATER SALES (CCF)	85,920,000	0	0	0	0
WHOLESALE DEFICIENCY OR CREDIT ($/CCF)	0.23	0	0	0	0
PROJECTED WHOLESALE RATE (UNIT COST ($/CCF)	1.66	0	0	0	0
PROJECTED SERVICE CHARGE REVENUES	$ 4,620,300				
PROJECTED VOLUME CHARGE REVENUES	$ 142,627,200				
TOTAL WHOLESALE REVENUES	$ 147,247,500				

ILLUSTRATION ONLY DRAFT

ATTACHMENT O
STATEMENT OF WHOLESALE REVENUE REQUIREMENT/ CHANGES IN BALANCING ACCOUNT
YEAR ENDED JUNE 30
(Section 7.02.B)

	FY 2008-09 Allocation to Wholesale Customers	FY 2009-10 Allocation to Wholesale Customers	Difference
Wholesale Revenue Requirement Calculation:			
Operating and maintenance (O&M) expense:			
San Francisco Water Enterprise:			
Source of supply	$ 9,133,025	$ 9,364,568	$ 231,543
Pumping	$ 325,946	$ 334,210	$ 8,264
Purification	$ 20,437,460	$ 20,821,372	$ 383,912
Transmission and distribution	$ 9,350,279	$ 15,902,690	$ 6,552,411
Customer Accounts	$ 224,255	$ 151,044	$ (73,211)
Total SFWE operating and maintenance	$ 39,470,965	$ 46,573,884	$ 7,102,919
Hetch Hetchy Water and Power (HHWP):			
Operating expenses	$ 10,359,786	$ 7,484,165	$ (2,875,621)
Maintenance expenses	$ 4,526,240	$ 4,831,890	$ 305,650
Total HHWP operating and maintenance	$ 14,886,026	$ 12,316,055	$ (2,569,971)
Administrative and general (A&G) expenses:			
COWCAP			
SFWE	$ 512,438	$ 520,857	$ 8,419
HHWP	$ 162,364	$ 348,968	$ 186,604
SF Public Utilities Commission:			
SFWE	$ 7,461,835	$ 9,770,788	$ 2,308,953
HHWP	$ 2,357,622	$ 1,959,603	$ (398,019)
Other A&G – SFWE	$ 8,234,799	$ 3,770,749	$ (4,464,050)
Other A&G – HHWP	$ -	$ 3,280,434	$ 3,280,434
Compliance audit	$ 95,338	$ 100,000	$ 4,662
Total administrative and general expenses	$ 18,824,396	$ 19,751,399	$ 927,003
Property taxes (outside city only):			
SFWE	$ 964,040	$ 969,287	$ 5,247
HHWP	$ 120,923	$ 139,732	$ 18,809
Total property taxes	$ 1,084,963	$ 1,109,019	$ 24,056
Capital Cost Recovery			
Pre-2009 Assets			
SFWE		$ 24,051,326	
HHWP		$ 3,118,033	
Debt Service on New Assets			
SFWE		$ 17,952,931	
HHWP		$ -	
Revenue Funded Assets			
SFWE		$ 8,381,400	
HHWP		$ 7,740,688	
Total Capital Cost Recovery	$ 46,378,941	$ 61,244,378	$14,865,437
Total Wholesale Revenue Requirement	$ 120,645,291	$ 140,994,735	$20,349,444
Balancing Account July 1	$ 21,176,614	$ -	
Interest on adjusted beginning balance	$ 529,415	$ -	
Wholesale revenues billed	$ (123,604,000)	$ (147,247,500)	
Excess use charges billed	$ -	$ -	
Wholesale Revenue Coverage Reserve	$ -	$ 4,488,233	
Other adjustments	$ -	$ -	
Settlement adjustments	$ 21,006	$ 21,006	
1984 Agreement Balancing Account Credits	$ -	$ 1,997,220	
Balancing Account June 30	$ 18,768,326	$ 253,694	

ILLUSTRATION ONLY DRAFT

Attachment P
REPRESENTATION LETTER

Certification Pursuant to Water Sales Agreement (the Agreement) between the City and County of San Francisco (San Francisco) and certain wholesale customers in the counties of San Mateo, Santa Clara, and Alameda (the Wholesale Customers) effective July 1, 2009.

Each of the undersigned certifies that:

1. I have reviewed San Francisco Water Department and Hetch Hetchy Water & Power Department Report on the Calculation of the Wholesale Revenue Requirement and Statement of Changes in the Balancing Account (the Statement) for the year ended June 30, 200X;

Based on my knowledge, this report and Statement do not contain any untrue statements of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by the report;

Based on my knowledge, the Statement and other financial information included in the report, fairly presents in all material respects the proper costs incurred and allocated to the Wholesale Customers in accordance with the provisions of the Agreement.

The below certifying officers and I are responsible for establishing and maintaining internal control over financial reporting and have:

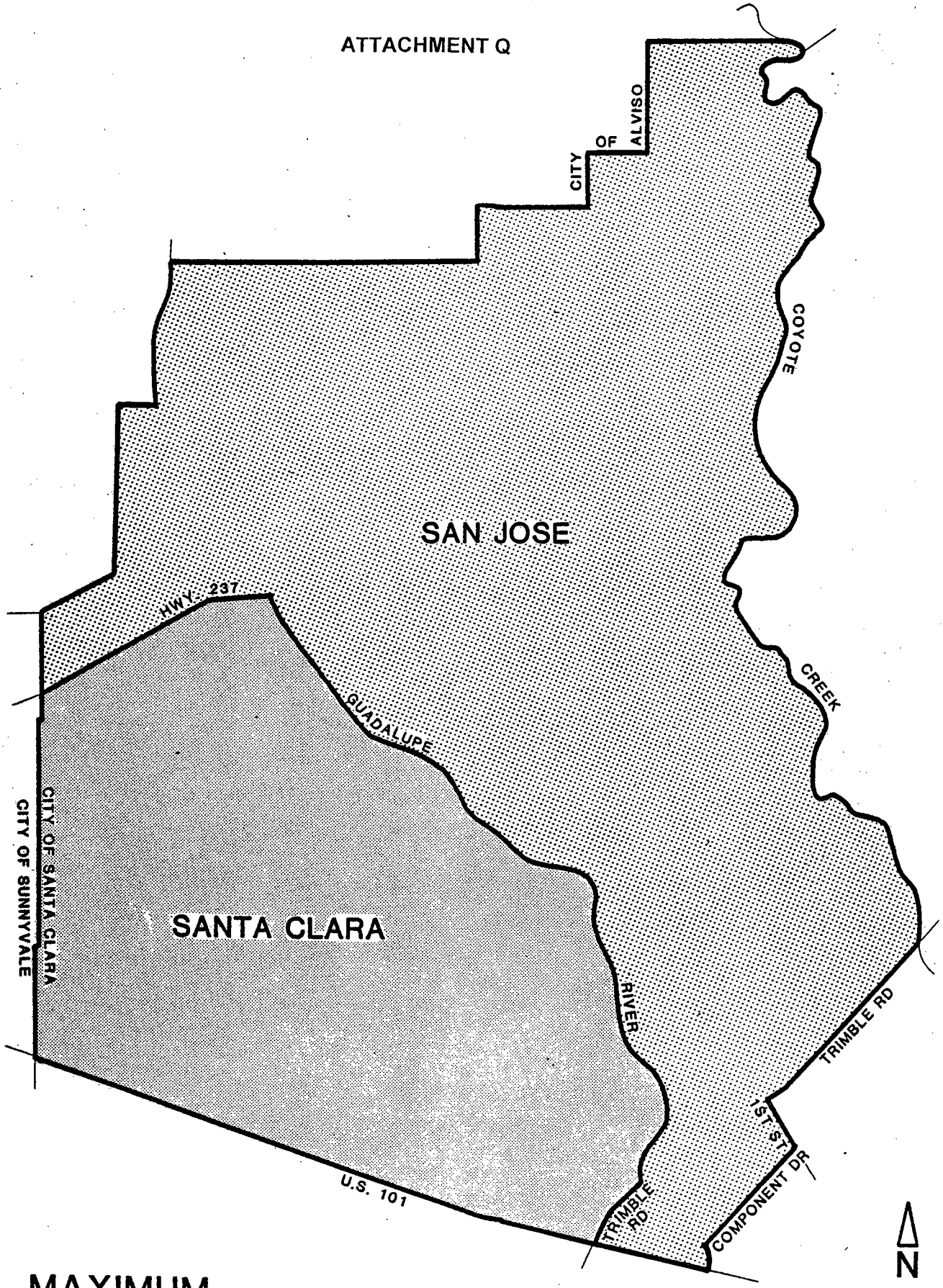
Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting for purposes of the preparation of the Statement.

Evaluated the effectiveness of the allocation procedures to ensure compliance with the terms of the Agreement.

The Statement fully complies with the contractual requirements of the Agreement and fairly presents, in all material respects, the allocation of costs to the Wholesale Customers in accordance with the Agreement.

General Manager, SFPUC	Date
Assistant General Manager & Chief Financial Officer, SFPUC	Date
Finance Director, SFPUC	Date
Accounting Manager, SFPUC	Date
Financial Planning Manager, SFPUC	Date
Senior Rates Administrator, SFPUC	Date

ATTACHMENT Q



MAXIMUM SERVICE AREAS

Appendix E- Water Rates

Water and Sewer Service

We welcome you as a customer. Whether you have just moved into the City of Millbrae or simply are relocating within the City of Millbrae, we hope the following information will be helpful. Our job is to serve you and we take it seriously.

Click here to learn about the Drought Emergency Regulations. To report a drought regulation-water waste violation please call 650-259-2348 or e-mail pwadmin@ci.millbrae.ca.us.

New Customer Accounts

New residents or businesses will have to establish an account for Water and Sewer Service. This utility service can be set up by visiting the Finance Department's Customer Service counter in the lobby at

Millbrae City Hall
621 Magnolia Ave
Millbrae, CA

or by calling (650) 259-2420

- Water and Sewer Service is provided and maintained by the City of Millbrae Public Works Department.
- Utility statement generation and customer accounts are maintained by the City of Millbrae Finance Department.

Note: A deposit of $150.00 is required for residential property service. The deposit will be refunded after one year of prompt payment history, or requested discontinuance of service.

The required deposit for a Business account varies as it is based on the type of business conducted

Water and Sewer Service Statement/Billing

Water and Sewer Services are billed together bimonthly. The month a customer will receive their statement varies depending on their location, as billing cycles are specific for each area within the City of Millbrae.

Water consumption is metered, and meters are read every other month by City of Millbrae Public Works Department Meter Readers.

Effective Water Rates					
	Water Rates Effective on or After				
Effective Date	Oct 1 2017	July 1 2018	July 1 2019	July 1 2020	July 1 2021
FIXED MONTHLY SERVICE CHARGE					
Fixed monthly charge based on meter size					
Meter Size					
3/4-inch	$20.00	$22.50	$25.00	$27.50	$30.00
1-inch	25.00	28.13	31.25	34.38	37.50
1 1/2-inch	50.00	56.25	62.50	68.75	75.00
2-inch	80.00	90.00	100.00	110.00	120.00
3-inch	150.00	168.75	187.50	206.25	225.00
4-inch	250.00	281.25	312.50	343.75	375.00
6-inch	500.00	562.50	625.00	687.50	750.00
8-inch	800.00	900.00	1,000.00	1,100.00	1,200.00
10-inch	1,150.00	1,293.75	1,437.50	1,581.25	1,725.00
Fire Service Charge					
Per Connection	$32.53	$36.60	$40.67	$44.74	$48.81
Quantity Charge					
Billed per hundred cubic feet (ccf) of metered water use (1 ccf = 748 gallons = 1 unit)					
All Water Use	$8.00	$9.20	$10.40	$11.60	$12.80

Sample Bill Calculation for rates effective July 1, 2017, for a typical single family home with 3/4-inch meter using the average 6 units (ccf) of water per month (about 150 gallons of water per day).

Fixed Monthly Service Charge	Quantity Charge	Total Monthly Charge	Bi-Monthly Water Bill (For 2 months)
$20.00	6 unites (ccf) x $8.00 = $48.00	$68.00	$136.00

Actual bills will depend on each customer's meter size and water consumption.

Effective Sewer Rates			
	Effective Date		
	Current (Eff. 7/1/2017)	7/1/2018	7/1/2019
Quantity Charges ($ per ccf)			
Residential, Universal Life Support	$5.86	6.23	6.62
Retail, Commercial and Other Categories			
Restaurants	8.71	9.26	9.84
Hotels / Motels, Food Processors	10.92	11.61	12.34
Supermarkets, Schools w/ Food Service	10.64	11.31	12.02
Auto – Service Stations	7.36	7.82	8.31
Schools w/ No Food Service	5.22	5.55	5.90
Commercial	5.49	5.84	6.21
Groundwater	6.59	7.01	7.45
Pretreatment 1 Charges ($ per ccf)			
Residential, Universal Life Support	$0.00	0.00	0.00
Retail, Commercial and Other Categories as listed above	2.10	2.23	2.37
Pretreatment 2 Charges ($ per ccf)			
Residential, Universal Life Support	$0.00	0.00	0.00
Retail, Commercial and Other Categories as listed above	1.56	1.66	1.76
Service Charges ($ per month)			
Residential	$51.20	54.90	58.90
Universal Life Support	38.40	41.20	44.20
Retail, Commercial and Other Categories as listed above	51.20	54.90	58.90

In July 2017, the City replaced the SSO charge with the Clean Bay Fee. The Clean Bay Fee modified charges to reapportion costs between residential customers, multi-family units, and commercial customers. As a result, many customers initially paid less each month compared to their SSO charge. The Clean Bay Fee will remain in effect until the loans and/or bonds associated with sewer improvements are paid in full. The repayment timeline is dependent on the amount and type of debt that the City takes on to fund necessary capital improvements.

Effective Clean Bay Charges *These charges replaced the City's Sanitary Sewer Overflow Charges in 2017.*					
	Rates Effective On or After				
	July 1, 2017	July 1, 2018	July 1, 2019	July 1, 2020	July 1, 2021
RESIDENTIAL FIXED MONTHLY CHARGES *Fixed monthly charge per EDU or dwelling unit*					
Single Family Charge per Dwelling Unit	$21.50	22.58	23.71	24.90	26.15
Multi-Family Charge per Dwelling Unit	12.90	13.55	14.23	14.94	15.69
COMMERCIAL / NON-RESIDENTIAL QUANITYT CHARGES *Charges per hundred cubic feet (ccf) of estimated monthly wastewater discharge (1 ccf = 748 gallons = 1 unit)**					
Quantity Charge ($ / ccf)	$3.52	3.70	3.89	4.08	4.28
Minimum Monthly Charge	12.90	13.55	14.23	14.94	15.69
* Wastewater discharge is estimated based on average metered water use from November to February, or December to March, depending on your billing cycle.					

The payment due date is shown on the statement. To ensure proper credit to your account, always enclose the bottom portion of your statement with your payment, and use the envelope provided. To avoid a delinquent notice, and/or a penalty for late payment, be sure to mail your payment before the due date. Payments can also be made at the drop box located in the customer parking lot at City Hall, or the Finance Department's Customer Service counter located in the lobby of City Hall.

Other Questions & Concerns

Invariably, questions may arise regarding your Water and Sewers statement. Some may be general in nature while others may be more specific. For example:

- Why does a certain charge appear on my statement?
- What can I do if I am unable to pay my statement by the due date?
- What penalties are charged for late payment?
- What can I do if my water service is turned off for nonpayment?

The questions listed above, and other questions or concerns can be answered by our Customer Service Staff, either in person at the Finance Department Customer Service counter, located at City Hall, calling (650) 259-2420, or send an e-mail to utilitybilling@ci.millbrae.ca.us.

Staff can also redirect your questions or concerns to the proper department.

Maintenance Responsibility

The City of Millbrae Public Works Department is responsible for the water distribution system, the water meter, and the service line between the meter and the distribution system. In addition, the City of Millbrae Public Works Department is responsible for the sewage collection system excluding laterals and their connections to the system.

Customers are responsible for the internal plumbing from the water meter into the structure and for sewer laterals out to the City street sewer mains.

When a problems occur which are suspected to be originating in the City system, the City of Millbrae Public Works Department should be called. Notable examples of problems in the City system are low or no water pressure or sewage backup through floor drains. When indications of a problem are not the internal responsibility of the individual customer, please call the City of Millbrae Public Works Department before employing the services of a private plumber.

Help in an Emergency

The top priority of the City of Millbrae Public Works Department is to provide high-quality Water and Sewer Services to the City of Millbrae customers. Nevertheless, problems do occur. This is understandable, considering the large volume of water and wastewater moving daily through more than 70 miles of water lines, 60 miles of sewer lines, and 21 miles of storm drains.

Please be advised the water line from the meter to the residence or place of business is the property owner's responsibility. In addition, the sanitary sewer lateral from the structure to the City's sewer line is considered to be part of the plumbing and is the property owner's responsibility. On the other hand, if you experience a problem and suspect it is related to a main line system, please let us know. Call the City of Millbrae Public Works Department at:

- (650) 259-2375 during regular office hours (Monday - Friday 8:30am to 4:30pm)
- If emergencies arise during non business hours, weekends or holidays, please call (650) 363-4951

Appendix F- Indoor Water Conservation Ordinance

ORDINANCE NO. 732

CITY OF MILLBRAE, COUNTY OF SAN MATEO STATE OF CALIFORNIA

* * *

AN ORDINANCE OF THE CITY OF MILLBRAE ADDING CHAPTER 9.60 OF TITLE 9 OF THE MILLBRAE MUNICIPAL CODE REGARDING INDOOR WATER USE EFFICIENCY REGULATIONS

Be it ordained by the City Council of the City of Millbrae as follows:

SECTION 1: ADDING CHAPTER 9.60, INDOOR WATER USE EFFICIENCY REGULATIONS, OF TITLE 9 OF THE MILLBRAE MUNICIPAL CODE.

Chapter 9.60 of the Millbrae Municipal Code is hereby added to read as follows:

Chapter 9.60

INDOOR WATER USE EFFICIENCY REGULATIONS

Sections:

9.60.010 Title; Purpose
9.60.020 Definitions
9.60.030 Applicability
9.60.040 Minimum Indoor Fixture Requirements Table
9.60.050 Compliance with the Ordinance
9.60.060 Components of the Indoor Water Use Efficiency Checklist
9.60.070 Penalties and Enforcement
9.60.080 Public Education
9.60.090 Severability

9.60.010 Title; Purpose

This Ordinance shall be known as the City of Millbrae Indoor Water Use Efficiency Ordinance. The purpose of the Indoor Water Use Efficiency Regulation is to enhance public health and welfare by encouraging water conservation measures in the design, construction, and maintenance of buildings. In light of the limited water supply available to the City through the Hetch Hetchy System administered by the San Francisco Public Utilities Commission, the water use efficiency practices required in this Ordinance are intended to achieve the following goals:

To encourage the conservation of natural resources;

B. To increase water efficiency and lower water costs;

C. To reduce the operating and maintenance costs for buildings;

D. To promote a healthier indoor environment;

E. To give clearer guidance to ensure compliance with State and Federal law.

9.60.020 Definitions

For purposes of this chapter, the following definitions pertain.

"Certified Professional" means a licensed contractor, licensed architect, licensed professional engineer by the State of California.

"Energy Star Qualified" means that a given fixture meets the United States Environmental Protection Agency standard for an energy efficient product.

"Gal / Cycle" means gallons per cycle.

"Gal / 100 lbs Ice" means gallons per hundred pounds of ice.

"GPF" means gallons per flush.

"GPM" means gallons per minute.

"Grams" means the amount of solids that can be moved through a toilet of 1.28 or less gallons per flush.

"Local Agency" means a city or county, including a charter city or charter county, or water district that is responsible for adopting and implementing this ordinance. The local agency is also responsible for the enforcement of this ordinance, including but not limited to, in the case of a city or county, approval of a permit and plan check or design review of a project; and in the case of a district, approval of a new or expanded water service.

"Local Water Purveyor" means any entity, including a public agency, city, county, or private water company that provided retail water service.

"LSI" means Langlier Saturation Index providing an indication of the degree of saturation of water with respect to calcium carbonate related to cooling tower efficiency.

"Permit" means the document issued by local agencies in connection with new construction, remodels or renovations and which authorizes the lawful initiation of construction, improvements, or repairs to a building or structure.

"Project Applicant" means the individual or entity submitting an Indoor Water Use Efficiency Checklist as required in MMC Section 9.60.060, and requesting a permit, plan check, design review, or new or expanded water service application from the local agency. A project applicant may be the property owner or his or her designee.

"RMF" means residential multi-family.

"Sq. Ft." means square feet.

"Water Factor" means the number of gallons per cycle per cubic foot that a clothes washer uses.

"Working Days" means Monday through Friday, excluding city holidays.

9.60.030 Applicability

A. The provisions of this ordinance shall apply to the following projects:

1. Any New Construction.

2. All Additions with new or expanded water use.

3. Remodels involving one or more of the following:

A. Kitchen
B. Bathroom(s)
C. Remodel of a building which exceeds $50,000 in construction valuation
D. Remodeling involving 50% or more of the building interior
E. Expanded water service (except for fire sprinkler systems)

B. The provisions of this ordinance shall not apply to:

1. Existing buildings not seeking a building permit.

2. Registered local, state or federal historic sites.

3. Remodels where, at the discretion of the Building Official, the unique configuration of the building, its drainage system or portions of the public sewer, or both, are incompatible with efficiency standards listed in the Indoor Water Use Efficiency Table and require a greater quantity of water to flush the system in a manner that is consistent with public health. In order to make this decision, documentation must be provided by the project applicant wishing to use this exception. The applicant must show that the system will not function properly with the reduced water flow and justify the requested increase in the amount of water needed to make the system function while still meeting the intent of the efficiency standards.

9.60.040 Minimum Indoor Fixture Requirements

All new construction and applicable additions and remodels will have, at the minimum, fixtures that comply with the efficiency standards listed below:

Fixture	Residential - 1 or 2 Family	Multi-Family, Commercial or Non-Residential
Toilets	≤ 1.28 gpf, and ≥ 500 grams	≤ 1.28 gpf, and ≥ 500 grams
Urinals	≤ 0.5 gpf	≤ 0.5 gpf
Shower Heads	≤ 1.5 gpm	≤1.5 gpm
Bathroom Faucets	≤ 0.5 gpm	≤ 0.5 gpm
Kitchen Faucets	≤ 1.5 gpm	≤ 1.5 pgm
Clothes Washers	≤ 6.0 Water Factor	≤ 6.0 Water Factor
Dish Washers	≤ 6.5 gal / cycle or Energy Star Qualified	Energy Star Qualified
Cooling Towers	N/A	≥ 5-10 cycles or ≥ 2.5 LSI
Food Steamers	N/A	Boiler Less or Self Contained
Ice Machines	N/A	≤ 25 gal/100 lbs ice, or air cooled
Pre-Rinse Spray Valves	N/A	≤ 1.15.gpm
Automatic Vehicle Wash Facilities	N/A	≥ 50% or more of water used must be recycled on site
Commercial Refrigeration	N/A	Closed Loop, or Air Cooled
Water Meters	Separate meter for outdoor landscaping > 5000 sq. ft.	Sub-meters, and Separate meter for outdoor landscaping > 5000 sq. ft.

The City shall incorporate the forgoing table into an Indoor Water Use Efficiency Checklist.

9.60.050 Compliance with the Ordinance

A. The City of Millbrae shall:

1. Provide the project applicant with the ordinance and the Indoor Water Use Efficiency Checklist requirements when it provides applicant with the procedures for permits, plan checks, design reviews or new or expanded water service applications.

2. Review the Indoor Water Use Efficiency Checklist submitted by the project applicant.

3. Approve or deny the project applicant's Indoor Water Use Efficiency checklist submittal.

4. Only upon approval of the Indoor Water Use Efficiency Checklist, issue a permit or approve the plan check, design review or new expanded water service application for the project applicant.

5. In its discretion, inspect the installation of the water efficient fixtures and appliances to verify that they have been installed and are performing at the required use levels.

B. The Project Applicant shall:

1. Meet the minimum water use efficiency standards for indoor fixtures and appliances provided for in the Indoor Water Use Efficiency Table and Checklist.

2. Prior to construction, submit all portions of the Indoor Water Use Efficiency Checklist to the city for verification.

9.60.060 Components of the Indoor Water Use Efficiency Checklist

The Indoor Water Use Efficiency Checklist shall require at a minimum:

A. Project Information.

B. Quantity and unit water use factors of all indoor fixtures and appliances relative to the standards listed in the Indoor Water Use Efficiency Checklist.

C. Contain the following statements to be completed by the project applicant: "I certify that the subject project meets the specified requirements of the Indoor Water Use Efficiency Ordinance."

D. Bear the signature of the project applicant, or that of a certified professional.

9.60.070 Penalties and Enforcement

A. Violation and Notice of Correction

It is unlawful for any person, firm, partnership, association, or corporation subject to the requirements of this ordinance to fail to comply with the water use efficiency requirements or to alter or replace the fixtures and appliances required by this ordinance with non-compliant fixtures or appliances after the completion of the construction or remodel. Whenever the City determines that a violation of this ordinance has occurred, the City may serve a notice of correction on the owner(s) of the property on which the violation is situated. The owner(s) of record shall have a maximum of ninety (90) days to take corrective action. Failure to take corrective action can lead to infraction or misdemeanor actions being taken by the City.

B. In addition to any other remedy provided in the Millbrae Municipal Code, any provision of this ordinance may be enforced by an administrative order issued pursuant to Section 1.05.030. The hearing officer shall be as outlined in Section 1.05.030 of the Code.

9.60.080 Public Education

The City of Millbrae shall provide information to all applicants regarding the installation of water efficient fixtures and appliances and on rebates for plumbing fixtures and appliances.

9.60.090 Severability

If any section, subsection, provision or part of this ordinance, or its application to any person or circumstance, is held to be unconstitutional or otherwise invalid, the remainder of this ordinance, and the application of such provision to other person or circumstances, shall not be affected thereby and shall remain in full force and effect and, to that end, the provisions of this ordinance are severable.

SECTION 2: AMENDING SECTION 1.05.020, PENALTY PROVISIONS - ENFORCEMENT - CITATION AUTHORITY, OF TITLE 1 OF THE MILLBRAE MUNICIPAL CODE.

Section 1.05.020 of the Millbrae Municipal Code is hereby amended as set forth below:

Under item 5, include the referenced chapter to the designated position.

Associate Engineer - Add Chapter 9.6
Engineering Technician - Add Chapter 9.60
Water Resources and Conservation - Add Chapter 9.60

SECTION 3: EFFECTIVE DATE; PUBLICATION; POSTING.

This ordinance shall be in full force and effect thirty (30) days from and after its passage. At least five (5) days prior to its adoption and within fifteen (15) days after its adoption, a summary of this ordinance, the latter summary to include the names of those City Council members voting for and against the ordinance, shall be published once in a newspaper of general circulation printed and published in the County of San Mateo and circulated in the City of Millbrae. At the time of the publication of each summary, the City Clerk shall post in the Office of the City Clerk a copy of the full text of this ordinance in compliance with Section 36933(c)(1) of the Government Code.

INTRODUCED at a regular meeting of the City Council of the City of Millbrae held on the 9th day of March, 2010.

PASSED AND ADOPTED at a regular meeting of the City Council of the City of Millbrae held on the 23rd day of March, 2010.

Paul S...

MAYOR

ATTEST:

Angela Norris

CITY CLERK

Ordinance No. 732

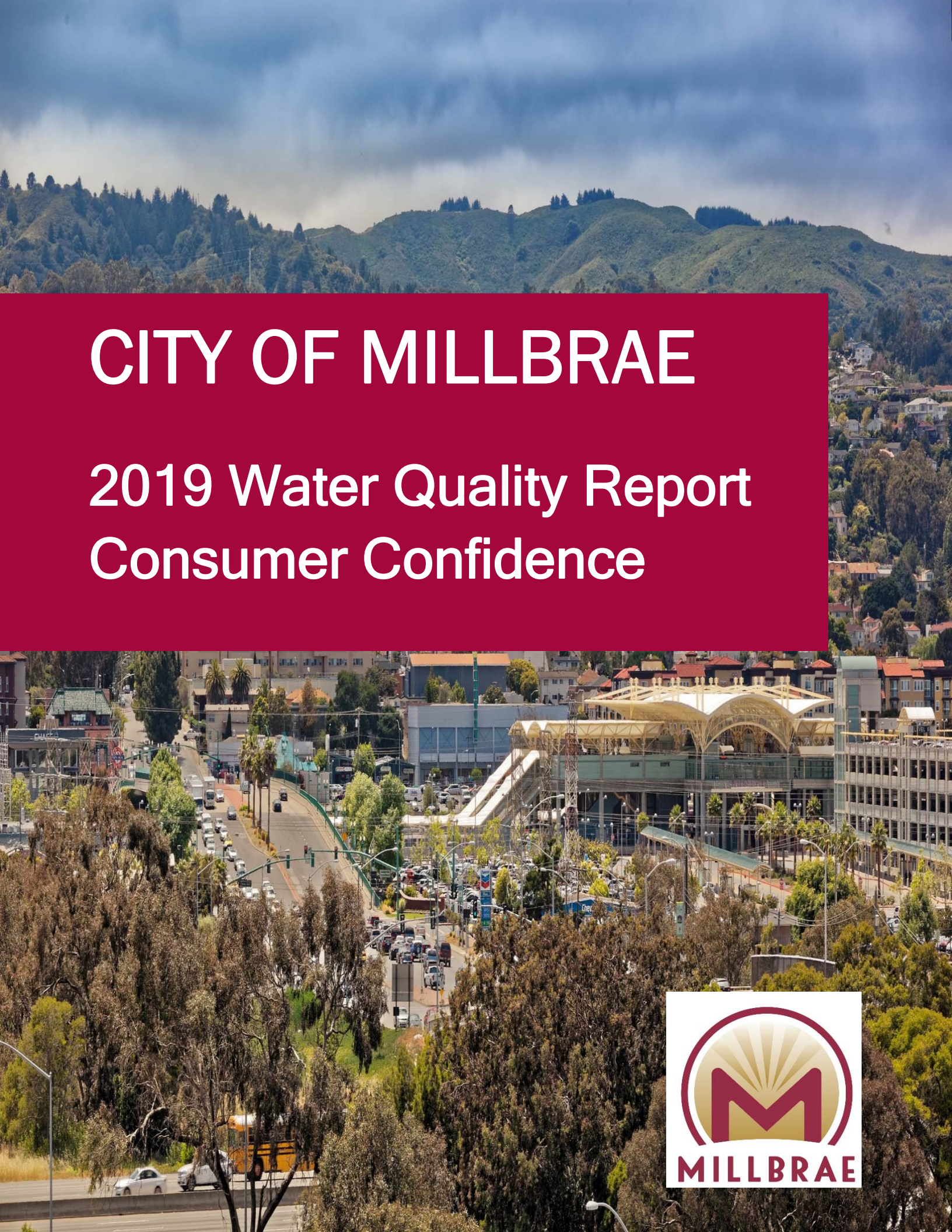
I do hereby certify that the foregoing Ordinance was duly and regularly passed and adopted by the City Council of the City of Millbrae this 23rd day of March 2010, by the following vote:

AYES:	COUNCILMEMBERS:	Seto, Quigg, Colapietro, Papan, and Holober
NOES:	COUNCILMEMBERS:	None
ABSENT:	COUNCILMEMBERS:	None
ABSTAIN:	COUNCILMEMBERS:	None
EXCUSED:	COUNCILMEMBERS:	None

Angela Norris

CITY CLERK

Appendix G- Water Quality Report



CITY OF MILLBRAE

2019 Water Quality Report
Consumer Confidence

MILLBRAE

The City of Millbrae Public Works Department is pleased to present you the 2019 Water Quality Report. Pursuant to federal regulations mandated by the Safe Drinking Water Act, all water consumers are to be provided annual information about their water and its sources.

This report explains he origin of the drinking water supply and the specific treatment(s) it receives by the City of Millbrae, Public Works, Utilities & Operations staff and the San Francisco Public Utilities Commission (SFPUC).

The City of Millbrae believes it is in everyone's interest to obtain a high quality and reliable water supply because it is integral to personal health, environmental integrity and community prosperity.

FOR MORE INFORMATION:

City of Millbrae	Public Works Department	(650) 259-2374	www.ci.millbrae.ca.us
SF Public Utilities Commission (SFPUC)	Customer Service	(415) 551-3000	www.sfwater.org
SF Water Resources Control Board	Drinking Water	(916) 449-5577	www.swrcb.ca.gov
US Environmental Protection USEPA	Safe Drinking Water Hotline	(800) 429-9791	www.epa.gov
American Water Works Assoc.	AWWA Contact Line	(800) 926-7337	www.aawa.org

PLEASE USE WATER WISELY

Please see last page of this report for water use guidelines, and water-wise tips and resources.

Water Quality and You

Water quality is extremely important because we cannot survive without a clean and reliable source of it. The City of Millbrae, along with our water supplier, The San Francisco Public Utilities Commission (SFPUC), the California Department of Public Health (CDPH), and the United States Environmental Protection Agency (USEPA) are all working simultaneously to ensure that we provide the highest quality water and to educate water consumers and encourage their involvement in relevant decisions. Consumers who familiarize themselves with the basic drinking water information contained in this report will be able to participate more effectively in this decision-making process. Together, we can be a great force to promote programs that will aid us in continuing to deliver water that meets the highest possible standards.

Millbrae Water Quality Assurance Program

The Millbrae Water Division conducts a comprehensive water quality assurance program. We collect and report over forty samples a month throughout our system to regularly monitor water quality. We send samples to a state certified laboratory for testing and are pleased to report that all samples have tested negative for coliforms and that the City had zero violations related to any maximum contaminant level (MCL) in the calendar year 2019.

Other water samples are collected periodically to check for levels of lead and copper, disinfection by-products trihalomethanes and haloacetic acids (THMs and HAAs) and general physical components as required by state and federal regulations. The City of Millbrae received a waiver for asbestos sampling.

The City of Millbrae continually monitors all five main entry points to our distribution system and also other key points in the distribution system such as tank sites and pump locations. These sites are monitored by our computerized SCADA (Supervisory Control and Data Acquisition) system that provides our Water Division managers and continuous automated water quality information.

In addition, the Millbrae Water Division, along with the San Mateo County Environmental Health Department administers and manages a cross-connection prevention program to eliminate possible contamination to our drinking water through backflow prevention devices. The program includes yearly testing all city-owned backflow devices and monitoring of compliance on privately owned backflow devices.*

**A note to residents and business owners who have backflow prevention devices: State regulations require that all backflow prevention devices be tested annually by a certified inspector.*



Watersheds Protection



SFRWS conducts watershed sanitary surveys for the Hetch Hetchy source annually and for the local water sources and UNHHS every five years. The latest local sanitary survey was completed in 2016 for the period of 2011-2015. The last watershed sanitary survey for UNHHS was conducted in 2015 as part of SFRWS's drought response plan efforts. All these surveys together with the stringent watershed protection management activities were completed by SFRWS 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 are continued 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.

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.



Drinking Water & 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. Lead exposure among women who are pregnant increases prenatal risks. Lead exposure among women who later become pregnant has similar risks if lead stored in the mother's bones is released during pregnancy. Recent science suggests that adults who drink water containing lead 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, but we cannot control the variety of materials used in plumbing components. 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, 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 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 known or no known pipelines and connectors between water mains and meters made of lead. Our policy is to remove and replace and LUSL promptly if it is discovered during pipeline repair and/or maintenance.

Our Drinking Water Sources & Treatment

SFRWS's major water source is in Yosemite National Park and originates from spring snowmelt flowing down the Tuolumne River to storage in Hetch Hetchy Reservoir. The well-protected Sierra water source is exempt from federal and State's filtration requirements. To meet the appropriate drinking water standards for consumption, water from Hetch Hetchy Reservoir receives treatment consisting of 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.
The Hetch Hetchy water supply is supplemented with surface water from local watersheds and upcountry non-Hetch Hetchy sources (UNHHS). Rainfall and runoff from the 35,000-acre Alameda Watershed in Alameda and Santa Clara counties are first collected in Calaveras Reservoir and San Antonio Reservoir

for storage followed by delivery to the Sunol Valley Water Treatment Plant (SVWTP) for treatment. Rainfall and runoff from the 23,000-acre Peninsula Watershed in San Mateo County are stored in Crystal Springs Reservoir, San Andreas Reservoir and Pilarcitos Reservoir, and are delivered to the Harry Tracy Water Treatment Plant. Water delivered to the two treatment plants are subject to filtration, disinfection, fluoridation, optimum corrosion control, and taste and odor removal to ensure the water supplied to our customers meet the federal and state drinking water standards. SFRWS did not use the UNHHS in 2019.

Water Quality

SFWRS 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 2019, SFRWS conducted more than 53,650 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.

Flouridation 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 have 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 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 SWRCB-DDW website: https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/Fluoridation.html, or the CDC website www.cdc.gov/fluoridation.



Quinoline Monitoring

SFRWS conducted a special round of voluntary monitoring for the contaminant quinoline. The monitoring effort was part of SFRWS' assessment to identify if quinoline a contaminant of concern in its water sources and/or transmission system. The monitoring results confirm that the raw water sources and transmission system have no quinoline detected.



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 water sources and transmission system in 2019. The monitoring effort was not under any Federal or State order/permit requirements; it was proactively conducted on a voluntary basis 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 currently 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, SFWRS 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.

Groundwater Storage and Recovery (GSR) Project

Groundwater is a renewable source of naturally occurring fresh water that is found in underground reservoirs called aquifers that are replenished primarily by rainfall. The use of groundwater helps diversify water sources and makes drinking water supply even more reliable. SFRWS recently completed Phase 1 of the GSR project, in which a total of eight deep-water wells were installed to provide groundwater for the water system. The groundwater will be treated and blended with its surface water supplies before it is delivered to our customers. For the past decade, SFRWS has collected water quality and quantity data from Westside Basin aquifer, from which the groundwater will be extracted. With extensive testing and water level monitoring, SFRWS knows that after adding groundwater to its water supplies, it will continue providing our customers with high-quality drinking water that meets or exceeds all regulatory health-based and aesthetic standards set by the SWRCB-DDW and the USEPA. Testing of the wells will be conducted throughout the year of 2020.



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 sureface 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 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, 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 USEPA's Safe Drinking Water Hotline 800-426-4791, or at www.epa.gov/safewater.

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.

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 2019. 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.



City of Millbrae
Water Quality Data for 2019

The table below lists all 2019 detected drinking water contaminants and the information about their typical sources. Contaminants below detection limits for reporting are not shown, in accord with regulatory guidance. SFRWS holds a SWRCB-DDW monitoring waiver for some contaminants in its surface water supply and therefore the associated 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	0.3-0.7 (2)	[2.1]	Soil runoff
Filtered Water from Sunol Valley Water Treatment Plant (SVWTP)	NTU -	1(3) Min 95% of samples ≤ 0.3 NTU(3)	N/A N/A	- 99.89% - 100%	[1] -	Soil runoff Soil runoff
Filtered Water from Harry Tracy Water Treatment Plant (HTWTP)	NTU -	1(3) Min 95% of samples ≤ 0.3 NTU (3)	N/A N/A	- 100%	[0.1] -	Soil runoff Soil runoff
DISINFECTION BYPRODUCTS AND PRECURSOR						
Total Trihalomethanes	ppb	80	N/A	12.2-48.5	30.35	Byproduct of drinking water disinfection
Haloacetic Acids	ppb	60	N/A	4.4-41	22.7	Byproduct of drinking water disinfection
Total Organic Carbon(5)	ppm	TT	N/A	1.6 – 2.6	2.1	Various natural and man-made sources
MICROBIOLOGICAL						
Total Coliform (6)	-	NoP≤5.0% of monthly samples	(0)	-	N/A	Naturally present in the environment
Giardia lamblia	cyst/L	TT	(0)	0 – 0.09	0.02	Naturally present in the environment
INORGANICS						
Fluoride (source water)(7)	ppm	2.0	1	ND – 0.9	0.3 (8)	Erosion of natural deposits; water additive to promote strong teeth
Chloramine (as chlorine)	ppm	MRDL = 4.0	MRDLG = 4	1-3.3	2.2	Drinking water disinfectant added for treatment

CONSTITUENTS WITH SECONDARY STANDARDS	UNIT	SMCL	PHG	Range	Average	Major Sources of Contaminant
Aluminum[10]	ppb	200	600	ND – 68	ND	Erosion of natural deposits; some surface water treatment residue
Chloride	ppm	500	N/A	<3 – 17	8.7	Runoff/leaching from natural deposits
Color	unit	15	N/A	<5 – 10	<5	Naturally-occurring organic materials
Specific Conductance	µS/cm	1600	N/A	32 – 234	158	Substances that form ions when in water
Sulfate	ppm	500	N/A	1 -29	15	Runoff / leaching from natural deposits
Total Dissolved Solids	ppm	1000	N/A	<20 – 119	76	Runoff / leaching from natural deposits
Turbidity	NTU	5	N/A	ND – 0.5	0.2	Soil runoff

LEAD AND COPPER	UNIT	AL	PHG	Range	90th Percentile	Major Sources in Drinking Water
Copper	ppb	1300	300	0-55 mgl	48mg/l	Internal corrosion of household water plumbing systems
Lead	ppb	15	0.2	0-25.5 ug/l	5.3 ug/l	Internal corrosion of household water plumbing systems

OTHER WATER QUALITY PARAMETERS	UNIT	ORL	Range	Average
Alkalinity (as $CaCo_3$)	ppm	N/A	3.5-97	46
Boron	ppb	1000 (NL)	ND – 107	ND
Calcium (as Ca)	ppm	N/A	3.3-20	12
Chlorate [13]	ppb	800 (NL)	40 – 220	84
Chromium (VI) [14]	ppb	NA	0.04-0.19	0.12
Hardness (as $CaCO_3$)	ppm	N/A	8.9-77	47
Magnesium	ppm	N/A	0.2-6.6	4.2
pH	-	N/A	8.8-10.1	9.3
Potassium	ppm	N/A	0.3-1.2	0.8
Silica	ppm	N/A	4.9-8	6.1
Sodium	ppm	N/A	2.8-21	14
Strontium	ppb	N/A	13-230	107

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
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.
(7) In May 2015, the SWRCB recommended an optimal fluoride level of 0.7 ppm be maintained in the treated water. In 2019, the range and average of the fluoride levels were 0.2 ppm – 0.7 ppm, respectively.
(8) 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.
(9) This is the highest running annual average value.
(10) Aluminum has a primary MCL of 1,000 ppb.
(11) The most recent Lead and Copper rule monitoring was in 2019. 2 of 30 site samples collected at consumer taps had copper concentrations above the AL.
(12) The most recent Lead and Copper Rule monitoring was in 2019. 0 of 30 site samples collected at consumer taps had lead concentrations above the AL.
(13) The detected chlorate in the treated water is a degradation product of sodium hypochlorite used by SFRWS for water disinfection.
(14) Chromium (VI) has a PHG of 0.02 ppb but no MCL of 10 ppb was withdrawn by the SWRCB-DDW on September 11, 2017. Currently, the SWRCB-DDW regulates all chromium through a MCL of 50 ppb for Total Chromium, which was not detected in our water in 2019.

Boron Detection Above Notification Level in Source Water

In 2019, boron was detected at a level of 1.49 ppm in raw water stored in Pond F3 East, one of SFRWS's approved sources in Alameda Watershed. A similar level was also detected in the same pond in 2017. Although the detected value is above the California Notification Level of 1 ppm for source water, the corresponding level in the treated water from the SVWTP was only 0.1 ppm. Boron is an element in nature and is typically released into air and water when soils and rocks naturally weather.

This report contains important information about our drinking water. Please contact our Public Works at 650-259-2374 for assistance.

Este informe contiene información importante sobre nuestra agua potable. Por Favor Comuníquese con el departamento de las Obras Públicas al 650-259-2374 para ayuda en español.

本報告包含有關我們飲用水的重要信息。請致電650-259-2374聯系公共工程部尋求幫助。

WATER CONSERVATION

Please use water wisely!

Please continue to conserve water by following the guidelines and the water saving tips below. California is prone to droughts and we all need to do our part and conserve water!

For more information on free resources and workshops, guidelines and more, please visit www.ci.millbrae.ca.us/waterconservation

Millbrae Water Use Guidelines

Refer to the City's Municipal Code for additional regulations

- Use of water is not allowed which results in flooding or runoff in gutters, driveways, or streets.
- Hoses used for any purpose must be fitted with shut off nozzles.
- Repair leaks right away.
- Place covers over swimming pools to reduce water lost to evaporation.



WATER SAVING TIPS & RESOURCES

1) Install a low flow showerhead and take 5 minute or les shower. *Free showerheads and timers are available.*

2) Catch water in a watering can or bucket while waiting for water to get hot.

3) Replace your toilet with a high-efficiency model or place a water displacement bag in each toilet tank. *Free displacement bags are available.*

4) Fix all leaky toilets, faucets and pipes. Install low flow faucet aerators in the kitchen and bathroom. *Free low, flow aerators are available.*

5) Scrape plates and run the garbage disposal less frequently. Compost food scraps instead.

6) Turn off water while brushing your teeth and shaving.

7) Run only full loads in dishwashers and clothes washers. Replace these appliances with water efficient machines.

8) Water lawn and landscaping between 6:00 pm and 10:00 am. Be sure not to over water landscaping. Check and adjust sprinkler heads seasonally. Plant drought-tolerant and native plants. *Instant rebates are available for smart irrigation controllers. https://bawsca.rachio.com*

9) Use a carwash facility or use a bucket of water and one short rinse to wash your car; wash on a permeable surface (grass or gravel).

10) Sweep (never hose) driveways, patios and sidewalks.

Pick up free water saving devices at City Hall's Public Works counter
Monday – Friday, 8:30 AM – 5:00 PM

Showerheads, faucet aerators, shower timers, toilet leak tablets, and water-wise and garden landscaping guides. Rebates are available for rain barrels and cisterns, and smart irrigation controllers.

For more information and tips, visit
www.ci.millbrae.ca.us/waterconservation or call 650-259-2348
Also visit: http://saveourwater.com

Appendix H- SFPUC's Regional Water System Supply Reliability

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

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Mayor

Sophie Maxwell
President

Anson Moran
Vice President

Tim Paulson
Commissioner

Ed Harrington
Commissioner

Michael Carlin
Acting
General Manager

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 <u>Without</u> 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

San Francisco
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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:

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Mayor

Sophie Maxwell
President

Anson Moran
Vice President

Tim Paulson
Commissioner

Ed Harrington
Commissioner

Michael Carlin
Acting
General Manager

- 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
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], Without 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], Without 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

Appendix I- Water Conservation Ordinance and Resolutions

ORDINANCE NO. 593

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF MILLBRAE AMENDING AND RESTATING IN ITS ENTIRETY CHAPTER 9, "WATER CONSERVATION" OF TITLE 8 OF THE MILLBRAE MUNICIPAL CODE

The City Council of the City of Millbrae does hereby ordain as follows:

SECTION 1: AMENDMENT OF CHAPTER 9 OF TITLE 8 ON "WATER CONSERVATION

Sections 8-9.01 through 8-9.14, inclusive, of Chapter 9, "Water Conservation" of Title 8 of the Millbrae Municipal Code hereby are repealed and in their place the following Sections 8-9.01 through 8-9.09, inclusive, are enacted:

Chapter 9

WATER CONSERVATION

Sections:

8-9.01 FINDINGS AND DETERMINATIONS.
8-9.02 DEFINITIONS.
8-9.03 REGULATIONS, PROHIBITIONS AND WATER USE/CONSERVATION PRACTICES FOR ALL CUSTOMERS.
8-9.04 LANDSCAPING.
8-9.05 ALLOCATIONS USED AS WATER CONSERVATION GOALS.
8-9.06 CONSERVATION PLANNING AND PROGRAMS.
8-9.07 ENFORCEMENT.
8-9.08 WATER SHORTAGE EMERGENCY.
8-9.09 SEVERABILITY.

SECTION 8-9.01. FINDINGS AND DETERMINATIONS

The City Council of the City of Millbrae hereby finds and determines that:

A. The City obtains all of its water from the San Francisco Water Department and is entirely dependent on the San

Francisco Water Department supply source for its water and that supply is limited and subject to ever increasing demands.

B. The continuation of Millbrae's economic prosperity is dependent on an adequate supply of water being available for current and future use.

C. It is the policy of the City to promote the conservation and efficient use of water and to prevent the waste of this valuable resource.

D. Landscapes are essential to the quality of life by providing areas for active and passive recreation and as an enhancement to the environment by cleaning air and water, preventing erosion, offering fire protection, and replacing ecosystems lost to development.

E. Landscape design, installation, and maintenance can and should be water efficient.

F. Water use and conservation goals are set out in and can be achieved by appropriate implementation of the City's Urban Water Management, Water Shortage Contingency Plan and the Memorandum of Understanding Regarding Urban Water Conservation in California to which the City is a signatory.

G. Pursuant to the Water Conservation in Landscaping Act, Government Code Sections 65590, et seq., the "model" water efficient landscape ordinance adopted by the Department of Water Resources is binding upon and enforceable in the City of Millbrae (hereafter referred to as the "Model Water Efficient Landscape Ordinance").

H. This Ordinance is enacted to carry out certain statutory responsibilities of the City as a water purveyor to achieve the maximum beneficial use of available water resources and to prevent the waste, unreasonable use or unreasonable method of use of water.

I. The adoption of this Ordinance is categorically exempt from the California Environmental Quality Act pursuant to Section 15307 of Title 14 of the California Code of Regulations because this constitutes an action authorized by State law to ensure the maintenance, restoration, or enhancement of a natural resource where the regulatory process involves procedures for the protection of the environment.

SECTION 8-9.02. DEFINITIONS

For the purpose of this Ordinance, the following terms, phrases, words and their derivations shall have the meaning given herein and the definitions contained in the Model Water Efficient Landscape Ordinance are also incorporated herein. When not inconsistent with the context, words used in the present tense include the future, words in the plural number include the singular number and words in the singular number include the plural number. The word "shall" is always mandatory and not merely directory.

A. "Customer" is any person using water supplied by the Millbrae Water Division.

B. "Director" is the Director of Public Works/City Engineer of the City of Millbrae.

C. "Person" is any person, firm partnership, corporation, company or organization of any kind.

D. "Unit of Water" is 100 cubic feet of water or 748 gallons.

E. "Water" is water furnished and distributed to customers by the Water Division.

F. "Water Division" is the Millbrae Municipal Water Division.

SECTION 8-9.03. REGULATIONS, PROHIBITIONS, AND WATER USE/CONSERVATION PRACTICES FOR ALL CUSTOMERS

A. The regulations, prohibitions, and restrictions on the use of water set forth below shall apply to all customers.

1. Each customer shall promptly repair broken or defective plumbing, sprinkler, watering or irrigation systems which permit the escape or leakage of water. Use of water through any meter is prohibited when the customer has been given ten (10) days notice to repair broken or defective plumbing, sprinklers, water or irrigation systems and has failed to effect such repairs.

2. Hoses used for any purposes shall have positive shut-off valves.

3. No use of water shall be allowed which results in flooding or runoff in gutters, driveways or streets.

4. Service connections for new construction will be granted only if water saving devices or fixtures are incorporated into the plumbing system, such as low flow shower heads with shutoffs, and low flow water closets and all other conditions of this Ordinance and the Municipal Code are met.

5. Use of potable water for consolidation of backfill, dust control, soil compaction or other non-essential construction purposes should be limited to those situations where no other source of water can be used or is available. The use of groundwater and/or reclaimed water for such purposes is permitted when approved pursuant to applicable restrictions and regulations.

6. 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.

7. Covers shall be required for all new swimming pools and encouraged to be installed for existing pools.

8. Except for fire protection service lines, a pressure-reducing valve or valves that will limit the static water pressure to each floor of the structure to fifty pounds per square inch gauge shall be installed in all new or remodeled residential structures.

9. All new or remodeled residential, commercial, or industrial structures shall have insulation of hot water pipes

where such piping is located in attics, garages, crawl spaces or unheated spaces other than between floors or in interior walls to provide a maximum heat loss of fifty British thermal units per hour per linear foot for piping up to and including two inches in diameter, and one hundred British thermal units per hour per linear foot for all sizes greater than two inches in diameter.

10. In all new or remodeled commercial or industrial structures, a pressure reducing valve or valves to limit the static water pressure to eighty pounds per square inch gauge to the upper floor of the structure, shall be installed only if no supplemental internal pumping is anticipated. The intent of this section is to limit available water pressure to the structure consistent with uses of water on the premises.

11. Water used for all cooling purposes and for commercial car washes shall be recycled. Self service car washes may be excepted from this recycling requirement by the Director provided the Director finds that water pressure, application rate and time of operation limit the amount of water used to an acceptable quantity.

12. No single use of water shall be permitted where recirculation of water is economically and technically feasible. An economically feasible recirculation installation is defined as, over the useful life of the equipment to be installed, a system where the present worth of the cost of the water saved is more than the present worth of both the capital and annual operation and maintenance costs of the system. Such economic and

technical feasibility shall be determined by the user and reviewed by the Director. In the event there is a disagreement between the user and the Director, a review and final determination shall be made by the City Council.

13. All water service connections to the City water system shall be metered with City approved meters.

14. Homeowner-provided new irrigation systems and the expansion of existing irrigation systems for single and multiple family residences shall be low water use systems.

15. All new landscaping in homeowner-provided single and multi-family residences shall be drought resistant and/or designed for low water use to conserve irrigation water.

B. All customers are encouraged to comply with the water use/conservation practices set forth below.

1. Irrigation of lawns or ground cover in any area, including residential, commercial, industrial, or recreational/golf courses is recommended to be done only between the hours of 6:00 p.m. and 10:00 a.m.

2. Sidewalks, walkways, plazas, houses, businesses, driveways, patios, parking lots, tennis courts, buildings, awnings, or other hard surfaced areas should not be cleaned using water from hoses or by use of water directly from faucets or other outlets.

3. Restaurants, meeting rooms, banquet facilities, hotels and dining facilities should serve water to customers only upon the individual request of the person consuming the water.

4. Water used to fill or maintain decorative fountains or pools should be recycled.

SECTION 8-9.04. LANDSCAPING

New or rehabilitated landscaping shall be installed pursuant to all applicable provisions of the Model Water Efficient Landscape Ordinance, in Division 2, Title 23, California Code of Regulations Chapter 2.7, as it may be amended, and this Ordinance. Consistent with said model ordinance, landscaping of any open space, park, playground, golf course, or other open area shall be planned to conserve water through choice of plants, landscape design, and irrigation techniques. The development and use of the following water saving techniques shall be encouraged subject to relevant legal and economic constraints:

(a) Use of native or drought resistant plants;

(b) Use of water application systems that are controlled to supply water efficiently to meet the needs of the given plants in each situation, as for example: drip irrigation systems and low delivery sprinkler nozzles;

(c) Use of grey water and sewage effluent for irrigation when water quality, environmental, public health, and economic conditions permit such use;

(d) Collection and reuse of run-off water where possible; and

(e) Scheduling of irrigations according to plant requirements.

SECTION 8-9.05. ALLOCATIONS USED AS WATER CONSERVATION GOALS

This Ordinance establishes a voluntary conservation program based on 1987 water usage and the allocation methodology that was in effect during the City's rationing program from the spring of 1991 through March of 1993. The Director shall maintain and update said allocation system and provide allocation information to all customers. The City may establish a system of incentives to recognize or reward customers who maintain water use within the allocation goals. The maintenance and use of this allocation methodology and information shall in no way establish a precedent for or constitute an a priori basis for future allocations in the event that mandatory rationing or more stringent conservation measures are reinstituted.

The methodology for establishing allocation water conservation goals is described below for each category of accounts.

A. Allocation Goals for Residential Accounts

1. Summer Allocation Goals. During the "summer" months of April through November, bi-monthly accounts will be allocated 65% of the amount of water used during the corresponding months or billing periods in 1987.

2. Winter Allocation Goals. During the "winter months of December, January, February and March, bi-monthly accounts will be allocated 85% of the amount of water used during the corresponding months or billing period in 1987.

3. Minimum Allocation Goals. The minimum amount of water for single-family residences and duplexes is set at 6 units

(4,488 gallons) per month. The minimum amount of water for multiple-family dwellings such as apartments, condominiums, triplexes and others is set at 5 units (3,740 gallons) per month. No allocation will be established at less than these amounts.

4. Maximum Allocation Goals. Initially, no single-family or duplex unit allocation will be greater than thirty-two (32) units per bi-monthly billing period for "summer" months or twenty-two (22) units per bi-monthly billing period for "winter" months.

B. Allocation Goals for Commercial/Industrial Accounts

Commercial, industrial and other non-residential bi-monthly accounts will be allocated 85% of the amount of water used during the corresponding months or billing periods in 1987 with the following exceptions:

Allocations for connections that serve both inside and outside/irrigation uses shall be adjusted to allocate only 40% of the estimated amount of water used for outside/irrigation uses in 1987 during the "summer" months of April through November. Outside/irrigation use is defined as the difference between the monthly consumption for the months of April through November and the average monthly consumption for the four months of January, February, March and December, all for 1987.

C. Allocation Goals for Irrigation Service Accounts

Accounts classified for irrigation will be 40% of the actual consumption for the same period in 1987. Where 1987 actual consumption data are not available, the Director shall establish

an appropriate allocation using relevant parameters and reflecting the equivalent of a 60% reduction from normal irrigation.

D. Allocation Goals for New Accounts

Initial allocations for new single-family residences and duplex accounts will be established at 12 units per billing cycle. Initial allocations for new multiple-family accounts such as apartments, condominiums, triplexes and others will be established at 10 units per billing cycle. Final allocations for single-family residence accounts will be calculated on the number of documented residents within a household. Allocations for the first two residents for single-family residence accounts will be established at 75 gallons per day each and 55 gallons per day for each subsequent resident. Final allocations for multiple-family residences will be established at 55 gallons per day for each documented resident. In the case of commercial or industrial customers, business data supplied to the Director will be the basis for establishing the allocation.

E. Allocation Goals Where No Past History Exists

When water records for calendar year 1987 are not available, do not exist for all or various portions of the year, or do not allow or provide the basis for establishment of equitable allocations, earlier records, records of customers with similar water uses or other parameters determined by the Director may be used to set or adjust individual allocations.

SECTION 8-9.06. CONSERVATION PLANNING AND PROGRAMS

The City's Urban Water Management Plan and the Memorandum of Understanding Regarding Urban Water Conservation in California set forth the requirements and goals for conservation plans and programs. These documents shall guide the City and the Director in the planning and execution of conservation programs. It is the policy of the City to provide conservation incentives and support services to customers, including conservation services, materials and supplies, and rebates, where appropriate, to the extent of available resources and in accordance with procedures established by the Director.

SECTION 8-9.06. ENFORCEMENT

It is unlawful for any person or entity to violate or to fail to comply with any of the requirements of this Ordinance. Unless otherwise provided in this Ordinance or the Millbrae 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 Ordinance is continued or permitted to be continued and shall be punished as herein provided.

Any violation of or failure to comply with the requirements in this Ordinance shall be an infraction subject to the penalties set forth in Section 1-1.01 of the Millbrae Municipal Code (Ordinance No. 564). Any willful and knowing violation of a requirement of the Ordinance may also constitute a misdemeanor

subject to the penalties set forth in Section 1-1.02 of the Millbrae Municipal Code (Ordinance No. 564).

Persons designated to issue citations hereunder and to enforce the rules and regulations of this Ordinance pursuant to the authority provided in Penal Code Section 836.5 are the Director of Public Works, Public Works Superintendent, Public Works Supervisor, Public Works Foreman, and the Water Resources and Conservation staff. The issuance of citations will normally follow the continued failure or impracticality of other warning enforcement measures.

SECTION 8-9.08. WATER SHORTAGE EMERGENCY

Notwithstanding the foregoing relating to conservation of water supplies, in times of a declared water shortage emergency pursuant to Section 350 et seq. of the California Water Code, certain additional mandatory water conservation practices will be necessary. The Water Shortage Contingency Plan adopted January 28, 1992 amending the Urban Water Management Plan shall provide the basis for such additional practices.

SECTION 8-9.09. SEVERABILITY

Should any provision of this Ordinance be determined to be invalid or unenforceable in particular circumstances by any court of competent jurisdiction, then such determination shall not affect any other provision of the Ordinance and all such other provisions shall remain in full force and effect.

SECTION 2: **EFFECTIVE DATE; POSTING; PUBLICATION**

This Ordinance shall be in full force and effect as of April 1, 1993. The City Clerk shall publish this Ordinance within fifteen (15) days of its enactment in the San Mateo Times, a newspaper of general circulation printed and published in the County of San Mateo and circulated in the City of Millbrae. The City Clerk also shall post in the office of the City Clerk a certified copy of the full text of this Ordinance, along with the names of those Councilmembers voting for and against the Ordinance.

INTRODUCED at a regular meeting of the City Council of the City of Millbrae held on the 23 day of March, 199_.

PASSED AND ADOPTED at a regular meeting of the City Council of the City of Millbrae held on the 13 day of April, 1993 by the following roll call vote:

AYES:	Councilmembers:	Cannizzaro, Fogarty, Morse, Treseler, and Van Iderstine
NOES:	Councilmembers:	None
ABSENT:	Councilmembers:	None

Paul Van Iderstine
MAYOR

ATTEST:

Alicia Espinoza
CITY CLERK

Appendix J- Green Building Ordinance

Chapter 9.35
GREEN BUILDING CODE

Sections:

9.35.010 Adoption of the California Green Building Code, Title 24, Part 6, 2019 Edition.

9.35.020 Amendment of Section 202.

9.35.030 Amendment of Section 4.106.4.

9.35.040 Amendment of Sections 4.106.4.1 through 4.106.4.5.

9.35.050 Amendment of Section 5.106.5.3.

9.35.010 Adoption of the California Green Building Code, Title 24, Part 6, 2019 Edition.

The code of rules and regulations known and designated as the California Green Building Code, 2019 Edition, with the California State Amendments, hereinafter called California Green Building Code, which establishes the minimum requirements for the effective use of green building in the design of new residential, commercial and industrial buildings and structures and also includes additions and alterations to all existing buildings and structures, printed in book form and filed in the office of the city clerk, is adopted and by reference incorporated in this chapter as if fully set forth as the green building code of the city establishing the rules, regulations and standards as to all matters therein contained, subject, however, to the amendments, additions, and deletions set forth in this chapter. One copy of the California Green Building Code shall, at all times, be kept on file in the office of the building official. (Ord. 746, § 7, Amended by Ord. 762, § 8; Ord. 774, § 9; Ord. 783, § 2).

9.35.020 Amendment of Section 202.

Section 202 is modified by adding the following definitions, and revising the definition of “Electrical Vehicle Charging Station”:

> AUTOMATIC LOAD MANAGEMENT SYSTEM (ALMS). A control system that allows multiple EV chargers or EV-Ready electric vehicle outlets to share an electrical circuit and automatically reduce power at each charger. ALMS systems must be designed to deliver at least 1.4kW to each EV Capable, EV Ready, or EVCS space served by the ALMS. The connected amperage on-site shall not be lower than the required connected amperage per Part 11, 2019 California Green Building Code for the relevant building types.
>
> AFFORDABLE HOUSING. Residential buildings that entirely consist of units below market rate and whose rents or sales prices are governed by local agencies to be affordable based on area median income.
>
> ELECTRIC VEHICLE (EV) CAPABLE. A listed electrical panel with sufficient capacity to provide a minimum 20 amperes to a designated charging space. Raceways from the electrical panel to the charging space(s) shall be

installed to a charging space(s) only in locations that will be inaccessible in the future, either underground or where penetrations through walls, floors, or other partitions would otherwise be required for future installation of branch circuits. Raceways shall be at least 1" diameter and may be sized for multiple circuits as allowed by the California Electrical Code. The electric panel circuit directory shall identify the overcurrent protection device space(s) reserved for EV charging as “EV CAPABLE.” Construction documents shall identify the location of the raceway from the panel to the charging space.

ELECTRIC VEHICLE CHARGING STATION (EVCS). A parking space that includes installation of electric vehicle supply equipment (EVSE) according to the California Electrical Code and with a minimum capacity of 30 amperes connected to a circuit serving a Level 2 EV Ready Space. EVCS installation may be used to satisfy a Level 2 EV Ready Space requirement.

LEVEL 1 ELECTRIC VEHICLE (EV) READY SPACE. A complete electric circuit with a minimum 20-ampere capacity, including electrical panel capacity, overcurrent protection device, a minimum 1" diameter raceway that may include multiple circuits as allowed by the California Electrical Code, conductors, and either a) a receptacle, labelled “Electric Vehicle Outlet” with a minimum ½" font, adjacent to the parking space, or b) electric vehicle supply equipment (EVSE).

LEVEL 2 ELECTRIC VEHICLE (EV) READY SPACE. A complete electric circuit with a minimum 208/240 Volt, 40-ampere capacity, including electrical panel capacity, overcurrent protection device, a minimum 1" diameter raceway that may include multiple circuits as allowed by the California Electrical Code, conductors, and either a) a receptacle, labelled “Electric Vehicle Outlet” with a minimum ½" font, adjacent to the parking space, or b) electric vehicle supply equipment (EVSE) with a minimum output of 30 amperes.

(Ord. 783, § 2).

9.35.030 Amendment of Section 4.106.4.

Section 4.106.4 is amended to read as follows:

4.106.4 Electric vehicle (EV) charging for new construction. New construction shall comply with Sections 4.106.4.1, 4.106.4.2, or 4.106.4.3 to facilitate future installation and use of EV chargers.

Exceptions:

1. Where there is no commercial power supply.

2. Accessory Dwelling Units (ADU) and Junior Accessory Dwelling Units (JADU) without additional parking facilities, unless the electrical panel is upgraded, or a new panel is installed in which case only the electrical capacity requirements apply.

3. Spaces accessible only by automated mechanical car parking systems.

(Ord. 783, § 2).

9.35.040 Amendment of Sections 4.106.4.1 through 4.106.4.5.

Sections 4.106.4.1 through 4.106.4.5 are amended to read as follows:

4.106.4.1 New one- and two-family dwellings and town-houses with attached private garages. For each dwelling unit, install a Level 2 EV Ready Space and Level 1 EV Ready Space.

Exception: For each dwelling unit with only one parking space, install a Level 2 EV Ready Space.

4.106.4.1.1 Identification. The raceway termination location shall be permanently and visibly marked as “Level 2 EV-Ready.”

4.106.4.2 New multifamily dwellings. The following requirements apply to all new multifamily dwellings:

1. For multifamily buildings with less than or equal to 20 dwelling units, one parking space per dwelling unit with parking shall be provided with a Level 2 EV Ready Space.

2. When more than 20 multifamily dwelling units are constructed on a building site:

a. For the first 20 dwelling units, one parking space per dwelling unit with parking shall be provided with a Level 2 Ready Space.

b. For each additional dwelling unit over 20, 25% of the dwelling units with parking space(s) shall be provided with at least one Level 2 EV Ready Space and the remaining dwelling units with parking space(s) shall be provided with at least a Level 1 EV Ready Space. Calculations for the required minimum number of EV Ready Spaces shall be rounded up to the nearest whole number.

Exception: For all multifamily Affordable Housing, 10% of dwelling units with parking space(s) shall be provided with at least one Level 2 EV Ready Space. Calculations for the required minimum number of Level 2 EV Ready Spaces shall be rounded up to the nearest whole number. The remaining dwelling units with parking space(s) shall each be provided with at least a Level 1 EV Ready Space.

Notes:

1. ALMS may be installed to decrease electrical services and transformer capacity associated with EV Charging Equipment subject to review of the authority having jurisdiction.

2. Installation of Level 2 EV Ready Spaces above the minimum number required level may offset the minimum number Level 1 EV Ready Spaces required on a 1:1 basis.

3. The requirements apply to multifamily buildings with parking spaces including: a) assigned or leased to individual dwelling units, and b) unassigned residential parking.

4. Multifamily residential building projects that have been granted entitlements within one year before the effective date of this ordinance shall provide at least ten (10) percent of the total number of parking spaces on a building site, provided for all types of parking facilities, with Level 2 EV Ready Circuits. Calculations for the required number of EV spaces shall be rounded up to the nearest whole number.

5. The City may consider allowing exceptions, on a case by case basis, if a building permit applicant provides documentation detailing that the increased cost of utility service or on-site transformer capacity would exceed an average of $4,500 among parking spaces with Level 2 EV Ready Spaces and Level 1 EV Ready Spaces. If costs are found to exceed this level, the applicant shall provide EV infrastructure up to a level that would not exceed this cost for utility service or on-site transformer capacity.

6. In order to adhere to accessibility requirements in accordance with California Building Code Chapters 11A and/or 11B, it is recommended that all accessible parking spaces for covered newly constructed multifamily dwellings are provided with Level 1 or Level 2 EV Ready Spaces.

4.106.4.2.1.1 Electric vehicle charging stations (EVCS). When EV chargers are installed, EV spaces shall comply with at least one of the following options:

1. The EV space shall be located adjacent to an accessible parking space meeting the requirements of the California Building Code, Chapter 11A, to allow use of the EV charger from the accessible parking space.

2. The EV space shall be located on an accessible route, as defined in the California Building Code, Chapter 2, to the building.

Exception: Electric vehicle charging stations designed and constructed in compliance with the California Building Code, Chapter 11B, are not required to comply with Section 4.106.4.2.1.1.

Note: Electric vehicle charging stations serving public housing are required to comply with the California Building Code, Chapter 11B.

4.106.4.2.2 Electric vehicle charging space (EV space) dimensions. Refer to the City's zoning regulations for parking space dimension requirements.

4.106.4.2.3 Intentionally deleted.

4.106.4.2.4 Intentionally deleted.

4.106.4.2.5 Intentionally deleted.

(Ord. 783, § 2).

9.35.050 Amendment of Section 5.106.5.3.

Section 5.106.5.3 is amended in its entirety to read as follows:

5.106.5.3 Electric vehicle (EV) charging. [N] New construction shall comply with Section 5.106.5.3.1 or Section 5.106.5.3.2 to facilitate future installation and use of EV chargers. Electrical vehicle supply equipment (EVSE) shall be installed in accordance with the California Building Code, the Electrical Code.

Exceptions:

1. Where there is no commercial power supply.

2. Spaces accessible only by automated mechanical car parking systems.

5.106.5.3.1 Office buildings: In non-residential new construction buildings designated primarily for office use with parking:

1. When 10 or more parking spaces are constructed, 10% of the available parking spaces on site shall be equipped with Level 2 EVCS;

2. An additional 10% shall be provided with at least Level 1 EV Ready Spaces; and

3. An additional 30% shall be at least EV Capable.

Calculations for the required minimum number of spaces equipped with Level 2 EVCS, Level 1 EV Ready Spaces and EV Capable spaces shall all be rounded up to the nearest whole number.

Construction plans and specifications shall demonstrate that all raceways shall be a minimum of 1" and sufficient for installation of EVCS at all required Level 1 EV Ready and EV Capable spaces; Electrical calculations shall substantiate the design of the electrical system to include the rating of equipment and any on-site distribution transformers, and have sufficient capacity to simultaneously charge EVs at all required EV spaces including Level 1 EV Ready and EV Capable spaces; and service panel or subpanel(s) shall have sufficient capacity to accommodate the required number of dedicated branch circuit(s) for the future installation of the EVSE.

Note:

1. ALMS may be installed to increase the number of EV chargers or the amperage or voltage beyond the minimum requirements in this code. The option does not allow for installing less electrical panel capacity than would be required without ALMS.

5.106.5.3.2 Other non-residential buildings: In non-residential new construction buildings that are not designated primarily for office use, such as retail or institutional uses:

1. When 10 or more parking spaces are constructed, 6% of the available parking spaces on site shall be equipped with Level 2 EVCS;

2. An additional 5% shall be at least Level 1 EV Ready.

Calculations for the required minimum number of spaces equipped with Level 2 EVCS and Level 1 EV Ready Spaces shall be rounded up to the nearest whole number.

Exception: Installation of each Direct Current Fast Charger with the capacity to provide at least 80 kW output may substitute for 6 Level 2 EVCS and 5 EV Ready Spaces after a minimum of 6 Level 2 EVCS and 5 Level 1 EV Ready Spaces are installed.

5.106.5.3.3 Clean Air Vehicle Parking Designation. EVCS qualify as designated parking as described in Section 5.106.5.2 Designated Parking for Clean Air Vehicles.

Notes:

1. The California Department of Transportation adopts and publishes the California Manual on Uniform Traffic Control Devices (California MUTCD) to provide uniform standards and specifications for all official traffic control devices in California. Zero Emission Vehicle Signs and Pavement Markings can be found in the New Policies & Directives number 13-01. www.dot.ca.gov/hq/traffops/policy/13-01.pdf.

2. See Vehicle Code Section 22511 for EV charging spaces signage in off-street parking facilities and for use of EV charging spaces.

3. The Governor's Office of Planning and Research published a Zero-Emission Vehicle Community Readiness Guidebook which provides helpful information for local governments, residents and businesses. www.opr.ca.gov/docs/ZEV_Guidebook.pdf.

4. Section 11B-812 of the California Building Code requires that a facility providing EVCS for public and common use also provide one or more accessible EVCS as specified in Table 11B-228.3.2.1.

5. It is encouraged that EV Ready Spaces in shared parking are designated as "EV preferred."

5.106.5.3.4 [N] Identification. The raceway termination location shall be permanently and visibly marked as "EV Ready."

(Ord. 783, § 2).

The Millbrae Municipal Code is current through Ordinance 786, passed March 9, 2021.

Disclaimer: The City Clerk's office has the official version of the Millbrae Municipal Code. Users should contact the City Clerk's office for ordinances passed subsequent to the ordinance cited above.

City Website: https://www.ci.millbrae.ca.us/

City Telephone: (650) 259-2333

Code Publishing Company

Appendix K- 2020 Water Shortage Contingency Plan and Emergency Response Plan

Draft 2020

Water Shortage Contingency Plan

Prepared for the City of Millbrae

May 2021

621 Magnolia Avenue
Millbrae, CA 94030
(650) 259-2339

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Appendix B – Residential Water Rationing Allotments

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Appendix E – Water Shortage Contingency Plan Savings Analysis

Executive Summary

This Water Shortage Contingency Plan (WSCP) is an update to the 2016 WSCP submitted to the Department of Water Resources in 2016. There are four sections to the Water Shortage Contingency Plan, which include an Introduction, Assessing Water Supply and Demand, Demand Reduction Program and Implementation. The following provides a brief summary of the Plan.

Introduction

This section of the WSCP provides background information about the City's water system and explains the purposes and goals of this WSCP, summarizes state regulations that pertain to water shortage contingency planning, and describes the process and principles that were used to guide the preparation of this document.

The City of Millbrae faced one of the more pronounced drought periods on record from 2012 through 2017. This WSCP incorporates lessons learned on shortage response from this drought experience. The extraordinary drought of 1976-1977, however, remains the most severe event on record.

The overarching goals of this WSCP are as follows and address water shortages of varying magnitudes:

- To conserve the water supply of the City for the greatest public benefit;
- To mitigate the effects of a water supply shortage on public health and safety, economic activity, and customer lifestyle; and
- To budget water use so that supply will be available for the most essential purposes for the entire duration of the water shortage.

Assessing Water Supply and Demand

This section describes the key hydrologic factors affecting the City's water supply and discusses the process staff uses to determine whether a water shortage is expected in the year ahead.

The City of Millbrae relies on the Hetch Hetchy Water system and its snow pack for all of its annual water supply needs. The yield of this source in any given year is directly related to the amount of snow and rainfall received during the winter season and the runoff generated after it.

The degree of shortage is normally defined as the supply deficiency in relation to normal water use over a given period of time, and expressed as a percentage. For example, a 25% shortage means the City has one-quarter less water supply available than what is normally used during the year. As a result, the customers of the City water system would need to cumulatively reduce demand by 25% to meet available supplies.

Demand Reduction Program

This section describes the six-stage approach and overall strategy for dealing with water shortages, explains how available water would be allocated among various customer categories according to priority of use, and presents the recommended menu of actions for cutting back water demand during a declared water shortage. This section also covers policies and recommendations regarding enforcement methods, exceptions, and appeals.

Table ES-1. Water shortage contingency plan demand reduction stages.

Stage	Water Shortage Magnitude	Stage Title
1	0-5%	Water Shortage Alert
2	6-15%	Water Shortage Warning
3	16-25%	Water Shortage Emergency
4	26-35%	Severe Water Shortage Emergency
5	36-50%	Critical Water Shortage Emergency
6	>50%	Water Shortage Disaster

This WSCP uses a staged approach that classifies a shortage event into one of six levels spanning a range from less than 5 percent to over 50 percent. The overall concept is that water shortages of different magnitudes require different measures to overcome the deficiency. Because there is nothing the City can do in the short-term to increase the supply of water, the focus of this WSCP is primarily on measures that reduce demand. Each stage includes a set of demand reduction measures that become progressively more stringent as the shortage condition escalates. Normally during a drought, only one of these six stages would be put into effect early in the year at the recommendation of the Public Works Director and remain in force for the entire dry season.

There is an important distinction between Stages 1 and 2, designated above in shades of yellow, and the upper three stages (3-6). The lower two stages represent a level of curtailment that is envisioned as being necessary to balance water supply and demand from time to time. Shortages of 15 percent or less, while inconvenient, do not directly threaten public safety or pose undue economic impact. The upper three stages (3-6) are characterized as emergency water shortages since they result in more widespread hardships that will impact the community, may threaten public health and welfare, and cause more economic harm.

Customer reduction goals for all but the first stage were derived by evaluating the composition of demand for each major group and dividing it into three usage priorities. These priorities are, from highest to lowest, 1) indoor, i.e., all domestic and sanitary uses; 2) business uses and; 3) irrigation and other outdoor uses.

This allocation system strives to balance available supplies in times of drought as much as possible through cutbacks in outdoor water use. At each level of shortfall, public health and sanitation usage is given the highest priority by cutting back on interior usage the least. The importance of water in protecting the City's employment base is also acknowledged through proportionately modest cutbacks to the commercial sector as compared to the overall system shortfall. Irrigation and other outdoor uses in all cases are cut back the most. The larger the water shortage, the greater the cutbacks, but this system of priorities is maintained throughout the range of potential shortages. The heavy reliance on outdoor use reductions makes sense, both from a water system perspective because it reduces peak demands, which is important to preserving storage in Hetch Hetchy Reservoir, and from a public health and welfare perspective, because irrigation and other outdoor uses are the most discretionary of all uses when drinking water is in short supply.

The remainder of this section discusses the demand reduction measures, communications, publicity, and operational activities that apply to each stage.

The primary demand reduction measures used in **Stage 1** are to restrict all landscape irrigation to certain hours of the day and to prohibit various uses deemed to be non-essential that are not required for protection of public health and safety that are not normally prohibited by definition under the City's Water Conservation Ordinance. Examples include prohibition on the use of potable water for washing sidewalks and paved surfaces, dust control, or the draining and refilling of private swimming pools. Included in this category would be the serving of water in restaurants or other places where food is served unless expressly requested by the customer.

The recommended approach to reducing water use in **Stage 2** involves expanding mandatory water restrictions and limiting landscape irrigation to specified days and times. Large landscape users would be required to adhere to strict water budgets.

At **Stage 3** the two primary measures being recommended to meet this emergency reduction goal are mandatory water shortage signage in all commercial buildings, and reduced water budgets for large landscapes.

At **Stage 4** the primary additional measures, in addition to the Stage 3 measures, is water rationing to cover all water customers including residential and business allocations. At this severe level of shortage, only minimal water is available for outdoor purposes.

Stage 5 represents an extraordinary crisis threatening health, safety, and security of the community. It would involve reduced rationing levels for all customers and a ban on all outdoor uses to cut back normal water use by up to half.

Stage 6 represents a water shortage disaster in which normal water usage would be reduced by more than half. Drastic cutbacks would need to be made to provide limited water supplies for the health, safety, and security of the community.

Table ES-2 below summarizes the demand reduction measures from the six WSCP stages.

Table ES-2. Summary of demand reduction actions and measures

Water Shortage Condition	Key Water Resources & Conservation Program Communication and Operating Actions	Customer Demand Reduction Measures
Stage 1: Water Shortage Alert (0-5%)	• Initiate public information and advertising campaign • Publicize suggestions and requirements to reduce water use • Step up enforcement of water waste • Coordinate conservation actions with other City Departments • Promote gray water use	• Voluntary water conservation requested of all customers • Adhere to Water Conservation Ordinance • Landscape irrigation restricted to early morning and evening • Encourage conversion to drip, low volume irrigation • Non-essential water uses banned • Use water efficient indoor devices
Stage 2: Water Shortage Warning (6-15%)	• Intensify public information campaign • Send direct notices to all customers • Conduct workshops on large landscape requirements • Intensify system leak detection and repair; suspend flushing • Increase water waste patrol	• Landscape irrigation restricted to designated watering days and times • Require large landscapes to adhere to water budgets • Prohibit exterior washing of structures • Require large users to audit premises and repair leaks • Use re-circulated water to operate decorative fountains, ponds and lakes • Use a bucket and a hand-held hose with a positive shut-off nozzle, mobile high-pressure/low-volume wash system, or at a commercial site to wash vehicles
Stage 3: Emergency Water Shortage (16-25%)	• Convene a staff Appeals Board • Expand, intensify public information campaign • Provide regular media briefings; publish weekly consumption reports • Give advance notice of possible moratorium on new connections if shortage continues	• Reduce water budgets for large landscapes • Require all commercial customers to prominently display “save water” signage and develop conservation plans • Maintain restrictions on exterior washing • No operation of ornamental fountains • Leak repair within 72 hours
Stage 4: Severe Water Shortage Emergency (26-35%)	• Expand water waste enforcement to 24/7 • Develop strategy to mitigate revenue losses and plan for continuing/escalating shortage • Modify utility billing system and bill format to accommodate residential rationing, add penalty rates.	• Institute water rationing for residential customers • Institute water rationing for commercial customers • Minimal water budgets for large landscape customers • Prohibit turf irrigation installation in new development • Prohibition on on-site vehicle washing • Rescind hydrant and bulk water permits • No car washing except at commercial washes • Leak repair within 48 hours
Stage 5: Critical Water Shortage Emergency (36-50%)	• Implement crisis communications plan and campaign • Activate emergency notification lists • Coordinate with CA Department of Public Health regarding water quality, public health issues and with law enforcement and other emergency response agencies to address enforcement challenges • Continue water waster enforcement 24/7	• Reduce residential water allocations • Reduce commercial water allocations • Prohibit outdoor irrigation • No water for recreational purposes, close pools • Continue all measures initiated in prior stages as appropriate • Leak repair within 24 hours

Stage 6: Water Shortage Disaster (>50%)	• Work with crisis/emergency communications consultant to implement crisis communications plan and major publicity campaign • Continue coordination with CA Department of Public Health regarding water quality, public health issues and with law enforcement and other emergency response agencies to address enforcement challenges • Shift to EOC model of command management for overall policy guidance and coordination • Continue water waster enforcement 24/7	• Reduce residential water allocations to health and safety minimum • No water for non-essential commercial uses • Continue leak repair within 24 hours • Continue all measures initiated in prior stages as appropriate

Enforcement and Appeals

The City's existing water shortage emergency ordinance contains several provisions for enforcing water use rules and regulations, and a process for issuing exceptions and hearing appeals. Recommendations include revised penalty fees and excess use fees, adding specified findings for authorizing exceptions, and adding an alternative enforcement approach to reduce the likely caseload of appeals.

Implementation

This section describes the essential elements of implementing the updated Water Shortage Contingency Plan, discusses the approximate lead time needed to prepare for and activate a demand reduction program, outlines the process for declaring a water shortage, and identifies areas where additional ongoing efforts are necessary to address critical gaps.

Droughts or other water shortages are usually identified in April of the water year, which is most commonly when the water supply outlook is determined for the year ahead. However, due to unforeseen circumstances, the state or local government can declare a drought or other water shortage emergency if and when they do identify a need to do so. This WSCP would be implemented shortly after a water shortage is declared, regardless of when or how it occurs.

Formal action declaring a water shortage is taken by the City Council. The legal requirements for such action are covered in Section 350 et.seq. of the California Water Code. The Code requires the following process be followed:

- That City Council hold a public hearing on the matter;
- That the public hearing be properly noticed (minimum of publishing once in newspaper at least seven days prior to the date of the hearing); and
- Upon determining and declaring the existence of a water shortage, City Council may then adopt regulations and restrictions governing the use and delivery of water.

By municipal code, rules adopted by the City Council establishing water use regulations become effective immediately after their publication in the newspaper.

Effective communication is essential to the success of any water shortage contingency plan in achieving the desired water use reductions. All customers need to be adequately informed about water supply conditions, understand the need to conserve, and know what actions they are being requested or required to take to mitigate the shortage. Even before formal declaration of a water shortage, a public information/media program should be activated to provide customers with as much advance notice as

possible. Following Council action, all residents and businesses, not just customers of record, would need to be provided notice of water shortage rules and regulations via a variety of media and communications methods, including print and television media, internet, utility bill, and other methods. Public notification and communication would also be provided for non-English speakers.

The financial impact of short-term demand reduction was estimated to range from $246,000 in a Stage 1 water shortage alert situation to over approximately $4.4 million in a Stage 6 critical water shortage emergency. Options to lessen or overcome the revenue shortfall include the following:

- Deferring planned capital improvements;
- Considering possible rate adjustments or surcharges.

The following implementation steps are recommended:

- Ensure the utility billing system will be able to meet the City's requirements for use in water rationing if it becomes necessary;
- As much as possible, prepare water shortage notices, announcements, materials, and mailing lists in advance, including bilingual materials for non-English speakers; and
- Continue to evaluate supply, demand, and City population to ensure recommendations in this Plan are appropriate.

1. Introduction

1.1 Background

This Water Shortage Contingency Plan (WSCP) is an update to the 2016 WSCP submitted to the Department of Water Resources in 2016. The City of Millbrae is fully dependent on imported water supplied by the San Francisco Public Utilities Commission (SFPUC). Limited storage, no available groundwater wells, and no current supplemental sources of water highlight the importance of adequate water supply planning to meet future requirements and address potential droughts and shortages.

The City of Millbrae participates in the Bay Area Water Supply & Conservation Agency (BAWSCA) that represents the 26 wholesale agencies served by the SFPUC. 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. BAWSCA strives for high quality water and protection for member agency customers from severe water shortages.

The business relationship between SFPUC and its Wholesale Customers is largely defined by the "Water Supply Agreement (WSA) between the City and County of San Francisco and Wholesale Customers in Alameda County, San Mateo County and Santa Clara County" entered into in July 2009. The new WSA replaced the Settlement Agreement and Master Water Sales Contract that expired in June of 2009. The WSA addresses the ratemaking methodology used by the City in setting wholesale water rates for its Wholesale Customers in addition to addressing water supply and water shortages for the Regional Water System (RWS). The WSA has a 25-year term.

In terms of water supply, the WSA provides for a 184 million gallon per day (MGD, expressed on an annual average basis) "Supply Assurance" to the SFPUC's Wholesale Customers. This assurance is subject to reduction, to the extent and for the period made necessary by reason of water shortage, due to drought, emergencies, or by malfunctioning or rehabilitation of the regional water system. The WSA does not guarantee that San Francisco will meet peak daily or hourly customer demands when their annual usage exceeds the Supply Assurance. The SFPUC's Wholesale Customers have agreed to the allocation of the 184 MGD Supply Assurance among themselves, with each entity's share of the Supply Assurance set forth in Attachment C to the WSA. The Supply Assurance survives termination or expiration of the WSA and the City's Individual Water Sales Contract with San Francisco.

The Water Shortage Allocation Plan (WSAP) between the SFPUC and its Wholesale Customers, adopted as part of the WSA in July 2009, addresses shortages of up to 20% of system-wide use. The Tier 1 Shortage Plan allocates water from the RWS between San Francisco Retail and the Wholesale Customers during system-wide shortages of 20% or less. The WSA also included a Tier 2 Shortage Plan adopted by the Wholesale Customers that would allocate the available water from the RWS among the Wholesale Customers.

In September 2018, BAWSCA finalized the "Making Conservation a Way of Life" Strategic Plan-Phase 1 to address the long-term water use efficiency requirements set in Assembly Bill 1668 and Senate Bill 606 for urban retail water suppliers. In June 2020, BAWSCA finalized the Regional Water Demand and Conservation Projections Study (Demand Study) to forecast each member agency's water demands and conservation savings potential through the 25-year planning horizon.

1.2 Purpose and Goals

This WSCP describes the conditions that constitute a water shortage and provides guidelines, actions, and procedures for managing water supply and demands during a declared water shortage. The focus of this WSCP is on measures that reduce customer demand for water based on drought scenarios. However, the plan also provides a framework to describe how the City would respond if faced with much

larger shortages in water supply up to over 50 percent, which could occur as a result of acute disaster or water system failure.

There are several reasons why it is necessary to consider and plan for shortfalls larger than 15%. First, the City remains vulnerable in the near term to a critical water shortage of that scale. The City is potentially at risk of experiencing a major water shortage as demonstrated by the severe statewide drought experienced from 2012 to 2017. In addition, portions of the City and the RWS were constructed in seismically active areas, making catastrophic supply interruption due to a natural disaster such as an earthquake a tangible threat. Finally, state law requires all public water suppliers to develop contingency plans for situations of up to 50 or higher percent shortage in water supply. No one can predict how the future will unfold, especially in light of the emerging science of global climate change, which some predict could bring more frequent, longer, or more intense water shortages across the state, and which compounds the uncertainty and risk going forward at the local government level.

Whatever magnitude of shortfall the City may experience, the overarching goals of this WSCP are as follows:

- To conserve the water supply of the City for the greatest public benefit;
- To mitigate the effects of a water supply shortage on public health and safety, economic activity, and customer lifestyle; and
- To budget water use so that supply will be available for the most essential purposes for the entire duration of the water shortage.

1.3 State Regulations and Legal Authorities

For California water agencies, there are two main provisions of the California Water Code that pertain to water shortage contingency planning.

Sections 350-359 provide the authority for the governing body of a water agency to declare a water shortage emergency. Once having done so, the local agency is afforded broad powers to implement and enforce regulations and restrictions for managing a water shortage. Water needed for domestic, sanitation and fire protection purposes is given priority and discrimination between consumers using water for the same purpose or purposes is not allowed.

This WSCP is included as required by Section 10632 of the California Water Code. This WSCP is an update of the Plan adopted in 1992, during the latter stages of the 1980's/1990's drought, and updated and adopted as part of the Urban Water Management Plan (UWMP) in the years 1997, 2000, 2005, 2010, and 2015.

To comply with Section 10632, copies of Resolution No. 92-17 and 97-6 are included in Appendix C. These Resolutions approved and adopted the 1992 and 1997 WSCP as a component of their respective UWMP. Should it become necessary to amend the contingency plan at the onset of a new drought, these Resolutions could be used as models. The full text of these two code sections is included in Appendix A.

It should be noted that this WSCP is a planning document. It is important to note that every drought will evolve differently and that it is not practical to develop a set of hard and fast rules that apply to all situations. The intent of the Plan is to provide a general framework that will require adjustment and refinement based on actual supply shortage conditions. At the onset of any subsequent drought, characteristics of use, supply allocations, etc., may have changed significantly from current conditions. It may be necessary to amend this WSCP upon re-implementation to account for specific changed conditions.

1.4 Relationship Between This Document and Other Plans

This WSCP constitutes one of several elements required in the City's UWMP, as required by State law.

Water supply interruptions and shortages may result from a variety of causes, including facility failure, such as a major pipeline break, earthquake, flood, or other natural disaster. This WSCP specifically addresses longer-term water shortages that could occur as a result of drought conditions that may extend several months or span several years in duration. For short-term emergency incidents or disasters, the City maintains a separate Emergency Operations Plan, which is subordinate to and complements the Citywide Emergency Response Plan, to guide emergency operations response and recovery for short-term water supply interruptions and outages. The WSCP also incorporates relevant information from the City's Hazard Mitigation Plan, in particular related to seismic risk assessment.

1.5 Water Conservation Program Coordination and Staffing Support

During the years of the drought in the late 1980's and early 1990's, the City had a full-time staff employee to plan and conduct the water conservation program and other water management activities. The City employs a water conservation coordinator, and has since 1991. Currently, the Environmental Programs Manager serves in this position and oversees the water conservation program and two staff members assist as a part of their many duties in the City Public Works Department. This position oversees the Water Resources & Conservation Program which includes implementing the many programs for water conservation, and complying with conservation reporting requirements. The City will continue to employ staff for these purposes in the future.

1.6 Past, Current and Projected Water Use

As of the 2010 Census, the City had an estimated population of 21,532. In 2017, the Association of Bay Area Governments (ABAG) developed population projections for the City, which are shown in Figure 1-1 below.

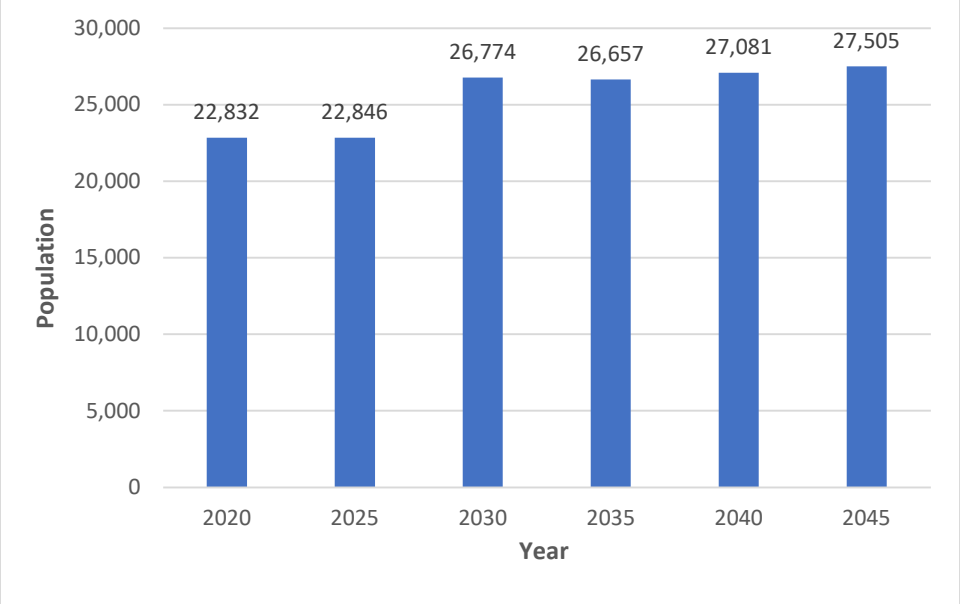


Figure 1-1. Past, current, and projected population (ABAG, 2019).

Currently (2020) Millbrae has an estimated 22,832 residents. The population projections forecast an approximately 20% increase in population by 2045.

The City's water use is primarily residential (single- and multi-family). The City also has a small commercial sector. There are large turfed areas served that include the Green Hills Country Club (golf course), Mills and Capuchino High Schools, four elementary schools, one middle school, one K-8 grade private school, City maintained athletic fields, and public parks of varying sizes throughout the City. There is no agricultural water used in the City.

The residential sector averages 65% of total system demand although this sector has approximately 92% of the total water meter connections (6,060 of 6,591 total). Residences average 2.65 persons per household (based on 2010 Census data).

The commercial/light industrial sector accounts for approximately 17% of the demand with approximately 4.5% of the connections. The irrigation sector accounts for approximately 8% of the system demand with 1.4% of the system connections. Governmental/Institutional and other sectors accounts for approximately 3.1% of the system demand with less than 1% of the system connections.

Losses in the system are estimated at 7% of the total system demand. Losses include firefighting use and system flushing through fire hydrants, water main breaks, and undetected leaks.

Table 1-1 provides an overview of water use over fiscal years 2016-2020. This table was developed using the data generated from the City's Finance Department's water meter billing records.

Table 1-1. 2016-2020 potable water use (CCF*)

Type of Service	Connections (2020)	2016	2017	2018	2019	2020
Residential	6,060	542,393	570,181	611,413	598,836	603,740
Commercial	294	162,215	158,303	154,123	169,181	146,136
Landscape/ Recreation	94	47,125	52,420	78,080	63,294	69,292
Institutional/ Governmental (City, schools and churches)	45	28,063	28,951	36,425	36,886	26,579
Other (Fire service and temp meters)	98	230	402	1,042	704	517
Losses	N/A	119,759	120,438	117,782	79,758	69,184
Total	6,591	899,785	930,695	992,865	949,289	915,448

*CCF =Hundred Cubic Feet
Conversion: 1 CCF = 748 gallons

The City's contract with the SFPUC allows the City to purchase up to 1,537,100 Hundred Cubic Feet (CCF) per year. For the five-year period, 2016 through 2020, total system demand has varied from 899,785 CCF to 992,865 CCF. Average system demand for the last five years has been just under 943,159 CCF per year, almost 40% below the City's maximum SFPUC contract amount of 1,537,100 CCF.

Based on the population projections shown in Figure 1-1 and the conservation measures the City is actively employing, BAWSCA developed in 2019 demand projections for the City from 2020 to 2040, in five-year increments. The resulting demand projections are shown below.

Table 1-2. Projected demands (CCF) for 2025-2045 (BAWSCA, 2019).

Use Type	Projected Water Use

	2025	2030	2035	2040	2045
Single-Family	504,011	574,866	564,171	564,171	565,508
Multi-Family	171,123	191,176	184,492	183,155	183,155
Commercial	181,818	177,807	176,471	284,759	391,711
Institutional/ Governmental	42,781	50,802	50,802	50,802	52,139
Landscape	73,529	69,519	69,519	120,321	173,797
Losses	141,711	156,417	152,406	169,786	193,850
Other	1,337	1,337	1,337	1,337	2,674
TOTAL	1,116,310	1,221,924	1,199,198	1,374,331	1,562,834

The City is anticipated to experience a steady rise in demand over the next 25 years. However, even with the projected growth in demand, the City projects to be able to deliver full supply to its customers during normal years based on the current SFPUC Individual Supply Guarantee of 1,537,100 CCF (3.15 MGD).

Although expansion of Millbrae's service area is limited due to geographical constraints, the area might experience an increase in population and business growth with the development of the Millbrae Station Area Specific Plan.

2. Assessing Water Supply and Demand

2.1 Drought vs. Water Shortage

Drought is a normal, naturally occurring but unpredictable climatic phenomenon of varying frequency, duration and severity. Droughts differ from other natural hazards in that they are not distinct weather events, like floods, hurricanes, or tornados. They may have a slow onset, persist and evolve over a period of years, affect a large spatial region, but cause little structural damage. The most difficult aspect of a drought is that no one can tell how long it will last.

Five degrees of drought intensity are recognized nationally, including abnormally dry, moderate, severe, extreme, and exceptional. Figure 2-1 below shows an example of this system for the current drought, which shows the severity as of March 2016.

The California Department of Water Resources describes drought as:

> *"A deficiency of precipitation over an extended period of time resulting in a water shortage for some activity, group, or environmental sector."*

A water shortage, on the other hand, occurs when a particular utility's water supply is insufficient to meet its customer's ordinary drinking water needs.

Besides weather conditions, there are a number of factors that affect water supply availability, including:

- Source quality
- Source yield and reliability
- Infrastructure capacity and operating constraints
- System demand characteristics

2.2 Coordinated Planning Between SFPUC and BAWSCA

As previously mentioned, the City of Millbrae is a member of the Bay Area Water Supply and Conservation Association (BAWSCA), an association of 26 member agencies that purchase water from the San Francisco Public Utilities Commission for distribution and resale to member agency customers.

The City of Millbrae is 100% dependent on imported water from the SFPUC. The City has little, if any, opportunity for supply expansion due to the impracticalities and cost of new transmission facilities, lack of ground water, environmental constraints, and political realities. This makes supporting the Tier 1 Plan developed by the SFPUC and BAWSCA and BAWSCA Agency Members essential for responding to a system wide drought. In a supply shortage, under the Tier 1 Plan, the SFPUC will determine whether voluntary or mandatory actions will be required to reduce the purchase of SFPUC water to required levels to meet water supply availability. If the SFPUC determines that voluntary actions will be sufficient to accomplish the necessary reductions in water use throughout its service area, the SFPUC and the Wholesale Customers will make good faith efforts to reduce their water purchase to stay within their annual shortage allocations and associated monthly water use budgets. The SFPUC will not impose excess use charges during periods of voluntary rationing, but may suspend the prospective accumulation of water bank credits, or impose a ceiling on further accumulation of water bank credits. If the SFPUC determines that mandatory actions will be required to accomplish the necessary reductions in water use in the SFPUC service area, the SFPUC may implement excess use charges.

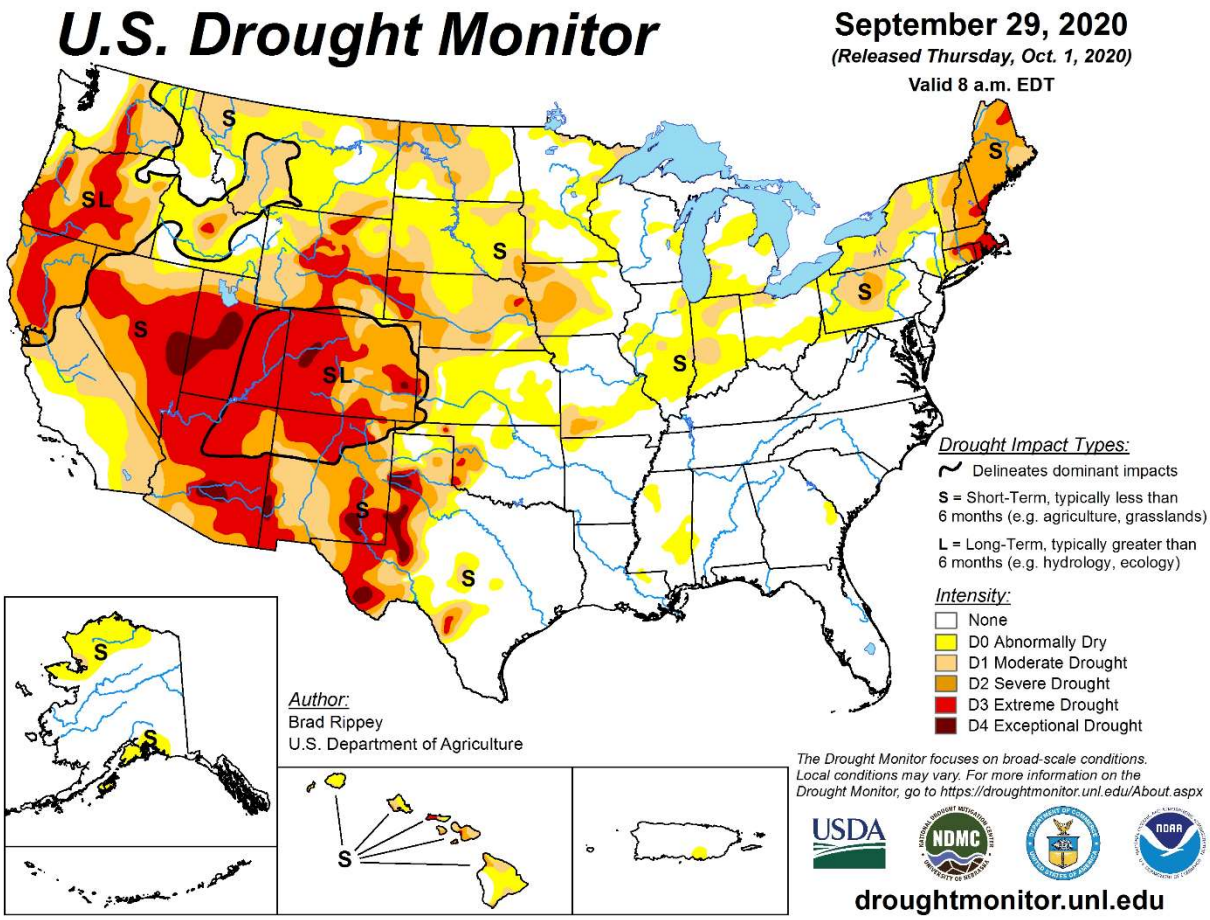


Figure 2-1. National drought map (NDMC, 2020).

The annual allocation between the SFPUC and the collective Wholesale Customers is as shown in Table 2-1.

Table 2-1. Water shortage allocations between SFPUC and Wholesale Customers.

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%

This allocation only applies to shortages of 20% or less. The SFPUC and Wholesale Customers recognize the possibility of a drought occurring which could create system wide shortages greater than 20% despite actions taken by the SFPUC aimed at reducing the probability and severity of water shortages in the SFPUC service area. If the SFPUC determines that a system wide shortage greater than 20% exists, the SFPUC and the Wholesale Customers agree to meet within 10 days and discuss whether a change is required to the allocations set forth in Table 2-1 in order to mitigate undue hardships that might otherwise be experienced by individual Wholesale Customers or the City and County of San Francisco water retail users. Following these discussions, the water allocation established by the Tier 1 Plan or a modified version may be adopted by mutual written consent of the SFPUC and the Wholesale Customers. If the SFPUC and Wholesale Customers cannot agree on an appropriate allocation within 30 days of the SFPUC's determination of water shortage greater than 20%, then the provisions of the Master

Contract will apply unless all of the Wholesale Customers direct in writing that an allocation methodology agreed to by them be used to apportion the water to be made available to the Wholesale Customers collectively, in lieu of the provisions of the Master Contract.

In July 2009, in connection with the Water Supply Agreement, the BAWSCA Wholesale Customers and San Francisco adopted a WSAP to allocate water from the regional water system to Retail and Wholesale Customers during system-wide shortages of 20% or less, which is called the Tier 1 Plan. The Tier 1 Plan replaced the prior Interim Water Shortage Allocation Plan, adopted in 2000, which also allocated water for shortages up to 20%. The Tier 1 Plan, which allocates water between San Francisco and the Wholesale Customers collectively, distributes water based on the level of shortage. As amended in 2018, the Tier One Plan requires Retail Customers to conserve a minimum of 5% during droughts. If Retail Customer demands are lower than the Retail Customer allocation (resulting in a "positive allocation" to Retail) then the excess percentage would be re-allocated to the Wholesale Customers' share. The additional water conserved by Retail Customers up to the minimum 5% level is deemed to remain in storage for allocation in future successive dry years.

All of BAWSCA's Wholesale Customers, including the City of Millbrae, have also negotiated and adopted the Tier 2 Plan in the spring of 2011. The Tier 2 Plan is the second component of the WSAP, which allocates the collective Wholesale Customer share among each of the 26 Wholesale Customers. The Tier 2 allocation is based on a formula that takes multiple factors for each Wholesale Customer into account, including Individual Supply Guarantees, seasonal use of all available water supplies and residential per capita use. The Tier 2 Plan requires that the allocation factors be calculated by BAWSCA each year in preparation for a potential water shortage emergency.

The Tier 1 and Tier 2 Drought Allocation Plans apply only during times of water shortages caused by drought. During these times, the water supply available to the City is based on the WSAP described above. Separate from a declaration of a water emergency, the SFPUC may opt to request voluntary cutbacks from its Retail and Wholesale Customers to achieve necessary water use reductions during drought periods.

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. BAWSCA recognizes that this is not an ideal method and that in the event of actual RWS shortages greater than 20 percent, the Wholesale Customers would have the opportunity to develop and agree upon a more nuanced and equitable approach. Such an approach would likely consider basic health and safety needs such as a per capita minimum, critical institutions such as hospitals, and minimizing economic impacts on individual communities and the region.

Table 2-2 below shows the lowest projected available supply over a three-year period, based on the WSAP. Included in the table for context is the average actual water usage over the past five years, and the maximum use over the past five years (2018).

Table 2-2. Supply sources and worst case supply projections (CCF)

Source	Annual Contractual Amount	Highest Year Purchase 2018	Average Use Base Year (2016-2020)	Projected Worst Case Year 1	Projected Worse Case Year 2	Projected Worse Case Year 3
Local Surface	0	0	0	0	0	0
Groundwater	0	0	0	0	0	0
Imported	1,537,100	993,316	850,267	951,872	986,631	558,824
Reclaimed	0	0	0	0	0	0
Total	1,537,100	993,315.508	850,267	951,872	986,631	558,824
Base Year Supply Shortage				0%	0%	34%

Based on current usage, the City's water use is sufficiently low to meet the available supply during the first and second years of a drought declared by the SFPUC. Of course, this is in part based upon the fact that over the past five years the City has implemented many demand management measures and programs as a result of the last drought. If the SFPUC were to experience year three of a multiple dry year period, and subsequently enact the allocations in the WSAP, the City would likely have to implement measures to reduce usage even further than they have been over the past five year period.

2.3 Annual Water Supply and Demand Assessment Procedures

In accordance with CWC Section 10632.1, the City will conduct an annual water supply and demand assessment and report it to the California Department of Water Resources (DWR). The City will review projected demands and adjust projected water supply to associated type of water year.

3. Shortage Response Actions

This section describes how the City will respond to future water shortages and discusses the various actions it would take to reduce water demand under different shortage scenarios.

3.1 Staged Demand Reduction Approach

This WSCP uses a staged approach that classifies a water shortage event into one of six levels spanning a range from less than 5% up to over 50%. Each stage has been given a specific title to describe and convey the severity of the water shortage to the public. The City of Millbrae's water utility is a distribution system only, with little control over available water supply. However, the City is committed and has legal responsibility to provide for the minimum health and safety needs of its customers. The following water shortage contingency stages were established to ensure the City's water delivery goals.

Table 3-1. Water shortage contingency plan reduction stages.

Stage	Water Shortage Magnitude	Stage Title
1	0-5%	Water Shortage Alert
2	6-15%	Water Shortage Warning
3	16-25%	Water Shortage Emergency
4	26-35%	Severe Water Shortage Emergency
5	36-50%	Critical Water Shortage Emergency
6	>50%	Water Shortage Disaster

The stages in Table 3-1 above are based on a water shortage magnitude, which is presented as the percent reduction in normal water supply. The shortage magnitude could be prescribed through a number of methods, including:

- Projections from the SFPUC on water supply availability;
- Projections based on acute water system failure or other natural disaster; or
- Regulations from the State for water demand reduction goals.

The City elected to retain the shortage levels from the 2016 WSCP and add on the additional required sixth stage to set actions required for water shortages over 50 percent. Table 3-2 demonstrates how the original five stages with the addition of the sixth stage align with DWR's six standard levels.

Table 3-2 DWR Shortage Level Alignment

Stage	Water Shortage Magnitude	Stage Title	2020 WSCP Level	Shortage Level
1	0-5%	Water Shortage Alert	1	<10%
2	6-15%	Water Shortage Warning	2	10-20%
3	16-25%	Water Shortage Emergency	3	20-30%
4	26-35%	Severe Water Shortage Emergency	4	30-40%
5	36-50%	Critical Water Shortage Emergency	5	40-50%
6	>50%	Water Shortage Disaster	6	>50%

Normally during drought induced water shortages, only one of these six stages would be put into effect early in the year at the recommendation of the Public Works Director. The stage would remain in force for the entire dry season, or until the water shortage condition is alleviated. Which stage is enacted would depend on the water supply outlook at the beginning of the dry season, however, conditions and circumstances will vary with each shortage event. Although it would not be desirable to do so for sake of consistency, the City might be forced to transition to the next higher stage mid-season if the reduction efforts at the initial stage do not achieve the necessary results.

In the case of water shortage due to system failure or disaster, the stage would be put into effect at the time of need. The stage would remain in effect until the cause of water shortage is determined to be alleviated. Similar to drought-based water shortages, in this case it could be recommended to change water shortage stages depending on how the specific water shortage emergency changes or progresses.

These shortage magnitudes can also be thought of as demand reduction targets, as the overall supply shortfall is what would have to be overcome through a reduction in total water demand. Reductions in use for the various stages of the program cannot be applied unilaterally to all classes of users (residential, commercial/industrial, etc.). For example, the majority of commercial services have a minimal number of plumbing fixtures, which is based on anticipated use, convenience, and building codes. In this case, water is used to meet basic health and sanitation needs and reductions above the initial 5% could be an extreme hardship. Also, hotels are within the Commercial category. While the City's Water Conservation Program encourages the placement of drought advisory information in rooms, restrooms and on-site restaurants, mandatory reductions in use could result in the necessity to close blocks of rooms resulting in adverse impacts on the hotel, their employees and the City's revenue.

As subsequently discussed, Stages 2 through 6 impose the heaviest impacts on residential customers and irrigation users. This is to be expected as currently these two uses account for 76% of system demand and 93% of total connections.

There is an important distinction between the lower two stages (1 and 2), designated above in shades of yellow, and the upper four stages (3, 4, 5, and 6) designated in shades of red, with the break point occurring at the 15 percent shortage level. The lower two stages (1 and 2) represent the anticipated curtailment that is envisioned as being necessary to balance water supply and demand from time to time. Shortages of 15 percent or less, while inconvenient, do not directly threaten public safety or pose undue economic impact.

The upper four stages (3, 4, 5, and 6), conversely, are all characterized as emergency water shortages since they result in more widespread hardships throughout the community, which may threaten public health and welfare, and could cause considerable economic harm. As a public water supplier, the City must prepare and plan for the possibility of experiencing such large deficits under state law.

Throughout the various Stages, and particularly in Stages 4, 5, and 6, it is anticipated that appeals related to additional needs for occupancy changes, health considerations, licensed residential day care and home health care facilities, and special commercial needs or extraordinary needs to avoid undue economic loss would be heard and decided on a case by case basis. A Water Appeals Board would be established and appointed by the City Council for this purpose.

3.2 Overview of Shortage Response Actions

The City's strategy for dealing with water shortages of all levels involves the following four interrelated components:

- An allocation system to establish reduction goals for different customer groups
- Demand reduction measures
- Publicity and communications
- Operating actions

These four components are summarized in the sections below.

3.2.1 Allocation System

A fundamental issue any water supplier faces in managing a water shortage involves the allocation of water and how to distribute the available supply among customer categories when supplies fall short. In the process of updating this Plan, various options and alternatives were selected on a priority-based system. This allocation system produces specific demand reduction goals for each major customer category at various levels of shortfall based on the unique usage characteristics of each customer category. It is one of the key mechanisms to ensure that the overarching goals of: 1) conserving the water supply of the City for the greatest public benefit; and 2) mitigating the effects of a water shortage on public health, safety, and economic activity, are achieved. It also provides the means for determining whether demand reduction goals are being met or, if not, making needed adjustments. The allocation system is described in more detail in Section 3.3.

3.2.2 Demand Reduction Measures

There are a variety of demand reduction techniques that could be used to curtail customer water use during a supply shortfall. These techniques fall into the following general categories.

Voluntary Water Use Reductions

This approach would include issuing guidelines and suggestions to conserve water, encouraging installation or distribution of conservation devices, stepping up financial incentives for fixtures and appliances that reduce per capita water use, discouraging installation of new landscape, or encouraging replanting with low water use plants and materials.

Prohibitions on Certain Uses

This technique includes banning non-essential uses not required for protection of public health and safety that are not normally prohibited by definition under the City's Water Conservation Ordinance. Examples include prohibition on the use of potable water for washing sidewalks and paved surfaces, washing vehicles on-site or the draining and refilling of private swimming pools.

Limits on Certain Uses

This approach involves placing mandatory restrictions such as watering only between certain hours or on specific days, watering of landscape only by certain methods (sprinkler ban), or restricting the manner in which vehicles or buildings may be washed.

Mandatory Requirements

This technique includes adopting regulations mandating that certain measures be taken by selected customers ranging from the posting of signage in various establishments to save water to requiring the preparation and filing of site-specific conservation plan or requiring an audit of company water use demonstrating conservation efforts.

Rationing

This approach involves establishing a fixed volume or allocation for individual customers or for groups of customers that is intended to reduce water use to a certain level commensurate with the seriousness of the situation. Possible methods that can be used to assign customer allotments include setting a uniform or flat amount, applying a percentage reduction from past use (or other benchmark), establishing a ration on a unit basis (per capita, per dwelling unit, per connection) or using a hybrid approach that is based on a combination of factors.

In updating this Plan, staff identified and reviewed available options for application to various customer groups and inclusion at different stages, and took into consideration the following factors:

- Water savings;
- Seasonality;
- Time frame and procedural requirements to implement the measure;
- Administrative burden;
- Applicable sector (residential, commercial, irrigation); and
- Measures used by other water agencies.

3.2.3 Publicity and Communications

Effective communication is essential to the success of any WSCP in achieving the desired water use reductions. All customers need to be adequately informed about water supply conditions, understand the need to conserve, and know what actions they are being requested or required to take to mitigate the shortage. The Public Works Department naturally assumes a central role in publicizing the extent of the

water shortage problem and in advising and assisting customers on how to conserve. The more severe the shortage, the more vigorous the public information campaign will need to be. This information will be coordinated with the City's Public Information Officer/City Clerk. No matter what the situation, any public communications strategy undertaken in connection with water shortage ideally should contain the following fundamental attributes:

- **Timely** – Information should be disseminated well in advance of voluntary and mandatory actions that are to take effect, repeated often, and updated at regular intervals.
- **Credible** – Public information efforts should strive to be clear, professional, consistent, straightforward, reasoned, and honest to build trust and community support.
- **Multimodal** – Information should be made available to the public using a variety of methods, including the internet, newsletters and newspapers, television, special events, visual displays, public meetings, speaking engagements, and other techniques that maximize outreach.
- **Open** – The Program would actively listen to, engage, and involve its customers, solicit feedback, address identified concerns, and respond to public input in a manner that is respectful, appreciative, welcome to creative solutions, and acknowledges each individual's sacrifice, inconvenience, and contribution to the situation.
- **Coordinated** – The Program should collaborate with other City departments, affected public agencies and organizations, its own employees, interest groups, and the news media to ensure that everyone has the same understanding and are working together.
- **Action Oriented** – Information should always contain positive action steps people can take to help foster a spirit of cooperation and create an overall atmosphere that encourages the public to save water for the common good.

There are a number of key groups to whom water shortage communications will need to be aimed. These include, but are not limited to the following:

City Council and Countywide officials: The Council authorizes the use of emergency powers and funds, adopts water shortage regulations, and makes appointments to a special Appeals Board. As the City's governing body, it will have to deal with frequent inquiries from the media and constituents. It will need to know about possible impacts on citizens and the City's own municipal water use. The City Council will be provided in-depth information for its decision-making. City Council meetings are the primary forum where policy issues are discussed and the public is able to make its voice heard. BAWSCA and the County Board of Supervisors will also need to be kept informed.

City Departments and other governmental bodies: All City departments, including Parks, Fire, Police, and Public Works, as well as other public institutions, will be asked to provide leadership and present a good example to the community by reducing their own water demand.

News media: The media has a key role to play in helping communicate timely and accurate information to the public, especially when water restrictions or regulations are initially announced. The City Clerk serves as the official spokesperson for the media. Because the news media is such a powerful force, care always must be given to deliver accurate and consistent messages to maintain good relationships with the media. Feature reporters and editors can also be instrumental in writing about personal interest stories and alternative approaches to help people deal with water shortage in a positive way.

Large water users and groups most affected by water shortage: The local landscaping and hospitality industries, along with other high water using businesses such as retirement centers will need additional information about water shortage restrictions or regulations that will affect their business or clients.

City water customers/general public: All City water users, regardless of whether they are the customer of record, will need to be properly notified so that everyone understands the reasons for voluntary or mandatory cutbacks, what is expected in terms of usage restrictions, and the consequences of failing to abide by any adopted regulations. The Water Resources and Conservation Program will need to step-up distribution of conservation tips and water saving ideas and respond to an increasing number of individual customer contacts. Special efforts also will need to be made to translate copies of all public notices, regulations, and outreach materials into the appropriate languages for non-English speakers.

There are various methods the Program could employ to carry out added communications and public outreach responsibilities that become necessary in a water shortage situation. The menu of possible techniques is listed in Table 3-3.

Table 3-3. Communications and public outreach methods

Methods	
• Press releases • Press conferences • Opinion page coverage • Paid print advertising • Community television • Radio interviews • Public service announcements • Internet • Utility bill messages • Revisions to utility bill layout • Direct mail • Printed material (posters, banners, signage) • E-newsletter & e-mails • Garbage bill newsletter	• Public meetings, forums • Publish figures and charts of actual water supply and demand on graph, comparing system use against daily, weekly, or monthly water budgets • Presentations at neighborhood, homeowner's associations, service, and community meetings • Telephone hotline • Fliers at schools, churches, libraries, grocery markets, and other social gathering places • Outdoor signs for visitors • Conservation events, contests, booths • Lead or participate in regional drought awareness media campaigns

3.2.4 Operating Actions

When a water shortage occurs, Public Works staff will need to be flexible and adaptable to realigning its work priorities. The added responsibilities change what must be done in both field and office operations on a daily basis compared to usual duties under normal water supply conditions. This may result in increased costs to the Department for additional personnel, services, and supplies.

The Public Works Director will need to mobilize the necessary personnel, resources, and equipment to undertake the various activities that are critical to implementing an effective response. These initial actions may include, among other things:

- Coordinating with other city departments and affected public agencies;
- Establishing a public communications program to publicize use restrictions and to engage and involve the community and key water-using sectors in curtailing their demand;
- Ensuring adequate staff and training to effectively respond to customer inquiries and enforce water shortage regulations;
- Adapting utility billing format and database capabilities;
- Expanding water conservation assistance, outreach, and education;
- Instituting a system for processing exception requests and appeals;

- Addressing policy issues and updating status with decision makers; and
- Implementing monitoring mechanisms to track actual usage and measure performance.

These and other operating actions are described further below and in Section 4, Implementation.

3.2.5 Seismic Risk Assessment and Mitigation Plan

The City's Hazard Mitigation Plan is contained within the County of San Mateo Hazard Mitigation Plan (Section 2, Chapter 12). The City and portions of the RWS are located in seismically active areas, making catastrophic supply interruption due to a natural disaster such as an earthquake a tangible threat and the natural hazard that poses the highest risk to the City. Other hazards of concern include severe weather, flood, and landslides. Past natural hazard events within the City have included landslides and earthquakes.

The County Hazard Mitigation Plan identifies several specific vulnerabilities for the City, including:

- City water storage tanks are not up to current seismic codes. Tanks have been in service since 1970 and have passed their useful life. The City of Millbrae recently completed the Water Storage Tanks Master Plan and is actively seeking funding to implement the projects recommended in the Master Plan.
- Aging water distribution system. The majority of the 75 miles of water distribution system are also over 60 years old and in urgent need of replacement and retrofit.

The County Hazard Mitigation Plan also includes an action plan for mitigation of the identified vulnerabilities. Specific actions for the water system include:

- Water system intertie with the San Francisco Airport
- Water storage tanks seismic upgrades, retrofits and replacement
- Actively participate in the plan maintenance protocols

Relevant sections of the County Hazard Mitigation Plan are included in Appendix D.

3.2.6 Demand Reduction Strategy Summary

Together, the four demand reduction strategy components presented above represent a system whose parts function together to accomplish change. The changes targeted through the implementation of this strategy include:

- Changes in customer understanding and awareness;
- Changes in their behavior and actions, and
- Changes in how much water residents, businesses, and visitors use in times of water shortage.

As illustrated in Figure 3-1, these components are interrelated and provide the standards and feedback mechanism to ensure that water consumption is reduced to the level that the system can safely support. These steps are also continuous, and during the implementation of the demand reduction strategy each component should be continually evaluated to ensure the best possible outcomes are achieved.



Figure 3-1. Demand reduction strategy.

3.3 Priority-Based Water Shortage Allocation

The recommended allocation system is based on the premise that, when water is in short supply, certain end uses should have a higher priority than others. Using a priority-based approach, the normal water demands of each major customer category are first classified into three basic priorities (Figure 3-2):

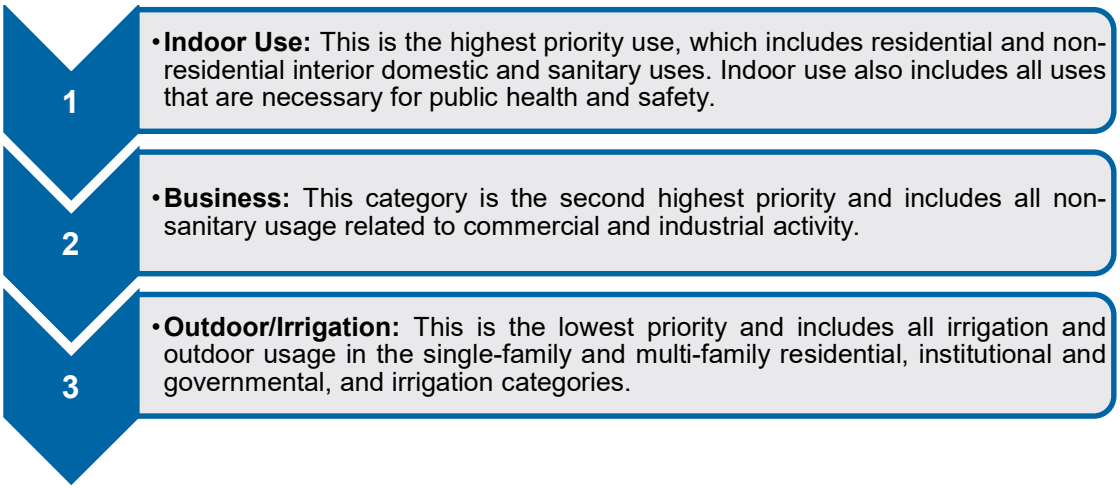


Figure 3-2. City water usage priorities.

Table 3-4 shows the average water use from the years 2016 through 2020 for each of the City's major customer groups during the April to October peak water-use season. The uses are subdivided into the three use priorities presented above (indoor, business, outdoor) based on indoor/outdoor use separations previously developed for the region (URS, 2004).

Table 3-4. Peak season water use by meter type and use priority (CCF, April-October).

Customer Class:	Usage Priority:			Total	Percent of Total
	1	2	3		
	Indoor	Business	Outdoor/ Irrigation		
Single-Family Residential	234,586	-	110,393	344,979	54.3%
Multi-Family Residential	89,084	-	13,311	102,395	16.1%
Commercial	-	94,559	-	94,559	14.9%
Institutional/Governmental	19,331	-	12,359	31,691	5.0%
Landscape	-	-	61,220	61,220	9.6%
Other	-	-	429	429	0.1%
SUBTOTAL	343,001	94,559	197,713	635,273	100%
Percent of Total	**54.0%**	**14.9%**	**31.1%**	**100%**	**-**

Metered water use by all customers during this 7-month period averages 635,273 CCF over the past five years. In terms of the breakdown by usage priority, water used for indoor purposes is estimated to be 343,001 CCF, or just over half (54%) of the total demand during the peak season. Water used for business-related purposes is estimated at 95,559 CCF (14.9%), and the volume of water used for outdoor/irrigation purposes is estimated at 197,713 CCF (31.1%). To arrive at demand reduction goals for each customer group, the average demands for the past five years shown in Table 3-4 are scaled back by usage priority in accordance with the schedule shown in Table 3-5.

Table 3-5. Percent of normal water deliveries by usage priority.

Stage	Water Shortage Magnitude	Percent of Normal Deliveries		
		Indoor	Business	Outdoor/ Irrigation
2	15%	95%	95%	63%
3	25%	95%	90%	33%
4	35%	90%	85%	12%
5	50%	75%	60%	0%
6	>50%	<75%	<60%	0%

In essence, this allocation system strives to balance available supplies in times of drought as much as possible through cutbacks in outdoor water use. At each level of shortfall, public health and sanitation, represented by indoor water use, is afforded the highest priority by cutting back on interior usage the least. The importance of water in protecting the City's employment base is also acknowledged through proportionately modest cutbacks to the commercial sector as compared to the overall system shortfall. Irrigation and other outdoor uses in all cases is cut back the most. The larger the water shortage, the greater the cutbacks, but this system of priorities is maintained throughout the range of potential shortages. The heavy reliance on outdoor use reductions makes sense, both from a water system

perspective because it reduces peak demands, which is important to preserving storage in Hetch Hetchy, and from a public health and welfare perspective, because irrigation and other outdoor use are the most discretionary of all uses when drinking water is in short supply.

Under this system, a system wide water shortage of 15% could be addressed through modest cutbacks in both indoor and business water uses, combined with an approximately one-third reduction in outdoor water use. Emergency water shortages would involve far deeper cutbacks. A 25% system wide shortage requires slightly greater reduction in business water use combined with a harsher two-thirds reduction in outdoor watering. A 35% system wide shortage requires reducing indoor and business uses somewhat more, combined with drastic reductions in outdoor water use. To achieve a 50% reduction would take nothing less than a significant reduction in both indoor and business usage, combined with the elimination of all outdoor water use.

This allocation system is recommended after consideration of several options, and is based on current patterns and composition of water consumption. As demand level changes over time, it should be reviewed and revised as necessary. In addition, alternative allocations may always be considered at the time a given stage is implemented.

A prime concern of any WSCP is maintaining sufficient water for public health and sanitation. Table 3-6 below presents the indoor water use allocation for residential customers in terms of gallons per person per day under the four deficit conditions. The passage of AB 1668 set the standard indoor allocation to 55 gpcd, lowering to 52.5 gpcd after January 1, 2025. In WSCP stages 2-4, there is enough water to meet essential health and safety needs, which is considered to be between 45 and 50 gallons per person per day for single-family homes. During stage 5, where a maximum reduction of 50% may be necessary, the available per capita indoor water use falls just short of the health and safety range. In stage 6, indoor allocations would need to be further reduced to meet the shortage reductions required and could fall well below health and safety range.

Table 3-6. Health and safety indoor residential use

Deficiency Condition	Indoor Allocation	Combined Residential Use (gpcd)
No deficiency	100%	55
15%, 25%	95%	49
35%	90%	41
50%	75%	33
>50%	<75%	30

Another point of interest is to consider the available combined residential per capita use during times of drought against indoor water fixture plumbing standards. For example, based on California plumbing standards from 1992 (CONSOL, 2010) and usage frequencies from the Pacific Institute (2014), Table 3-7 below estimates the required daily per capita water necessary for regular indoor water usage.

Table 3-7. Total per capita indoor water use for 1992 plumbing standards.

Fixture	Usage Frequency	Units	Flow Rate/ Volume	Units	Total Demand (gpcd)

Toilets	4.8	flushes/day	1.6	gallons per flush	7.7
Clothes Washer	2.3	loads/week	30	gallons/load	11.8
Shower	40.9	minutes/week	2.5	gallons per minute	14.6
Bath	2.24	baths/week	18	gallons/bath	5.8
Faucets	10.1	minutes/day	2.5	gallons per minute	25.3
Dishwasher	0.85	loads/week	3.5	gallons/load	0.43
Total Per Capita Water Budget (Based on 1992 Standards)					**65.6**

As shown, the anticipated indoor water use with older plumbing codes would require approximately 66 gpcd. Over the past five years, the estimated indoor water use is below this value, suggesting the City's residents have already voluntarily modified use behavior, replaced older plumbing fixtures, or some combination of both. As new developments are built and older plumbing fixtures are continuing to be replaced, the result would be a decrease in required daily per capita water in order to satisfy the same usage patterns. Table 3-8 below shows the same usage frequencies as reported in Table 3-7, but updates the fixture flow rates and volumes with current CALGreen (2019) building code standards.

Table 3-8. Total per capita indoor water use for CALGreen plumbing standards.

Fixture	Usage Frequency	Units	Flow Rate/ Volume	Units	Total Demand (gpcd)
Toilets	4.8	flushes/day	1.28	gallons per flush	6.1
Clothes Washer	2.3	loads/week	14.4	gallons/load	4.7
Shower	40.9	minutes/week	1.8	gallons per minute	10.5
Bath	2.24	baths/week	18	gallons/bath	5.8
Faucets	10.1	minutes/day	1.5[1]	gallons per minute	15.2
Dishwasher	0.85	loads/week	3.5	gallons/load	0.43
Total Per Capita Water Budget (Based on CALGreen Standards)					**42.7**

[1]Average of kitchen and faucet flow rate efficiency standards.

Under current standards, the anticipated daily per capita volume necessary for indoor water use decreases to approximately 43 gpcd. Under these standards, habit or water use frequency changes would be required in the most extreme stages of the water use reductions shown in Table 3-5. In addition to the demand using the CALGreen standards shown above, a study performed by the Pacific Institute determined that under the same usage frequencies, indoor water use could be reduced even further, to approximately 32 gpcd, using the highest efficiency indoor fixtures currently available.

It should be noted; however, that as the population of the City continues to grow and water demand increases, per capita water usage would by necessity need to decrease in order to match available supplies. As such, all values reported in this section should be periodically updated and evaluated to

include current population, usage, and plumbing code standards. This plan is a living document, and as such will need to remain as relevant as possible in order to allow the City to plan for and achieve the best results when faced with a water shortage.

3.4 Water Shortage Response Actions

The allocation system described above serves to establish demand reduction goals for each of the City's major customer groups. The challenge in crafting this contingency plan is to select the most appropriate set of measures that logically correlate with these targets for each sector and stage of shortfall, acknowledging the inherent uncertainties involved and difficulty in predicting their effectiveness in advance.

The recommended list of actions to cut water use is presented below starting with Stage 1- Water Shortage Alert. This list meant primarily to help inform the public and decision-makers about the types of measures that would be taken under various water shortage scenarios. Specific circumstances will vary with each shortage and decisions about the most appropriate response should be based on the water supply and demand conditions at the time, and the collective judgment of staff and City Council, with ample public input.

It is also important to recognize that flexibility in selecting the most appropriate stage may be needed. In the case of a borderline situation, for instance, where there is reasonable likelihood that system demand could be curtailed sufficiently with the lesser restrictions, it may be advantageous to initially choose the lower stage, conditioned with a well-publicized caveat that, if water use exceeds targets, the more restrictive regulations would kick in.

Each section that follows includes:

- An overview of the response;
- A discussion of any key issues involved in that stage;
- The prepared public message; and
- A list of the recommended demand reduction measures, communications actions, and operating actions applicable to that stage

3.4.1 Stage 1 – Water Shortage Alert

Stage 1 applies to relatively minor water shortages that can be accommodated with a combination of voluntary conservation measures and minimal usage restrictions, combined with enhanced enforcement of the City's ongoing ordinance prohibiting water waste. Except for a few instances, all demand reduction measures apply uniformly to nearly all customers, therefore no specific allocation is proposed during this stage.

A Stage 1 response may also be appropriate in other situations. It may be prudent as a precautionary measure during an unusually dry year in advance of a declared water shortage or during the winter season following an actual shortage event if needed to maintain a continuing level of awareness among customers until normal water conditions are restored.

The Stage 1 public message is as follows:

"Due to abnormally dry conditions this winter, we're asking all customers to voluntarily cut back water use this summer by 5% to stretch the available water supply. City water users should stop using water for non-essential purposes and conserve where possible in case the dry period experienced this past winter

continues into next year. If everyone cooperates, we may avoid imposing more stringent watering restrictions. As always, wasting water is prohibited by law"

Table 3-9. Stage 1 water shortage contingency measures.

Water Shortage Magnitude/System-wide Demand Reduction Goal: 0-5%

Demand Reduction Measures:
• Request voluntary water conservation by all customers
• Step up enforcement of water waste
• Restrict the time of landscape irrigation to early morning and evening
• Prohibit non-essential water use:
  – serving drinking water by restaurant or food service establishments except upon request
  – use of potable water for washing driveways, patios, parking lots or other paved surfaces
  – require hotel, motel, and other commercial lodging establishments to offer option of not laundering towels and linen daily
  – draining and refilling of swimming pools
• Encourage use of drip and other low volume irrigation systems
• Encourage appropriate use of *gray water use
• Require the use of water efficient indoor devices
 	
Publicity/Communications
• Send out a Public Notice to announce water conditions, request cooperation
• Initiate public information campaign through media, utility bill and newsletter, website
• Develop regular advertising campaign to remind consumers of the need to conserve water
• Prepare and disseminate suggestions/requirements to reduce water use
• Inform large landscape/property managers of irrigation restrictions
• Continue to promote meter reading and regular leak detection by all customers
• Include water saving measures and reductions on website
 	
Operating Actions
• Coordinate water conservation actions with other City Departments and public agencies
• Eliminate system water uses deemed non-essential

Water Shortage Magnitude/System-wide Demand Reduction Goal: 0-5%
• Delegate water waste patrol duties to appropriate personnel • Institute regular monitoring and reporting of water production and consumption • Undertake contingency planning for continuing/escalating shortage

* Gray water use includes drain water from showers, bathtubs, bathroom sinks, and clothes washers. It does not include water that has come in contact with toilet waste, water from kitchen sinks and dishwashers, or laundry water used for washing diapers. There are no restrictions on the use of gray water if it is carried in a bucket. Plumbed gray water systems could also be built to convey drain water and provide subsurface irrigation to trees and shrubs.

3.4.2 Stage 2 – Water Shortage Warning

Stage 2 applies to moderate water shortages. This condition requires more vigorous public information and outreach and an expansion of mandatory water restrictions and prohibitions, particularly on outdoor water uses. The primary methods to meet target consumption levels are to limit irrigation to specified days of the week and to institute water budgets for large landscapes and parks.

The recommended approach to reducing outdoor water use in this stage would be to restrict watering of all lawns and established landscapes to twice weekly during specified hours and to disallow any watering with automatic sprinkler systems on certain days to maximize reduction.

Other measures that would be imposed under Stage 2 would include mandatory leak inspection and repair for large customers and to expand restrictions on exterior washing to dwellings, buildings, and structures.

The Stage 2 public message is as follows:

"It is necessary to impose mandatory restrictions on water use to ensure that throughout the duration of this water shortage an adequate supply of water is maintained for public health and safety purposes. Our overall goal is to reduce water use by 15%, the majority of which can be achieved if everyone cuts back their outdoor watering by one-third the normal amount."

Table 3-10. Stage 2 water shortage warning response measures.

Water Shortage Magnitude/System-wide Demand Reduction Goal: 6-15%
Demand Reduction Measures: • Continue all measures initiated at Stage 1 • Restrict landscape irrigation to designated watering days and times[1] • Require the use of re-circulated water to operate decorative fountains, ponds and lakes • Require the use of a bucket and a hand-held hose with a positive shut-off nozzle, mobile high-pressure/low-volume wash system, or at a commercial site to wash vehicles • Require large landscapes to adhere to water budgets • Prohibit exterior washing of dwellings, buildings, or structures (with exceptions for window washing or in preparation for painting) • Reduce time allowed to resolve water waste • Require large users to audit premises and repair leaks • Continue to promote meter reading and regular leak detection by all customers **Publicity/Communications** • Intensify public information campaign with regular media updates, direct notices to all customers, paid advertising, billing messages. • Generate publicity about individuals and businesses demonstrating leadership to save water • Consult with major customers to develop conservation plans • Publish monthly consumption graph on website

Water Shortage Magnitude/System-wide Demand Reduction Goal: 6-15%
• Inform large landscape/property managers of additional irrigation restrictions • Conduct workshops on large landscape requirements for property owners, contractors, maintenance personnel **Operating Actions** • Coordinate with all City Departments and public agencies to reduce water use • Suspend main flushing except as required for emergency and essential operations • Intensify distribution system leak detection and repair • Continue regular monitoring and reporting of water production and consumption • Undertake contingency planning for continuing/escalating shortage • Develop strategy to mitigate revenue losses

[1]Considerations may be provided for weather-based smart irrigation controllers and drip systems.

3.4.3 Stage 3 – Water Shortage Emergency

This level of water shortage constitutes an emergency situation requiring significant actions by the public to achieve up to a 25% reduction. The two primary measures being recommended to meet this emergency reduction goal are:

- Required water shortage signage in all non-residential establishments; and
- Reduced landscape water budgets for large landscapes.

Commercial customers would be expected to meet their collective reduction goal by adhering to continuing water restrictions, and by being required to prominently post **"SAVE WATER – REPORT LEAKS AND WATER WASTE"** signs at the entrance and in every bathroom of commercial, industrial and institutional buildings, including:

- Hotels, motels, and lodging;
- Restaurants, cafeterias, cafes, and all food service establishments;
- Offices and government buildings;
- Health care and retirement centers; and
- Schools.

Large landscape customers would be held to water budgets as described in Stage 2, reduced in accordance with the allocation for irrigation customers in Stage 3.

One charged policy issue that often arises in connection with a water shortage emergency is the question of whether or not to continue allowing new connections on the system. In the past, it has been the City's policy to continue allowing new connections mainly because the demand they add in any one year is negligible. The water that would be made available to existing customers by banning new water connections, therefore, would not make any real difference in terms of increasing the existing customers' allocation. This issue is typically driven by customers who are called on to make sacrifices and feel that water agencies should concentrate on fulfilling present obligations rather than accepting new customers. A number of agencies, however, do have provisions for a temporary ban or place a low priority on new connections in later stages of their drought plans.

Staff recommends giving the public a one-year advance notice, beginning in Stage 3, stating that a temporary water service connection ban would be strongly considered if the shortage emergency

continues or escalates into the following year. This notice would allow those people with plans and projects already underway time to complete work or make arrangements, and those considering future construction projects to make timely decisions about proceeding with the knowledge that they risk not being able to secure a water service connection until the shortage is over.

The Stage 3 public message is as follows:

"The City faces a serious water shortage emergency due to prolonged drought. Our goal is to reduce system water demand by 25%. We are relying on the cooperation and support of all water users to abide by all restrictions to reach this goal. Otherwise, the shortage could lead to a more serious emergency that requires rationing household water use to avoid depleting the available water supply."

Table 3-11. Stage 3 water shortage emergency response measures.

Water Shortage Magnitude/System-wide Reduction Goal: 16-25%
Demand Reduction Measures: • Continue measures from all previous stages • Continue landscape irrigation restrictions to designated watering days and times • Require large landscapes to adhere to reduced water budgets • Prohibit operation of ornamental fountains • Require all commercial customers to prominently display "save water" signage with specified language at specified locations • Maintain restrictions on exterior washing of surfaces and structures • Require leak repair within 72 hours • Continue to promote meter reading and regular leak detection by all customers **Publicity/Communications** • Expand, intensify public information campaign focused on 2/3 reduction in outdoor use • Provide regular media briefings, manage media coverage • Provide regular information reports to City Council and other agencies • Consult with major customers to develop conservation plans • Publish monthly consumption graph on website • Enlist support of the Chamber and other business groups • Inform large landscape/property managers of reduced allocations • Conduct workshops on large landscape requirements for property owners, contractors, maintenance personnel • Prepare public notice regarding possible future service connection moratorium

Water Shortage Magnitude/System-wide Reduction Goal: 16-25%
• Promote appropriate use of gray water for reuse **Operating Actions** • Expand size and coverage of water waste patrol • Expand, strengthen water conservation education, activities, and program • Continue all operating actions listed under Stage 2 • Increase frequency of monitoring and reporting of water production and consumption • Undertake contingency planning for continuing/escalating shortage • Develop strategy to mitigate revenue losses

3.4.4 Stage 4 – Severe Water Shortage Emergency

The water supply conditions that would trigger Stage 4 parallel the difficult situation the City experienced in the drought of late 1970's. Under this scenario, virtually all available water must be reserved either for health and safety purposes or to sustain local business. Achieving a 35% system wide reduction would require water rationing to cover all water customers, including businesses.

Unfortunately, there is no practical way to assign a commercial water budget based on variables like the number of employees, square footage, etc. given the variety of usage characteristics in this sector. Every business (or group of businesses sharing a single water account, as is often the case in shopping centers) is unique. They include laundries, restaurants, retirement centers, retail outlets, hotels, car washes, and office buildings. At this point, there is no choice other than to ration business customers individually based on a percent of prior use in a normal year that is consistent with the overall allocation for Stage 4. Where essential water use at a business establishment involves a public health service, including doctor's offices, medical laboratories, and skilled nursing facilities, or where a business can demonstrate it has already achieved maximum practical water conservation, provision for additional water could be made on a case by case basis through an exceptions process.

The basic concept of water rationing is that each utility customer is given a certain allocation of water, expressed in billing units, to use in a billing period. If they use the amount they are allocated or less, charges for water are calculated at the normal rate. If they exceed their allocation, the portion in excess of their allocation is charged a penalty rate. The penalty rate may be broken into multiple tiers so the more the excess usage, the higher the penalty price per CCF, or 748 gallons, used. The purpose is <u>not</u> to generate revenue but rather to use water pricing as a way to motivate the customer to modify their usage to stay within their allocation and avoid being penalized, which most customers do. Those that don't reduce would be charged for their overuse at the penalty rates.

The method to allocate water when rationing is instituted varies according to customer type. It may be based on the number of people in a home, the number of dwelling units in a multifamily complex, or set as a percentage of past use during some prior year.

For single family residential customers, the per capita approach is probably the fairest practical method, easiest to communicate, would be best understood and accepted by the general public, and is effective in achieving cutbacks where they are needed most, in outdoor water use.

Staff recommends using a modified per capita rationing system developed by the Goleta Water District located in Southern California. Under this system, all households are given a default allocation sufficient for a family of four persons. Households that have more than four persons would be required to contact

the Water Billing Office and verify household size in order to be granted an increased allocation, which would depend on the actual number of persons living at the residence.

2010 Census data for the City of Millbrae indicates that only 27% of all occupied households within the City have four or more persons per household. Establishing a default allocation for a family of four would more than satisfy the 73% majority of households that have three or fewer persons per household. This method is similar to that last used by the City to ration water in 1991, which provided a baseline allocation for households of two or less, except that a census was undertaken then to survey the actual number of persons living at each household.

The Goleta rationing model is considered to be preferable because it eliminates the significant work associated with carrying out an occupancy census and alleviates concerns about potential for inaccurate responses. For current planning purposes, the Goleta model will be the one initially employed during a corresponding water shortage of Stage 4 or greater. The principle drawback is the problem of equity, since there will be less "cushion" in the allocation for households with four residents than there is for homes with fewer number of residents, and an increased possibility of exceeding their allocation. Allocation disagreements should be expected and procedures need to be put in place to handle valid appeals and exceptions (Section 3.5).

Table 3.12 below shows a typical rationing calculation for a single family residence in Stage 4. Recommended rationing allotments for single-family residential accounts are presented in Appendix B.

Table 3-12. Water rationing schedule: single-family residential accounts.

	CCF */month	Gallons per day:
Up to four persons:	8	193
Each additional person:	2	50
Example monthly allocation for a 6-person household:		
Base allocation:	8 CCF	
2 additional persons x 2 CCF per person	+ 4 CCF	
Monthly Allocation	= 12 CCF	= 290 or 48 GPCD

*CCF =748 gallons.

What makes multifamily customers more challenging for developing a water rationing system are the large differences in housing types, the presence or absence of irrigation meters at a complex, and the fact that many larger accounts are handled by an independent property management firm on behalf of the owner or homeowner's association. These companies typically do not track how many people reside in each unit or in the complex as a whole.

The standard method for rationing method for multiple-residential accounts will be based on the number of dwelling units associated with the water service account. The number of dwelling units is the best starting point since that data is available on the utility billing system and, in the absence of information about the

number of people living on the property; it is the next best driver for indoor water demand. However, further rationing options for multiple-residential accounts will be allowed to reflect the heterogeneous nature of building types on multifamily properties and the fact that some of these properties have separate irrigation accounts while others do not. These wide differences in user characteristics cause inequities in allocation based solely on the number of dwelling units. Offering alternatives allows the customer to choose for themselves the option that works best in their particular case. These options include:

- An allocation based on the number of persons residing at the property;
- An allocation based partly on the number of persons residing at the property and partly on landscape water needs at the property that reflect the same cutback to irrigation that other customers would experience (for properties without irrigation accounts);
- The same allocation per dwelling unit as single-family accounts would receive for certain properties that resemble single family lots in terms of lot coverage

A summary of the preferred and alternate rationing options for multiple residential accounts is presented in Appendix B.

As noted previously, rationing businesses is more difficult due to the heterogeneity of business types. Therefore, during Stage 4 businesses will be rationed based on reducing their average metered usage for the prior year by the percentage presented in Table 3-5.

It should be reiterated that water rationing is a situation that the City is seeking to avoid through long-term conservation efforts.

Other actions/restrictions that likely would be necessary in a severe water shortage emergency, in addition to those previously described, include the following:

- Prohibition on lawn/turf irrigation and on installation of new landscaping in new development;
- Prohibition on using potable water in fountains and ornamental water features;
- Prohibition on on-site vehicle washing, including dealer lots, company fleets;
- Rescinding hydrant and bulk water permits, i.e. temporary water meters;
- Suspending water main replacement projects

The Stage 4 public message is as follows:

"Due to continuing deterioration in storage and overall scarcity of available water supplies, all customers, residential and business alike, are now unavoidably subject to water rationing. The current water shortage is among the most severe faced in modern times. We must all continue to conserve water to the maximum extent possible and strive to maintain water use within our established rationing limits as long as the drought endures in order to avert a water crisis. All customers are urgently asked to make every effort to conserve water and/or face reductions in water allotments."

Table 3-13. Stage 4 severe water shortage emergency response measures

Water Shortage Magnitude/System-wide Reduction Goal: 26-35%

Water Shortage Magnitude/System-wide Reduction Goal: 26-35%
Demand Reduction Measures: • Continue measures from all previous stages • Institute water rationing for residential customers • Institute water rationing for commercial customers • Minimize water use by large landscape customers – only for the most valuable plant and tree survival • Prohibition on lawn/turf irrigation and on installation of new landscaping in new developments • Prohibition on car washing except at commercial car washes • Prohibition on on-site vehicle washing, including dealer lots, company fleets • Rescind hydrant and bulk water permits, prohibit use except by special permission • Require leak repair within 48 hours **Publicity/Communications** • Continue to provide regular media briefings, manage media coverage • Provide regular information reports to City Council and other agencies • Publish monthly consumption graph on the website • Prepare public notice regarding possible service connection moratorium • Publish information on ways to minimize most valuable landscape damage and loss **Operating Actions** • Modify utility billing system and bill format to compare actual use with customer allocation • Adopt penalty rates • Expand home water survey program • Increase customer service training to address high bills, irate customers • Convene the staff Appeals Board to process requests for exceptions and appeals of penalties • Expand water waste enforcement to 24/7 • Delegate field staff to assist in enforcement (shut offs, flow restrictors) • Continue all applicable operating actions listed under Stage 3 • Increase frequency of monitoring and reporting of water production and consumption • Undertake contingency planning for continuing/escalating shortage • Revise Department operating budget to address revenue shortfall • Defer portions of capital improvement program • Consider surcharges, rate changes

3.4.5 Stage 5 – Critical Water Shortage Emergency

Stage 5 represents an imminent and extraordinary crisis threatening health, safety, and security of the entire community. Under this dire situation, extreme measures are necessary to cut back water use by up to 50%. Not enough water would exist even to meet the community's full health and safety needs, the top priority. All water should be reserved for human consumption, sanitation, and fire protection purposes and any remaining amount allocated to minimize economic harm. A shortage of this severity could be expected to generate stress, confusion, and chaos much the same as any major emergency and at some point could transform into a full blown natural disaster that can no longer be governed by local a ordinance and may need to be managed by the same basic principles and command structure under the state Standardized Emergency Management System that other natural disasters are. The City has experienced water shortages in the past but never one of such large proportion.

This fifth stage would involve nothing less than rationing all customer groups and instituting a prohibition on residential outdoor water use for any reason (e.g., garden, car-washing, cleaning, maintenance, etc.). It may also require shutting down or severely restricting use at certain public facilities, like local parks and school play fields. Some businesses may be forced or required to either partially or completely close.

The planned response for a shortage of this magnitude would involve reducing rationing allocations for residential customers to minimal levels (Appendix B) and reducing commercial rationing amounts in accordance based on their previous usage and the reduction percentages shown in Table 3-5. All outdoor irrigation would be prohibited (other than by hand-held container and what has been captured or collected from another non-prohibited use). No water would be available for public showers or private, community, or public pools and hot tubs. These facilities likely would be forced to close.

A shortage of this magnitude could affect other local water suppliers as people tend to substitute normal activities, such as laundry, showers, etc. from their home to other locations not as affected. The City's response would therefore involve greater coordination at a regional and perhaps even statewide level.

The Stage 5 public message is as follows:

"The City of Millbrae is confronted with a critical water shortage emergency of unprecedented proportions. At this time, there exists barely enough drinking water for the most essential human health, sanitation, and safety needs. As a result, all outdoor watering is now prohibited. We understand the hardship this extraordinary condition poses to every resident and business in the City and appreciate the sacrifices people are making to ensure that the water system does not run dry. Everyone is urgently requested to do whatever is necessary to maintain water use within or below their allotted amount."

Table 3-14. Stage 5 critical water shortage emergency response measures.

Water Shortage Magnitude/System-wide Reduction Goal: 50%
Demand Reduction Measures: • Continue measures from all previous stages • Further reduce residential water allocations • Reduce commercial water allocation • Prohibit all outdoor irrigation • Require leak repair within 24 hours • No water for outdoor washing or recreational purposes; close pools, public showers • Continue all measures initiated in prior stages as appropriate **Publicity/Communications** • Contract with crisis/emergency communications consultant to develop crisis communications plan and major publicity campaign • Assign Public Information Officer to communicate with media • Set up emergency notification lists for medical/dental facilities, public facilities, large users, food and beverage facilities, and critical businesses **Operating Actions** • Consider shifting to EOC model of command management for overall policy guidance and coordination • Coordinate with CA Dept of Public Health, District Engineer and other emergency response agencies regarding water quality, public health issues • Coordinate with law enforcement agencies to address enforcement challenges • Continue water waste enforcement 24/7 • Delegate field staff to assist in enforcement (shut offs, flow restrictors) • Continue all applicable operating actions listed under Stage 4 • Coordinate with the Waste Water Treatment Plant Superintendent and the Utilities and Operations Superintendent for treatment plant processes regarding sewer line maintenance • Continue close monitoring and reporting of water production and consumption • Procure resources to utilize dead storage, if needed

- Undertake emergency planning for continuing/escalating shortage

3.4.6 Stage 6- Extreme Water Shortage Emergency

Stage 6 represents a water shortage disaster, in which water reduction would need to exceed 50%. Under such conditions, only enough water to cover minimum health and safety water allocations would be available. Shifting to an Emergency Operations Center model of command management will be necessary at this stage to quickly communicate and respond to new developments. It is likely also necessary to either contract with a crisis/emergency consultant or continue to work with the previously contracted consultant to guide communications plan and quickly distribute information to the public. An unprecedented shortage to this degree would require close coordination with the California Department of Public Health and other emergency response agencies to define appropriate actions and supplements that can help protect the health and safety of the community.

In addition to the reductions from previous stages, water for non-essential commercial uses will need to be cut completely. This would result in the closure of even more public facilities and commercial businesses.

The Stage 6 public message is as follows:

"The City of Millbrae is now in the midst of a water shortage disaster.. At this time, there exists only enough drinking water to meet human health, sanitation, and safety minimums. No water will be allocated for non-essential commercial uses to ensure that we are able to meet the health and safety minimums, We understand the hardship this extraordinary condition poses to every resident and business in the City and appreciate the sacrifices people are making to ensure that the water system does not run dry. Everyone is urgently requested to continue to do whatever is necessary to maintain water use within or below their allotted amount."

Table 3-15 Stage 6 Water Shortage Disaster response measures

Water Shortage Magnitude/System-wide Reduction Goal: >50%
Demand Reduction Measures: • Continue measures from all previous stages • Further reduce residential water allocations to health and safety minimum • No water allocated for non-essential commercial uses **Publicity/Communications** • Continue to work with crisis/emergency communications consultant to develop crisis communications plan and major publicity campaign **Operating Actions** • Shift to EOC model of command management for overall policy guidance and coordination • Continue coordination with CA Dept of Public Health, District Engineer and other emergency response agencies regarding water quality, public health issues • Coordinate with law enforcement agencies to address enforcement challenges • Continue water waste enforcement 24/7 • Delegate field staff to assist in enforcement (shut offs, flow restrictors) • Continue all applicable operating actions listed under Stage 5 • Coordinate with the Waste Water Treatment Plant Superintendent and the Utilities and Operations Superintendent for treatment plant processes regarding sewer line maintenance • Continue close monitoring and reporting of water production and consumption • Procure resources to utilize dead storage

- Undertake emergency planning for continuing/escalating shortage

3.5 Enforcement, Exceptions, and Appeals

An important part of a water shortage plan is to have the appropriate authority and a combination of methods to enforce mandatory measures such as water restrictions or rationing in order to protect public health and safety. General authority and powers of the City to enforce ordinances are contained in Title 1, Chapter 1 of the Millbrae Municipal Code. In addition, the City's water conservation ordinance contains specific language regarding enforcement of water use rules and regulations and includes provisions for issuing exceptions and hearing appeals.

3.5.1 Water Rates and Charges for Excessive Use

The City's current rate structure, which includes a monthly service charge, is shown in Table 3.14.

Table 3-16. Water rate structure covering 2020.

Meter Size	Monthly Service Charge
3/4"	$25.00
1"	$31.25
1-1 ½ "	$62.50
2"	$100.00
3"	$187.50
4"	$312.50
6"	$625.00
8"	$1,000.00
10"	$1,437.50

In addition to the service charge, a usage charge of $10.40 per hundred cubic feet (CCF or 748 gallons) is assessed based on meter readings. The proposed excess use schedule which would be used during a water shortage is shown in Table 3.15.

Table 3-17. Proposed excess water use charge schedule.

% Over Allocation	Excess Use Charge Per CCF
0-10%	$5.00
10.1% - 20%	$13.00
20.1% - greater	$25.00

Monthly Bill = (Monthly Service Charge) + (CCF used) ($10.40) + Excess Use Charge

Excess use fees Excess use fees are the primary method for enforcing water rationing and are imposed on customers whose water use exceeds their allocation when rationing is in effect. The purpose of the excess use fee is to make the consequences of exceeding one's rationing allocation so severe that the customer is induced to keep their water use within their allocation and avoid being fined. Like water rates,

there are two components to setting excess use fees: 1) the way they are structured; and 2) the dollar amount.

It is, however, recommended that the penalty amount be increased to bring it more in line with current rates, as shown below:

For example, in Table 3.15 above, a 4-person household is provided an allocation of 8 CCF per month in Stage 4. At 2020 rates, the normal water charges for a customer using 8 CCF would total $108.20, including the $25.00 monthly service charge for a 3/4" meter. Under water rationing, if that same customer used 16 CCF, their normal water charges would amount to $191.40, and excess use fees would cost $168 (1 CCF @ $5, 1 CCF @ $13 and 6 CCF @ $25), for a total of $359.40.

The purpose of a three-tier excess use structure is to avoid very large penalties for households that make a good faith effort to stay within their allocation but wind up going over a little. If a customer's water use exceeds one's allocation by a large amount, though, the penalty should be very steep.

Flow restriction: Some customers will continue to exceed their allotment regardless of the amount of their water bill. In such instances, the Public Works Department is authorized to install a flow restricting device to provide minimal water flow, just enough for health and safety purposes. In these cases the customer is charged a fee to cover the staff time needed to install the flow restrictor and another fee for its removal. Staff would not use this method where fire suppression sprinklers are on the same supply line as domestic water.

Disconnection/reconnection fees: Water suppliers have the legal authority to enforce water shortage regulations by terminating service for egregious violations. In such cases, the customer would be charged for both disconnection and reconnection.

Citation: Finally, the City's water conservation ordinance authorizes staff to issue administrative citations that would have to be paid or challenged in court. This method could be used in cases like a multi-family property where terminating service or restricting flow to all households may not be an option.

3.5.2 Enforcement Methods

Enforcement is carried out in a number of ways during a water shortage. In cases such as a report of water waste, the first step is to communicate with the customer by telephone, letter, door tag, or by making personal contact in the field to educate them about regulations. Many times this contact is all that is required to get the problem resolved. If not, enforcement progresses to a written notice of violation. Beyond this, there are several methods in the City's existing water conservation and water shortage ordinances that can be used to enforce water restrictions and rationing regulations. These methods are described below.

Penalty fees: This method would apply in situations involving violation of water restrictions, if, after multiple warnings had been given, a violation continued to occur at an account. The fee would be added to a customer's utility bill along with a written notice sent to the customer in advance. The penalty fee would increase with subsequent violations, as follows:

- 1st violation $100
- 2nd violation $200
- 3rd violation $500 (and each additional violation)

The City could consider higher penalty fees for large users that willfully violate water restrictions.

3.5.3 Exceptions

No water shortage plan can account for all situations. The exception procedure allows the Public Works Department to provide for special or exceptional circumstances that otherwise would create undue hardship for an individual customer or class of customers. An exception allows a customer to be relieved of a particular regulation or receive an increased allocation for the duration of the shortage. Therefore, it should be granted only when justified on specific grounds that warrant allocating more water than other similarly situated customers and when consistent with the intent of the water shortage regulations, while providing equal treatment of all customers.

Exception Measures

Following is a list of the City's exception measures:

- Under water restrictions, an exception application is not accepted unless the customer puts desired exception in writing.
- Under water rationing, an exception application should not be accepted unless an excess use fee has been assessed.
- Leaks would not qualify for an exception.
- It allows a resident who is not an account holder to force the customer of record to appeal.
- The process is administered by the Public Works Director.

The policy is to have the customer first demonstrate the demand reduction efforts taken to meet the restriction or allocation, and places responsibility for managing and monitoring water use on the customer. It also serves to minimize the number of exception applications from those merely seeking more water without having gone to the effort to try to live within their given allocation.

The policy would include a process that requires the Director of Public Works to make formal findings to authorize an exception. This is proposed to better articulate the standard that must be met in order to receive relief. The suggested language for such findings is as follows:

- Failure to do so would cause a condition affecting the health, sanitation, fire protection, or safety of the applicant or the public.
- Strict application of the allotment provisions imposes a severe or undue hardship on a particular business, or render it infeasible for a business or class of business to remain in operation.
- Alternative restrictions which achieve the same level of demand reduction as the restrictions from which an exception is being sought are available and are binding and enforceable.
- The customer has demonstrated to the Director's satisfaction that circumstances have changed warranting a change in the customer's allocation.
- Health care and retirement facilities using industry best management practices are eligible for an exception.
- Demonstration by a business of actions already taken to increase environmental sustainability that have reduced water consumption to the maximum extent feasible, as determined by the Public Works Director.

Additional recommendations regarding the exception process are as follows:

- That the denial of an exception may be appealed to an Appeals Board.

- The policy would adopt administrative procedures similar to those used by other cities for including appropriate information on an exception application, including the requirement that the applicant must demonstrate maximum practical reduction in water consumption.
- That the policy allow the Director to impose conditions requiring long-term water efficiency changes from customers as part of the exception process.

3.5.4 Appeals

The City's Municipal Code allows any water service customer who considers an enforcement action to have been erroneously undertaken to appeal their case to the City. The Public Works Director may consider the evidence presented by the customer and decide whether to uphold the enforcement action or to provide relief.

The difference between an exception and an appeal is that an appeal gives an individual the opportunity to challenge an official decision about an enforcement action. It is not the primary means to secure a larger allocation or get an exception to a water use regulation. However, as mentioned above, customers should be able to appeal a denial by the Public Works Director of such an exception request to an Appeals Board.

The most common reason for filing an appeal would be expected to contest large excess use fees that were levied while under water rationing, often due to a leak in the customers' plumbing fixture or system. The Finance Department may provide administrative relief, including forgiveness of excess use fees, for certain types of leaks that are considered to be beyond the customer's control, such as a leak that develops in an underground pipeline serving a property. Common maintenance items, such as a leaking toilet or failing automatic irrigation valve, that are considered to be customer's responsibility to control, would not be eligible for such forgiveness.

Recommendations Regarding Appeals

A new process could be added to allow a customer to request to use a portion of the excess use fee, on a one-time only basis, toward the installation of water conservation equipment in lieu of paying all of it to the City. If the customer already has water conserving fixtures such as high efficiency toilets, a high efficiency washing machine and indoor water saving fixtures installed then the City could provide a one-time forgiveness of excess use charges while under water rationing. To be considered for such forgiveness, the customer would be required to submit a completed survey and the City would provide them with educational information and water saving devices.

3.6 Water Shortage Recovery and Plan Termination

A water shortage ends when local rainfall, runoff, and reservoir storage levels improve to the point where the water system is once again capable of supporting unrestricted water demand. Any water use rules and regulations in effect at the time are officially rescinded by City Council and public notice is given that the water shortage is over. The Public Works Director would then oversee any remaining termination and plan review activities. These activities could include:

- Publicize gratitude for the community's cooperation;
- Restore water utility operations, organization, and services to pre-event levels;
- Document the event and response and compile applicable records for future reference;
- Continue to maintain liaison as needed with external agencies;

- Collect cost accounting information, assess revenue losses and financial impact, and review deferred projects or programs;
- Debrief staff to review effectiveness of actions, to identify the lessons learned, and to enhance response and recovery efforts in the future;
- Complete a detailed evaluation of affected facilities and services to prepare an "after action" report; and
- Update the Water Shortage Contingency Plan as needed.

4. Implementation

This section describes the essential elements of implementing the WSCP and discusses the approximate lead time needed to prepare for and activate a demand reduction program. The elements discussed below differ in the amount of staff time, effort, priority, and funding that is required for implementation; some steps can be taken relatively quickly and inexpensively while others will require substantial ongoing work and expense before they are able to be set up and applied as shortage management tools. The primary purpose of this section is to map out the major tasks and timelines required to implement the demand reduction program and to identify where additional ongoing efforts are necessary to address critical gaps.

4.1 Timeline for Declaring a Water Shortage

Planning for a water shortage may begin earlier in winter, and should commence early if winter conditions are unusually dry or are preceded by a dry year, but it is not usually until the end of April that the water supply outlook for the year ahead becomes certain. This leaves very little lead-time to prepare for implementing the water shortage contingency plan.

Long-range weather forecasting has not yet advanced to the point where it is possible to know in advance with certainty whether the City will experience a water shortage. Therefore, it is not practical to plan more than one season at a time, other than to prepare possible scenarios using multiple dry years for modeling purposes.

4.2 Process for Declaring a Water Shortage

Once the water shortage condition has been defined (as soon as reasonably certain), recommendations regarding water shortage rules and regulations consistent with this contingency plan are discussed with staff. Following consideration by staff, formal action declaring a water shortage is taken by City Council. The legal requirements for such action are covered in Section 350 et.seq. of the California Water Code. The code requires the following process be followed:

- That the City Council hold a public hearing on the matter;
- That the public hearing be properly noticed (minimum of publishing once in newspaper at least seven days prior to the date of the hearing); and
- Upon determining and declaring the existence of a water shortage, City Council may then adopt regulations and restrictions governing the use and delivery of water.

In accordance with Municipal Code section 8.45.030, rules adopted by the City Council establishing water use regulations become effective immediately after their publication in a newspaper of general circulation in the City.

4.3 Public Notification and Coordination

Even before formal declaration of a water shortage, a public information/media program should be activated to provide customers with as much advance notice as possible. Following Council action, all residents and businesses, not just customers of record, would need to be provided notice of water shortage rules and regulations via a variety of media and communications methods, including print and television media, internet, and other methods. The timeline for getting information out to the public on television, radio, and through newspaper articles is very short. Additional notification would occur though the City's residential newsletter and utility billings, which both require a longer lead time. It is also recommended that a separate website page be designed in advance if rationing becomes necessary to provide basic information about the program, conservation information, forms related to the program, contact information, etc., which then can be modified and expanded as necessary. Large water users and those businesses that are most likely to be seriously affected should be contacted directly in writing. Public notification will be provided for non-English speakers.

Coordination with other City departments and 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.

Getting the public involved and keeping them informed will require a significant expansion of existing water conservation public information and outreach efforts. There is printed information already available on how to conserve water and additional material can be developed to tailor to various types of water customers.

4.4 Personnel, Office Space and Equipment

Staffing for different levels of a drought will vary and would include staff from the Public Works Department including from the Water Resources & Conservation Program, Utilities and Operations Division, and from the Finance Department. Additional staffing may be needed.

The role of the administrative and office assistants would be to help with the processing of customer appeal and exception requests, administration of the Appeals Board meetings, and related correspondence. The Utilities and Operations Division Water Distribution staff would be responsible for patrolling the service area for violations of watering rules and restrictions and public contact, while Public Works and Finance staff would deal with the greatly increased customer contact (in person and by telephone) and would help with utility billing issues. The meter reader's role would be to support the additional customer service workload related to verifying meter reads, data-logging, and other field activities. Water conservation staff's role would assist customers with on-site water audits, provide conservation education, and conduct publicity. Water staff would provide leak detection and repair advise and instruction. Assistance may also be needed from the utility bill system programmers to provide utility billing system software services when water rationing is in effect.

Existing staff and any new hires would need to be quickly integrated into the organization with basic training in the following areas:

- Public Works Water Program functions, organization, facilities, and service area boundary;
- Customer service standards, City policies, and safety responsibilities;
- Computer equipment and the utility billing system;
- Water rates and charges and meter reading; and
- Water shortage regulations and enforcement processes.

In addition, all existing Public Works Department and Finance Department staff would need to understand water shortage rules and regulations in effect at the time to be able to respond to customer questions.

4.5 Effect of Water Shortages on Revenue

One of the negative consequences of using demand reduction to deal with water shortages is the corresponding reduction in revenue that occurs to the City's Water Enterprise Fund as a result of reduced water sales. To better understand the magnitude of revenue losses that the Water Enterprise Fund might experience, a table was developed based on 2020 fiscal year revenues, the most recent year for which complete revenue data is available. The table assumes the "ready-to-serve" or fixed monthly service charge that is based on meter size would remain unaffected while the volumetric portion of the Water Fund's revenue derived from water sales would vary by customer class in accordance with the allocation presented in Table 3.6 over the annual period in which water shortage regulations are likely to be in effect. Results are summarized in Table 4-1.

Table 4-1. Revenue losses associated with various water shortages.

Customer Category	FY 2020 Revenue			Revenue Losses Due to Reduced Water Sales					
	From Water Service Charges	From Water Sales	Total	Stage 1 (5%)	Stage 2 (15%)	Stage 3 (25%)	Stage 4 (35%)	Stage 5 (50%)	Stage 6 (>50%)
Single Family Residential	$1,734,000	$4,624,454	$6,358,454	$231,223	$693,668	$1,156,113	$1,618,559	$2,312,227	$2,312,227+
Multi-Family Residential	$84,000	$1,654,442	$1,738,442	$82,722	$248,166	$413,611	$579,055	$827,221	$827,221+
Business	$88,200	$1,519,814	$1,608,014	$75,991	$227,972	$379,954	$531,935	$759,907	$759,907+
Municipal	$13,500	$276,422	$289,922	$13,821	$41,463	$69,105	$96,748	$138,211	$138,211+
Irrigation	$28,200	$720,637	$748,837	$36,032	$108,096	$180,159	$252,223	$360,318	$360,318+
Other	$29,400	$5,377	$34,777	$269	$807	$1,344	$1,882	$2,688	$2,688+
Totals	$1,977,300	$8,801,146	$10,778,446	$440,057	$1,320,172	$2,200,286	$3,080,401	$4,400,573	$4,400,573+
Estimated Net Revenue				$10,338,389	$9,458,274	$8,578,160	$7,698,045	$6,377,873	>$6,377,873

Table 4-1 shows revenue losses ranging from just over $440,000 in a 5% water shortage situation to just over $4.4 million in a water shortage disaster over 50%. Compared to the 2020 revenues of approximately $10.8 million, the City's net revenue would be reduced to approximately $10.3 million in Stage 1 and to approximately $6.4 million in Stage 6. These revenue loss projections are the best estimates at this time and may underestimate the problem. There are other factors that could affect revenue during times of mandatory demand reduction that are more difficult to quantify, which include the following reasons:

- It is unlikely that system water use would immediately recover to normal levels in the months following a period of curtailment as modelled, thereby further depressing income;
- The table above does not include added operating costs of staff, equipment, and materials related to the water shortage response;
- The table above does not include potential penalties or excess use charges; and
- There would be relatively minor cost savings associated with reduced power and chemical usage at the WPCP.

Whatever the situation, one element of implementing this WSCP involves examining the Water Enterprise Fund budget for the coming year and recommending action(s) to reduce expenditures to lessen or overcome the revenue shortfall. Options include the following:

- Deferring planned capital improvements; and
- Considering possible rate adjustments or surcharges.

Another implementation issue associated with pricing is the Proposition 218 procedure for increasing water rates, fees, and charges. It is assumed that the proposed changes to both penalty fees and excess use fees discussed in Section 4 would require written notice to all customers, a public hearing, and consideration of written protests and comments before implementing the new fees. Given the minimum 45 day protest period, the entire Proposition 218 process can take several months to complete.

4.6 Household Survey

To implement water rationing for single residential customers in Stages 4 and 5, it is recommended that the City use the system developed by Goleta Water District in lieu of performing a household census or survey. The advantages are that it is simpler, easy to understand, more likely to be feasible with the utility billing system, avoids having to perform a household survey or census, allows adjustments for larger households, and achieves the fundamental goal of reducing peak season water use, particularly outdoor use. The Goleta system also requires that, for households larger than four, certain efficiency steps be taken before authorizing a larger allocation.

For the majority of households that have fewer than four residents, little opposition to this approach is expected. However, the one downside to this approach is that it does afford somewhat unequal amounts of water on a per person basis to households of different sizes, and so some may object to the City adopting this system. If, based on public input, a true per capita rationing system becomes the preferred approach to ration water instead of the Goleta model, the following describes the work involved to update the number of people residing at each account on the billing system. In the past this survey has been done by mail and is based fundamentally on the honor system. There are currently 6,060 accounts classified as single family residential customers on the water system. This task would involve data processing personnel to prepare data files for mailing, a mailing service vendor to provide printing and mailing services and to provide return envelopes, and additional temporary staff to handle data input. The task would also involve maintaining census data on a daily basis as household sizes change and new

utility accounts are established. The lead time necessary to conduct the survey and enter data is approximately 3 months.

The other major work item involved in a census-based approach to rationing involves configuring the utility billing system to calculate allotments based on household size, discussed below.

4.7 Utility Billing/Data Processing Capabilities

Implementing this WSCP will require utility billing system software that provides the necessary capabilities and flexibility to quickly shift from normal billing practices to water rationing mode. The billing system would need to be capable of, at a minimum, the following:

- Integrate penalty fees into the utility bill;
- Calculate rationing allocations, whether determined by per capita, per dwelling unit, or percentage of past use method;
- Maintain long-term water usage history;
- Calculate excess use fees;
- Address special needs customers (overwrite default allocation to handle rationing exceptions);
- Include notes and messages on customer bills;
- Handle special cases, such as multiple meters serving a single property; and
- Calculate seasonally varying landscape water budgets.

4.8 Customer Exceptions and Appeals

One of the actions that is triggered when City Council adopts the Water Shortage Contingency Plan is the establishment of an Appeals Board. Part of implementing this WSCP involves providing administrative support to the Appeals Board, including processing requests, preparing recommendations, posting agendas, attending meetings, preparing meeting minutes, and handling correspondence. After the Board's membership has been established and approved by City Council, the Appeals Board function can be implemented quickly, but depending on the stage of water shortage and number of appeals filed, may require substantial staff time over the course of the water shortage to address the resulting caseload.

4.9 Large Landscape Water Budgets

The City's Water Resources & Conservation Program offers a large landscape water budget program for the largest commercial customers. The program consists of developing water budgets for approximately 34 large landscape sites served by dedicated irrigation meters, offering water audits, and education. The project is designed so that water budgets can be quickly adapted for use as a water shortage management tool in Stages 3-5.

4.10 Monitoring Water Supply and Demand

Metered water consumption is reported on a bi-monthly basis through automated sales reports generated by the utility billing system.

Consumption by large users would be monitored on a more frequent basis, as determined feasible and practical by the Public Works Director. During severe supply shortages, water use status reports would be supplied to the Public Work Director. If the trend in consumption is such that the rate of drawdown at Hetch Hetchy is greater than anticipated, the City Manager and City Council are notified so that corrective

action (such as increased publicity and enforcement or consideration of declaring the next higher stage) can be taken.

4.11 Ongoing Implementation Steps

The final tasks in updating the Plan include the following steps:

- Preparing an updated water shortage ordinance;
- Preparing a proposed Proposition 218 notice that would be used in emergency planning to specify penalty and excess use fees.

The following implementation steps are recommended:

- Ensure the utility billing system database is able to meet the City's requirements for use in water rationing if it becomes necessary;
- Continue to evaluate supply, demand, and City population to ensure recommendations in this Plan are appropriate.
- As much as possible, prepare water shortage notices, announcements, materials, and mailing lists in advance, including materials for non-English speakers.
- Conduct monthly review of actual water use compared to projected use in the shortage stage for the given month to enable timely adjustments if anticipated shortage response is not obtained.

4.12 Plan Refinement/Re-Evaluation Process

The Water Shortage Contingency Plan is a living document and will need to be responsive to the effectiveness of conservation measures in the midst of a water shortage. The City will analyze monthly monitoring data, consult with all City Departments, and convene the Water Appeals Board to determine if adaptive measures need to be taken to achieve the necessary shortage reduction levels. In the case that the measures are not working as desired, the City will add new actions or refine current actions to achieve greater savings. Measures from a higher stage can be adopted into the current stage, such as requiring leak repairs within 24 hours rather than 72 hours in Stage 3. When updates are needed, the City will coordinate amongst all City Departments to refine the plan and provide updated information and measures to the City Council for approval.

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Appendices

Appendix A – California Water Code, Sections 350 and 10632

Appendix A California Water Code Sections 350-359 and 10632 Water Code Section 350-359

350. The governing body of a distributor of a public water supply, whether publicly or privately owned and including a mutual water company, may declare a water shortage emergency condition to prevail within the area served by such distributor whenever it finds and determines that the ordinary demands and requirements of water consumers cannot be satisfied without depleting the water supply of the distributor to the extent that there would be insufficient water for human consumption, sanitation, and fire protection.

351. Excepting in event of a breakage or failure of a dam, pump, pipe line or conduit causing an immediate emergency, the declaration shall be made only after a public hearing at which consumers of such water supply shall have an opportunity to be heard to protest against the declaration and to present their respective needs to said governing board.

352. Notice of the time and place of hearing shall be published pursuant to Section 6061 of the Government Code at least seven days prior to the date of hearing in a newspaper printed, published, and circulated within the area in which the water supply is distributed, or if there is no such newspaper, in any newspaper printed, published, and circulated in the county in which the area is located.

353. When the governing body has so determined and declared the existence of an emergency condition of water shortage within its service area, it shall thereupon adopt such regulations and restrictions on the delivery of water and the consumption within said area of water supplied for public use as will in the sound discretion of such governing body conserve the water supply for the greatest public benefit with particular regard to domestic use, sanitation, and fire protection.

354. After allocating and setting aside the amount of water which in the opinion of the governing body will be necessary to supply water needed for domestic use, sanitation, and fire protection, the regulations may establish priorities in the use of water for other purposes and provide for the allocation, distribution, and delivery of water for such other purposes, without discrimination between consumers using water for the same purpose or purposes.

355. The regulations and restrictions shall thereafter be and remain in full force and effect during the period of the emergency and until the supply of water available for distribution within such area has been replenished or augmented.

356. The regulations and restrictions may include the right to deny applications for new or additional service connections, and provision for their enforcement by discontinuing service to consumers willfully violating the regulations and restrictions.

357. If the regulations and restrictions on delivery and consumption of water adopted pursuant to this chapter conflict with any law establishing the rights of individual consumers to receive either specific or proportionate amounts of the water supply available for distribution within such service area, the regulations and restrictions adopted pursuant to this chapter shall prevail over the provisions of such laws relating to water rights for the duration of the period of emergency; provided, however, that any distributor of water which is subject to regulation by the State Public Utilities Commission shall before making such regulations and restrictions effective secure the approval thereof by the Public Utilities Commission.

358. Nothing in this chapter shall be construed to prohibit or prevent review by any court of competent jurisdiction of any finding or determination by a governing board of the existence of an emergency or of regulations or restrictions adopted by such board, pursuant to this chapter, on the ground that any such action is fraudulent, arbitrary, or capricious.

359. (a) Notwithstanding any other provision of law that requires an election for the purpose of authorizing a contract with the United States, or for incurring the obligation to repay loans from the United States, and except as otherwise limited or prohibited by the California Constitution, a public water agency, as an alternative procedure to submitting the proposal to an election, upon affirmative vote of four-fifths of the members of the governing body thereof, may apply for, accept, provide for the repayment together with interest thereon, and use funds made available by the federal government pursuant to Public Law 95-18, pursuant to any other federal act subsequently enacted during 1977 that specifically provides emergency drought relief financing, or pursuant to existing federal relief programs receiving budget augmentations in 1977 for drought assistance, and may enter into contracts that are required to obtain those federal funds pursuant to the provisions of those federal acts if the following conditions exist:

(1) The project is undertaken by a state, regional, or local governmental agency.
(2) As a result of the severe drought now existing in many parts of the state, the agency has insufficient water supply needed to meet necessary agricultural, domestic, industrial, recreational, and fish and wildlife needs within the service area or area of jurisdiction of the agency.
(3) The project will develop or conserve water before October 31, 1978, and will assist in mitigating the impacts of the drought.
(4) The agency affirms that it will comply, if applicable, with Sections 1602, 1603, and 1605 of the Fish and Game Code
(5) The project will be completed on or before the completion date, if any, required under the federal act providing the funding, but not later than March 1, 1978.

(b) Any obligation to repay loans shall be expressly limited to revenues of the system improved by the proceeds of the contract.

(c) No application for federal funds pursuant to this section shall be made on or after March 1, 1978.

(d) Notwithstanding the provisions of this section, a public agency shall not be exempt from any provision of law that requires the submission of a proposal to an election if a petition requesting such an election signed by 10 percent of the registered voters within the public agency is presented to the governing board within 30 days following the submission of an application for federal funds.

(e) Notwithstanding the provisions of this section, a public water agency that applied for federal funds for a project before January 1, 1978, may make application to the Director of the Drought Emergency Task Force for extension of the required completion date specified in paragraph (5) of subdivision (b). Following receipt of an application for extension, the Director of the Drought Emergency Task Force may extend the required completion date specified in paragraph (5) of subdivision (b) to a date not later than September 30, 1978, if the director finds that the project has been delayed by factors not controllable by the public water agency. If the Drought Emergency Task Force is dissolved, the Director of Water

Resources shall exercise the authority vested in the Director of the Drought Emergency Task Force pursuant to this section.

(f) For the purposes of this section, "public water agency" means a city, district, agency, authority, or any other political subdivision of the state, except the state, that distributes water to the inhabitants thereof, is otherwise authorized by law to enter into contracts or agreements with the federal government for a water supply or for financing facilities for a water supply, and is otherwise required by law to submit those agreements or contracts or any other project involving long-term debt to an election within that public water agency.

Water Code Section 10632

10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:

(a) Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply, and an outline of specific water supply conditions which are applicable to each stage.

(b) An estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply.

(c) Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.

(d) Additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.

(e) Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.

(f) Penalties or charges for excessive use, where applicable.

(g) An analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.

(h) A draft water shortage contingency resolution or ordinance.

(i) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.

Appendix B – Residential Water Rationing Allotments

Residential Water Rationing Allotments

(Monthly allotment, in CCF or 748 gallons/billing units)

<table>
<tr><th></th><th colspan="2">Stage 4
26-35% Deficiency</th><th>Stage 5
36-50% Deficiency</th></tr>
<tr><td>Single Residential Accounts
Up to 4 persons:
Each Additional person:</td><td colspan="2">8
2</td><td>6.5
2</td></tr>
<tr><td rowspan="2">Multiple Residential Accounts
Allotment is <u>per dwelling unit</u> based on number of dwelling units on account:

2-4:
5-20:
Over 20:</td><td colspan="2">Separate irrigation meter serving property?
No Yes</td><td>All multiple residential accounts, regardless of whether there is a separate irrigation meter serving the property or not:</td></tr>
<tr><td>7
6
5</td><td>6
5
4</td><td>6
5
4</td></tr>
<tr><td>Multiple Residential Accounts Alternative A
Allotment is in gallons per person per day (gpcd) based on the number of permanent residents at the account:</td><td colspan="2">47 gpcd</td><td>45 gpcd</td></tr>
<tr><td>Multiple Residential Accounts Alternative B
(not applicable to 2-unit accounts)

Where lot coverage, by dwelling units, is <35% of entire property</td><td colspan="3">Same allotment as single residential accounts</td></tr>
</table>

Appendix C – Ordinance No 593 and Resolutions No 92-17 and No. 97-6

ORDINANCE NO. 593

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF MILLBRAE AMENDING AND RESTATING IN ITS ENTIRETY CHAPTER 9, "WATER CONSERVATION" OF TITLE 8 OF THE MILLBRAE MUNICIPAL CODE

The City Council of the City of Millbrae does hereby ordain as follows:

SECTION 1: AMENDMENT OF CHAPTER 9 OF TITLE 8 ON "WATER CONSERVATION

Sections 8-9.01 through 8-9.14, inclusive, of Chapter 9, "Water Conservation" of Title 8 of the Millbrae Municipal Code hereby are repealed and in their place the following Sections 8-9.01 through 8-9.09, inclusive, are enacted:

Chapter 9

WATER CONSERVATION

Sections:

8-9.01 FINDINGS AND DETERMINATIONS.
8-9.02 DEFINITIONS.
8-9.03 REGULATIONS, PROHIBITIONS AND WATER USE/CONSERVATION PRACTICES FOR ALL CUSTOMERS.
8-9.04 LANDSCAPING.
8-9.05 ALLOCATIONS USED AS WATER CONSERVATION GOALS.
8-9.06 CONSERVATION PLANNING AND PROGRAMS.
8-9.07 ENFORCEMENT.
8-9.08 WATER SHORTAGE EMERGENCY.
8-9.09 SEVERABILITY.

SECTION 8-9.01. FINDINGS AND DETERMINATIONS

The City Council of the City of Millbrae hereby finds and determines that:

A. The City obtains all of its water from the San Francisco Water Department and is entirely dependent on the San

Francisco Water Department supply source for its water and that supply is limited and subject to ever increasing demands.

B. The continuation of Millbrae's economic prosperity is dependent on an adequate supply of water being available for current and future use.

C. It is the policy of the City to promote the conservation and efficient use of water and to prevent the waste of this valuable resource.

D. Landscapes are essential to the quality of life by providing areas for active and passive recreation and as an enhancement to the environment by cleaning air and water, preventing erosion, offering fire protection, and replacing ecosystems lost to development.

E. Landscape design, installation, and maintenance can and should be water efficient.

F. Water use and conservation goals are set out in and can be achieved by appropriate implementation of the City's Urban Water Management, Water Shortage Contingency Plan and the Memorandum of Understanding Regarding Urban Water Conservation in California to which the City is a signatory.

G. Pursuant to the Water Conservation in Landscaping Act, Government Code Sections 65590, et seq., the "model" water efficient landscape ordinance adopted by the Department of Water Resources is binding upon and enforceable in the City of Millbrae (hereafter referred to as the "Model Water Efficient Landscape Ordinance").

H. This Ordinance is enacted to carry out certain statutory responsibilities of the City as a water purveyor to achieve the maximum beneficial use of available water resources and to prevent the waste, unreasonable use or unreasonable method of use of water.

I. The adoption of this Ordinance is categorically exempt from the California Environmental Quality Act pursuant to Section 15307 of Title 14 of the California Code of Regulations because this constitutes an action authorized by State law to ensure the maintenance, restoration, or enhancement of a natural resource where the regulatory process involves procedures for the protection of the environment.

SECTION 8-9.02. DEFINITIONS

For the purpose of this Ordinance, the following terms, phrases, words and their derivations shall have the meaning given herein and the definitions contained in the Model Water Efficient Landscape Ordinance are also incorporated herein. When not inconsistent with the context, words used in the present tense include the future, words in the plural number include the singular number and words in the singular number include the plural number. The word "shall" is always mandatory and not merely directory.

A. "Customer" is any person using water supplied by the Millbrae Water Division.

B. "Director" is the Director of Public Works/City Engineer of the City of Millbrae.

C. "Person" is any person, firm partnership, corporation, company or organization of any kind.

D. "Unit of Water" is 100 cubic feet of water or 748 gallons.

E. "Water" is water furnished and distributed to customers by the Water Division.

F. "Water Division" is the Millbrae Municipal Water Division.

SECTION 8-9.03. REGULATIONS, PROHIBITIONS, AND WATER USE/CONSERVATION PRACTICES FOR ALL CUSTOMERS

A. The regulations, prohibitions, and restrictions on the use of water set forth below shall apply to all customers.

1. Each customer shall promptly repair broken or defective plumbing, sprinkler, watering or irrigation systems which permit the escape or leakage of water. Use of water through any meter is prohibited when the customer has been given ten (10) days notice to repair broken or defective plumbing, sprinklers, water or irrigation systems and has failed to effect such repairs.

2. Hoses used for any purposes shall have positive shut-off valves.

3. No use of water shall be allowed which results in flooding or runoff in gutters, driveways or streets.

4. Service connections for new construction will be granted only if water saving devices or fixtures are incorporated into the plumbing system, such as low flow shower heads with shutoffs, and low flow water closets and all other conditions of this Ordinance and the Municipal Code are met.

5. Use of potable water for consolidation of backfill, dust control, soil compaction or other non-essential construction purposes should be limited to those situations where no other source of water can be used or is available. The use of groundwater and/or reclaimed water for such purposes is permitted when approved pursuant to applicable restrictions and regulations.

6. 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.

7. Covers shall be required for all new swimming pools and encouraged to be installed for existing pools.

8. Except for fire protection service lines, a pressure-reducing valve or valves that will limit the static water pressure to each floor of the structure to fifty pounds per square inch gauge shall be installed in all new or remodeled residential structures.

9. All new or remodeled residential, commercial, or industrial structures shall have insulation of hot water pipes

where such piping is located in attics, garages, crawl spaces or unheated spaces other than between floors or in interior walls to provide a maximum heat loss of fifty British thermal units per hour per linear foot for piping up to and including two inches in diameter, and one hundred British thermal units per hour per linear foot for all sizes greater than two inches in diameter.

10. In all new or remodeled commercial or industrial structures, a pressure reducing valve or valves to limit the static water pressure to eighty pounds per square inch gauge to the upper floor of the structure, shall be installed only if no supplemental internal pumping is anticipated. The intent of this section is to limit available water pressure to the structure consistent with uses of water on the premises.

11. Water used for all cooling purposes and for commercial car washes shall be recycled. Self service car washes may be excepted from this recycling requirement by the Director provided the Director finds that water pressure, application rate and time of operation limit the amount of water used to an acceptable quantity.

12. No single use of water shall be permitted where recirculation of water is economically and technically feasible. An economically feasible recirculation installation is defined as, over the useful life of the equipment to be installed, a system where the present worth of the cost of the water saved is more than the present worth of both the capital and annual operation and maintenance costs of the system. Such economic and

technical feasibility shall be determined by the user and reviewed by the Director. In the event there is a disagreement between the user and the Director, a review and final determination shall be made by the City Council.

13. All water service connections to the City water system shall be metered with City approved meters.

14. Homeowner-provided new irrigation systems and the expansion of existing irrigation systems for single and multiple family residences shall be low water use systems.

15. All new landscaping in homeowner-provided single and multi-family residences shall be drought resistant and/or designed for low water use to conserve irrigation water.

B. All customers are encouraged to comply with the water use/conservation practices set forth below.

1. Irrigation of lawns or ground cover in any area, including residential, commercial, industrial, or recreational/golf courses is recommended to be done only between the hours of 6:00 p.m. and 10:00 a.m.

2. Sidewalks, walkways, plazas, houses, businesses, driveways, patios, parking lots, tennis courts, buildings, awnings, or other hard surfaced areas should not be cleaned using water from hoses or by use of water directly from faucets or other outlets.

3. Restaurants, meeting rooms, banquet facilities, hotels and dining facilities should serve water to customers only upon the individual request of the person consuming the water.

4. Water used to fill or maintain decorative fountains or pools should be recycled.

SECTION 8-9.04. LANDSCAPING

New or rehabilitated landscaping shall be installed pursuant to all applicable provisions of the Model Water Efficient Landscape Ordinance, in Division 2, Title 23, California Code of Regulations Chapter 2.7, as it may be amended, and this Ordinance. Consistent with said model ordinance, landscaping of any open space, park, playground, golf course, or other open area shall be planned to conserve water through choice of plants, landscape design, and irrigation techniques. The development and use of the following water saving techniques shall be encouraged subject to relevant legal and economic constraints:

(a) Use of native or drought resistant plants;

(b) Use of water application systems that are controlled to supply water efficiently to meet the needs of the given plants in each situation, as for example: drip irrigation systems and low delivery sprinkler nozzles;

(c) Use of grey water and sewage effluent for irrigation when water quality, environmental, public health, and economic conditions permit such use;

(d) Collection and reuse of run-off water where possible; and

(e) Scheduling of irrigations according to plant requirements.

SECTION 8-9.05. ALLOCATIONS USED AS WATER CONSERVATION GOALS

This Ordinance establishes a voluntary conservation program based on 1987 water usage and the allocation methodology that was in effect during the City's rationing program from the spring of 1991 through March of 1993. The Director shall maintain and update said allocation system and provide allocation information to all customers. The City may establish a system of incentives to recognize or reward customers who maintain water use within the allocation goals. The maintenance and use of this allocation methodology and information shall in no way establish a precedent for or constitute an a priori basis for future allocations in the event that mandatory rationing or more stringent conservation measures are reinstituted.

The methodology for establishing allocation water conservation goals is described below for each category of accounts.

A. Allocation Goals for Residential Accounts

1. Summer Allocation Goals. During the "summer" months of April through November, bi-monthly accounts will be allocated 65% of the amount of water used during the corresponding months or billing periods in 1987.

2. Winter Allocation Goals. During the "winter months of December, January, February and March, bi-monthly accounts will be allocated 85% of the amount of water used during the corresponding months or billing period in 1987.

3. Minimum Allocation Goals. The minimum amount of water for single-family residences and duplexes is set at 6 units

(4,488 gallons) per month. The minimum amount of water for multiple-family dwellings such as apartments, condominiums, triplexes and others is set at 5 units (3,740 gallons) per month. No allocation will be established at less than these amounts.

4. Maximum Allocation Goals. Initially, no single-family or duplex unit allocation will be greater than thirty-two (32) units per bi-monthly billing period for "summer" months or twenty-two (22) units per bi-monthly billing period for "winter" months.

B. Allocation Goals for Commercial/Industrial Accounts

Commercial, industrial and other non-residential bi-monthly accounts will be allocated 85% of the amount of water used during the corresponding months or billing periods in 1987 with the following exceptions:

Allocations for connections that serve both inside and outside/irrigation uses shall be adjusted to allocate only 40% of the estimated amount of water used for outside/irrigation uses in 1987 during the "summer" months of April through November. Outside/irrigation use is defined as the difference between the monthly consumption for the months of April through November and the average monthly consumption for the four months of January, February, March and December, all for 1987.

C. Allocation Goals for Irrigation Service Accounts

Accounts classified for irrigation will be 40% of the actual consumption for the same period in 1987. Where 1987 actual consumption data are not available, the Director shall establish

an appropriate allocation using relevant parameters and reflecting the equivalent of a 60% reduction from normal irrigation.

D. Allocation Goals for New Accounts

Initial allocations for new single-family residences and duplex accounts will be established at 12 units per billing cycle. Initial allocations for new multiple-family accounts such as apartments, condominiums, triplexes and others will be established at 10 units per billing cycle. Final allocations for single-family residence accounts will be calculated on the number of documented residents within a household. Allocations for the first two residents for single-family residence accounts will be established at 75 gallons per day each and 55 gallons per day for each subsequent resident. Final allocations for multiple-family residences will be established at 55 gallons per day for each documented resident. In the case of commercial or industrial customers, business data supplied to the Director will be the basis for establishing the allocation.

E. Allocation Goals Where No Past History Exists

When water records for calendar year 1987 are not available, do not exist for all or various portions of the year, or do not allow or provide the basis for establishment of equitable allocations, earlier records, records of customers with similar water uses or other parameters determined by the Director may be used to set or adjust individual allocations.

SECTION 8-9.06. CONSERVATION PLANNING AND PROGRAMS

The City's Urban Water Management Plan and the Memorandum of Understanding Regarding Urban Water Conservation in California set forth the requirements and goals for conservation plans and programs. These documents shall guide the City and the Director in the planning and execution of conservation programs. It is the policy of the City to provide conservation incentives and support services to customers, including conservation services, materials and supplies, and rebates, where appropriate, to the extent of available resources and in accordance with procedures established by the Director.

SECTION 8-9.06. ENFORCEMENT

It is unlawful for any person or entity to violate or to fail to comply with any of the requirements of this Ordinance. Unless otherwise provided in this Ordinance or the Millbrae 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 Ordinance is continued or permitted to be continued and shall be punished as herein provided.

Any violation of or failure to comply with the requirements in this Ordinance shall be an infraction subject to the penalties set forth in Section 1-1.01 of the Millbrae Municipal Code (Ordinance No. 564). Any willful and knowing violation of a requirement of the Ordinance may also constitute a misdemeanor

subject to the penalties set forth in Section 1-1.02 of the Millbrae Municipal Code (Ordinance No. 564).

Persons designated to issue citations hereunder and to enforce the rules and regulations of this Ordinance pursuant to the authority provided in Penal Code Section 836.5 are the Director of Public Works, Public Works Superintendent, Public Works Supervisor, Public Works Foreman, and the Water Resources and Conservation staff. The issuance of citations will normally follow the continued failure or impracticality of other warning enforcement measures.

SECTION 8-9.08. WATER SHORTAGE EMERGENCY

Notwithstanding the foregoing relating to conservation of water supplies, in times of a declared water shortage emergency pursuant to Section 350 et seq. of the California Water Code, certain additional mandatory water conservation practices will be necessary. The Water Shortage Contingency Plan adopted January 28, 1992 amending the Urban Water Management Plan shall provide the basis for such additional practices.

SECTION 8-9.09. SEVERABILITY

Should any provision of this Ordinance be determined to be invalid or unenforceable in particular circumstances by any court of competent jurisdiction, then such determination shall not affect any other provision of the Ordinance and all such other provisions shall remain in full force and effect.

SECTION 2: **EFFECTIVE DATE; POSTING; PUBLICATION**

This Ordinance shall be in full force and effect as of April 1, 1993. The City Clerk shall publish this Ordinance within fifteen (15) days of its enactment in the San Mateo Times, a newspaper of general circulation printed and published in the County of San Mateo and circulated in the City of Millbrae. The City Clerk also shall post in the office of the City Clerk a certified copy of the full text of this Ordinance, along with the names of those Councilmembers voting for and against the Ordinance.

INTRODUCED at a regular meeting of the City Council of the City of Millbrae held on the 23 day of March, 199_.

PASSED AND ADOPTED at a regular meeting of the City Council of the City of Millbrae held on the 13 day of April, 1993 by the following roll call vote:

AYES:	Councilmembers:	Cannizzaro, Fogarty, Morse, Treseler, and Van Iderstine
NOES:	Councilmembers:	None
ABSENT:	Councilmembers:	None

Paul Van Iderstine
MAYOR

ATTEST:

Alicia Espinoza
CITY CLERK

Appendix D – Hazard Mitigation Plan/Emergency Response Plan Flow Chart

Chapter 12.
City of Millbrae

12.1 Hazard Mitigation Plan Point of Contact

Primary Point of Contact
Colleen Haupt, Project Manager
621 Magnolia Avenue
Millbrae, CA 94030
Telephone: 650-259-2354
e-mail Address: chaupt@ci.millbrae.ca.us

Alternate Point of Contact
Khee Lim, City Engineer
621 Magnolia Avenue
Millbrae, CA 94030
Telephone: 650-259-2347
e-mail Address: klim@ci.millbrae.ca.us

12.2 Jurisdiction Profile

The following is a summary of key information about the jurisdiction and its history:

- Date of Incorporation—January 14, 1948
- Current Population—23,136 (as of January 1, 2016 – CA DOF)
- Population Growth—3% growth since 2010 Census (21,536). As of January 2014, Millbrae had a total population of 22,605. According to census data, Millbrae's population grew by four percent from 2000 to 2010. However, the Association of Bay Area Governments (ABAG) predicts that Millbrae's growth will pick up over the next two decades, bringing the population to 25,700 by 2030.
- Location and Description—The City of Millbrae is located on the Peninsula, 15 miles south of San Francisco. The boundaries of this city extend roughly from the Bayshore Freeway on the east to Skyline Boulevard on the west. This distance is approximately 1.7 miles. The distance between the north and south city limit line is approximately 2.05 miles. The City of Millbrae has approximately 100 employees with an operating budget of $52 million. The City of Millbrae borders the following San Mateo County jurisdictions: Burlingame to the south, Pacifica to the West, San Bruno and South San Francisco to the North.
- Brief History—Millbrae boasts over 22,000 residents of diverse ethnic, national, and cultural backgrounds. Residents are employed in various industries throughout the Bay Area and children attend one of five public elementary schools, or private schools. The City's senior citizen community, with the eager generosity of the City's many service clubs and private donations, recently dedicated an attractive new senior wing within the Millbrae community center. Millbrae's approach is demarcated by a picturesque new overpass. A small city with global vision, Millbrae proudly nurtures Sister City relationships with La Serena, Chile, Mosta, Malta, and its newest Sister City Kaiping, China.

  The City of Millbrae has experienced its share of disasters, which include the Loma Prieta Earthquake of 1989, the winter storms of 1998 which resulted in landslides in the area of Sleepy Hollow,

Clearfield, and Morningside as well as flooding around the Westin and Clarion Hotels. In the year 2000 Millbrae experienced the Crestview landslide.

Major Government facilities include the Millbrae Park and Recreation Center, the City Hall complex, which contains City Administration and San Mateo County Sheriff's Office Millbrae Patrol Bureau, two fire stations, the Chetcuti Community Center and a water treatment and corporation yard. Millbrae is also home to the Bart Intermodal Station, which is a transportation hub for BART, CalTrain and Samtrans.

- Climate—According to the National Weather Service, Millbrae enjoys a typical Mediterranean climate featuring cool, wet winters and dry, mild summers. Night and morning fog are common during the summer months. Frequent, westerly sea breezes keep temperatures relatively mild throughout the year with highs in the middle fifties and lows in the lower forties during the winter and highs in the lower seventies and lows in the lower fifties during the summer. Annual precipitation ranges from 20 inches in the lowlands to 32 inches in the hills near Skyline Boulevard and I-280; most of the rain falls from November through April. Snow is very rare; the last measurable occurrence was on February 5, 1976. The nearest National Weather Service station is at the nearby San Francisco International Airport, where records go back to early 1927.
- Governing Body Format—Millbrae operates as a General Law City, providing for a Council/Manager form of government that clearly distinguishes the legislative power of the City Council from the administrative powers of the City Manager.
- The five-member City Council is elected directly by the residents of Millbrae. As the legislative branch of the government, the City Council makes final decisions on all major City matters. The Council adopts ordinances and resolutions necessary for efficient governmental operations, approves the budget, and acts as a board of appeals. The Council appoints the City Manager and City Attorney, as well as the members of the City's boards and commissions. The City Council assumes responsibility for the adoption of this plan; the City Manager will oversee its implementation.
- Development Trends— The City of Millbrae, incorporated in 1948, was a small settlement largely dependent on market farming, the Mills Estate and Dairy, West Coast Porcelain Works (later the Royal Container Company), and vegetable and flower farming until World War 2. Southern Pacific Railroad, the 40-line streetcar line, El Camino Real and Skyline Road (in the approximate location of I-280) linked the settlement to nearby towns and San Francisco. Millbrae in the period 1920-1950 was beginning its transformation from its roots as a farming village supplying the produce markets of San Francisco to a small town. Development of the town was largely governed by transportation features: the railway, streetcar line, highways and airport.
- Properties might also reflect the importance of modern transportation networks in their architectural style. For example, properties that show the influence of new, speedier forms of transportation emerged in a variant of Art Deco style known as Streamline Moderne. Streamline Moderne buildings borrowed curves, shiny metal, circular windows from newly modernized cars, train and ships. Smooth surfaces and "speed lines" are also characteristics of the style.

- Millbrae's development continues to be shaped by the transportation network that surrounds it. As a major hub on the networks that connect rail (Caltrain), mass transit (BART and SAMTRANS) and air travel (SFO), the city has attracted higher density commercial and residential development along the rail line and State Highway 82/El Camino Real. The downtown area on Broadway and the west side of El Camino Real north of Victoria Street still display some of the small town feeling of the mid-20th Century.
- The City of Millbrae General Plan identifies policies and programs addressing the development and redevelopment of land, preservation of parks and open spaces, provision of housing for current and future residents, conservation of natural resources, improvement of the circulation and transportation system, control of noise and protection of life and property from hazards. Additionally, the General Plan assures that tax money is generated to provide high levels of public services and maintenance of public facilities and infrastructure.

12.3 Capability Assessment

An assessment of legal and regulatory capabilities is presented in Table 12-1. An assessment of fiscal capabilities is presented in Table 12-2. An assessment of administrative and technical capabilities is presented in Table 12-3. Information on National Flood Insurance Program (NFIP) compliance is presented in Table 12-4. Classifications under various community mitigation programs are presented in Table 12-5. An assessment of education and outreach capabilities is presented in Table 12-6.

TABLE 12-1. LEGAL AND REGULATORY CAPABILITY

	Local Authority	Other Jurisdiction Authority	State Mandated
Building Code	Yes	No	Yes
Comment: *Local Building Official and Fire Marshal for Standards Codes – Muni Code 9.05.010 – Adopted California Building Code, 2013 Edition, 11/26/2013, Ordinance 746*			
Zoning Code	Yes	No	No
Comment: *Community Development* *MMC 10.05, Adoption of Zoning Plan, Adopted 10/13/09 , Ordinance 726MMC 10.05*			
Subdivisions	Yes	No	No
Comment: *Public Works & Community Development* *MMC 10.15, Adopted 6/17/51, Ordinance 69,*			
Stormwater Management	Yes	Yes	Yes
Comment: *Public Works* *MMC 8.70 & MRP 2.0* Order No. R2-2015-0049 NPDES Permit No. CAS612008			
Post-Disaster Recovery	Yes	No	No
Comment: *Community Development with Public Works* *San Mateo County Public Works Mutual Aid Resolution 074124 adopted 10/20/05*			

TABLE 12-1. LEGAL AND REGULATORY CAPABILITY

	Local Authority	Other Jurisdiction Authority	State Mandated
Real Estate Disclosure	No	Yes	Yes
***Comment**: County Assessors Office. CA. State Civil Code 1102 requires full disclosure on Natural hazard Exposure of the sale/re-sale of any and all real property.*			
Growth Management	Yes	No	Yes
***Comment**: Community Development* *The City of Millbrae General Plan (1998-2015) addresses growth management through the following land use goals: Preserve the Quality of Residential Neighborhoods, Promote Property Site Planning, Architectural Design and Property Maintenance, Maintain a Variety of Land Uses, Support Economic Development and revitalize and Enhance Commercial Areas, and Provide Adequate Services and Facilities. The Housing and Circulation Elements provide guidance on managing future growth. The Chapter 4 Circulation Element identifies current traffic, circulation, and parking issues, presents current traffic counts for City arterials and adjoining freeways, and discusses relevant regional transportation plans. Recommended policies and implementing actions address current and anticipated needs. The Chapter 5 Housing Element provides goals and objectives to guide housing requirements, needs, policies, programs and address future trends and projections.*			
Site Plan Review	Yes	No	No
***Comment**: Community Development* *The City of Millbrae addresses Site Plan Review in the General Plan (1998-2015) Land Use Goal 2 (LU2): Promote Proper Site Planning, Architectural Design and Property Maintenance. The City of Millbrae Planning and Zoning Code (effective November 13, 2009) establishes the requirements for the project site plan design review and entitlement process. In addition to Planning, all proposed projects are reviewed by the Building, Public Works and Fire Departments to ensure they meet all local, state and federal requirements and obtain all of the necessary permits and entitlements, including Planning Commission and/or City Council approval before construction.*			
Environmental Protection	Yes	No	Yes
***Comment**: Community Development with Public Works* *The Community Development Department evaluates all proposed development projects for environmental impacts under the California Environmental Quality Act/National Environmental Protection Act (CEQA/NEPA)*			
Flood Damage Prevention	Yes	No	Yes
***Comment**: Public Works* *MMC 8.50, Flood Damage Prevention, Adopted 9/23/03, Ordinance 688MMC 8.50*			
Emergency Management	Yes	No	Yes
***Comment**: This role and position is currently be defined for assignment. (Municipal Code with Title 19, Division 2)*			

TABLE 12-1. LEGAL AND REGULATORY CAPABILITY

	Local Authority	Other Jurisdiction Authority	State Mandated
Climate Change	Yes	No	No

***Comment**: Community Development with Public Works*
The City has not formally adopted a Climate Action Plan. However the City has adopted and implemented a number of policies, programs and projects to address the reduction of GHG emissions and related efforts to improve sustainability. The following are the City's Goals and Policies:

Climate Protection and Sustainability Goals and Policies:

- *U.S. Mayor's Climate Protection Agreement, Adopted 6/12/07, Resolution 07-31.*
- *Participated in ICLEI- Cities for Climate Protection Campaign, Adopted 6/12/07, Resolution 07-32.*
- *Resolution 09-68, adopted 9/22/09: Establishes specific Green House Gas (GHG) emissions reduction goals for municipal operations and communitywide GHG emissions sources in the City of Millbrae.*
- *Currently participating in the countywide RICAPS program for regionally-integrated climate action planning, GHG inventories and CAP development.*
- *Currently preparing a draft CAP pursuant to adopted targets and in coordination with RICAPs.*

The Safety Element of the City of Millbrae General Plan (1998) contains policies related to climate change effects and adaptation:
Policy S1.1 Location of A Future Development; Policy S1.8 Reforestation

- *Policy S1.12 Ordinances and Codes*
- *Policy S1.17 Drainage Channels, Hydraulic Pumps and Conduits*
- *Policy S1.18 Hazards*
- *Policy S1.19 Rise in Sea level*
- *Policy S2.2 Emergency Services Facilities*
- *Policy S2.3 Hazardous Awareness*

The San Mateo County Sea-Level Rise Vulnerability Assessment: The City of Millbrae is participating in this regional assessment to inventory of all assets vulnerable to sea-level rise, identify specific vulnerabilities of 30 representative assets, issue initial recommendations on adaption measures, and improve flooding and sea-level rise mapping. The assessment is currently scheduled for completion in August, 2016.

Other		No	No

***Comment**:*

General or Comprehensive Plan	Yes	No	Yes

Is the plan equipped to provide linkage to this mitigation plan? Yes.

***Comment**: The City of Millbrae has begun a two-year process to update the General Plan, which was last adopted in 1998. The General Plan will guide decision making for land use, transportation, infrastructure, community design, environmental issues, and other important topics that impact the community. The General Plan is a long-range planning document that will look ahead to 2040. The General Plan Update will include a specific plan for the Downtown Priority Development Area and an Active Transportation Plan. The City contracted the consultant, Mintier Harnish to prepare the General Plan. The project began in March, 2016 and is estimated to be completed in the fall of 2017. The Updated General Plan will include linkages to the Local Hazard Mitigation Plan*

TABLE 12-1. LEGAL AND REGULATORY CAPABILITY

	Local Authority	Other Jurisdiction Authority	State Mandated
Capital Improvement Plan	Yes	No	No
What types of capital facilities does the plan address? Utilities, building improvements, engineering, equipment, and similar projects. Specific projects in the 2015-2020 CIP include street improvements, storm drains, water system, sewer collection system, water pollution control plant, public facilities, parks, studies and technology, and garage (listed in budget) *How often is the plan updated? Annually* ***Comment**: Public Works with Finance*			
Floodplain or Watershed Plan	No	No	No
***Comment**: Public Works* *MMC 8.50, Flood Damage Prevention, Adopted 9/23/03, Ordinance 688. Includes subsections such as 8.50.040 Basis for establishing the areas of special flood hazard, 8.50.080 Warning and disclaimer of liability, and 8.50.110 Designation of the floodplain administrator. The City Engineer or Director of Public Works are appointed to administer and enforce policies outlined in this chapter. Section 8.50.050 Compliance required ensures public safety by prohibiting construction in floodplains without proper permitting and code compliance. MMC 8.50*			
Stormwater Plan	Yes	No	No
***Comment**: Public Works with Community Development* *MMC 8.70, Adopted in 6/14/94. Ordinance 607, The purpose of this chapter is to ensure the future health, safety and general welfare of city citizens: Eliminating non-storm water discharges to the municipal separate storm sewer; Controlling the discharge to municipal separate storm sewers from spills, dumping or disposal of materials other than storm water; Reducing pollutants in storm water discharges to the maximum extent practicable. The intent of this chapter is to protect and enhance the water quality of our watercourses, water bodies and wetlands in a manner pursuant to and consistent with the Clean Water Act. (Ord. 607, § 1; 1976 Code § 8-14.02).MMC 8.70*			
Habitat Conservation Plan	No	No	No
***Comment**: N/A – if one developed would be defined by Community Development*			
Economic Development Plan	Yes	No	No
***Comment**: Community Development, Comprehensive Annual Financial Report* *2013 Millbrae Economic Development Plan. Adopted 2/12/13. (By William R. Kelly, Kelly Associates Management Group). There was an update to the 2013 Millbrae Economic Development Plan completed Feb. 2015 by William R. Kelly.* *The 2013 Economic Development Plan provides an analysis of City's current economic profile, identifies certain financial issues facing the City that are interrelated with economic development, assesses the relative strengths, weakness, opportunities and threats that are perceived by community stakeholders, and offers short-term and long-term strategies for addressing economic needs.*			
Shoreline Management Plan N/A	No	Yes	No
***Comment**: Managed by Bay Area Conservation Development District with U.S. Fish and Wildlife Service*			

TABLE 12-1. LEGAL AND REGULATORY CAPABILITY

	Local Authority	Other Jurisdiction Authority	State Mandated
Community Wildfire Protection Plan	Yes	No	No
Comment**: Fire Marshal and Building Official* ***Annex to 2010 Association of Bay Area Governments Local Hazard Mitigation Plan, Millbrae *The Annexation to the MJ-LHMP outlines mitigation measures that Millbrae is required to implement to decrease the loss or risk to life and property in event of a hazard, including fire. Exhibit C to the annex lists mitigation actions and priorities adopted by Millbrae to address fire hazards. The Plan identifies the Fire Chief as a liaison between the Millbrae Fire Department and the City in terms of emergency response issues, and the City's Emergency Response Operating Center.* ***Community Wildfire Protection Plan*** *In 2010, a collaborative group consisting of CAL FIRE, Resource Conservation District of Santa Cruz County, San Mateo Resource Conservation District, and the US Fish and Wildlife Service worked together to create a draft Community Wildfire Protection Plan (CWPP) which includes the city of Millbrae in the planning area. The Plan identifies fire protection agencies with jurisdiction, volunteer organizations, large land owners, communities, neighborhoods, open spaces and other environmental resources in the planning area that may be at risk of fire hazards.* ***Municipal Code Chapter 9.30 (Fire Code)*** *Chapter 9.30 of the Millbrae Municipal Code (Fire Code) was last updated as a result of Ordinance 757 passed October 27, 2015. The code identifies safety information, restricted use of flammable materials, and other detailed rules for handling combustible or flammable goods. The code also identifies climate conditions, geographical conditions, and topographical conditions that may exacerbate fire hazards in the city of Millbrae. Some of these conditions include prolonged periods of drought in combination with warm western winds and increasing temperatures due to climate change, and increasing response times for fire equipment and other emergency services due to urban sprawl and physical locations of residential dwellings.*			
Forest Management Plan	No	No	Yes
***Comment**: National Forest Service*			
Climate Action Plan	Yes	No	No
***Comment**: Public Works with Community Development* *The City has not formally adopted a Climate Action Plan. However the City has adopted and implemented q number of policies, programs and projects to address the reduction of GHG emissions and related efforts to improve sustainability. Please Climate Change Section for more details.*			
Other	Yes	No	No
***Comment**: Urban Water Management Plan (2010, 2015), Millbrae Station Area Specific Plan (2016)*			
Comprehensive Emergency Management Plan	Yes	No	No
***Comment**: This role and position is currently being defined for assignment.*			

TABLE 12-1. LEGAL AND REGULATORY CAPABILITY

	Local Authority	Other Jurisdiction Authority	State Mandated
Threat & Hazard Identification & Risk Assessment	Yes	No	No
***Comment**: Community Development to align with General Plan.* *The City of Millbrae addresses the following hazard and safety issues as required by federal, state, regional and local agencies: Emergency Preparedness, Seismic and Geologic Hazards, Flood Hazards, Fire Hazards, Aviation Hazards, Hazardous Materials and Noise (Ground Transportation, Aircraft, Non-Transportation).* *MMC 4.65, Adopted 12/27/83, Ordinance 476. Chapter 4.65 addresses the storage of hazardous materials to ensure the protection of health, life, resources, and property through prevention and control of unauthorized discharges of hazardous materials. Chapter 4.65 requires a permit for the storage of any hazardous material as well as regulates the manner in which materials are stored.* *In 2010 Millbrae officials, in cooperation with the San Mateo County Fire Department and the San Mateo County Sheriff's Office of Homeland Security and Emergency Services, drafted the Millbrae Local Hazard Mitigation Plan Annex (LHMP) to ensure the most effective and economical allocation of resources for protection of human health, property and the environment in the event of an emergency or disaster.* *2015 Multijurisdictional Local Hazard Mitigation Plan and Millbrae Annex: In September of 2015, the San Mateo County Emergency Manager's Associate selected a consultant to update the 2010 Multijurisdictional Plan. The consultant has been working on the update and it is anticipated that the update will be completed in the summer of 2016. In addition to the Multijurisdictional Annex, individual jurisdictions and districts within the County will be preparing their own specific Annex which will tier off of the County-wide plan. The City of Millbrae will be preparing an updated Annex as part of this process.* *Geologic and Seismic Hazards: MMC Chapter 9.05 adopts the 2013 City Building Code (CBC). The CBC contains requirements for seismic safety. All new development in the city is required to adhere to the standards and regulations in the code. Chapter 9.65 of the municipal code addresses the seismic identification program for unreinforced masonry buildings.*			
Post-Disaster Recovery Plan	Yes	No	No
***Comment**: This role and position is currently being defined for assignment.*			
Continuity of Operations Plan	Yes	No	No
***Comment**: This role and position is currently being defined for assignment.*			
Public Health Plan	No	Yes	No
***Comment**: San Mateo County Health System*			

TABLE 12-2. FISCAL CAPABILITY

Financial Resources	Accessible or Eligible to Use?
Community Development Block Grants	No
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	No
User Fees for Water, Sewer, Gas or Electric Service	Yes, Water and Sanitation
Incur Debt through General Obligation Bonds	Yes

TABLE 12-2. FISCAL CAPABILITY

Financial Resources	Accessible or Eligible to Use?
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Other	No

TABLE 12-3. ADMINISTRATIVE AND TECHNICAL CAPABILITY

Staff/Personnel Resources	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	Community Development / Municipal / Contract Support/Public Works
Engineers or professionals trained in building or infrastructure construction practices	Yes	Community Development / Municipal / Contract Support/Public Works
Planners or engineers with an understanding of natural hazards	Yes	Community Development\Local/ Contract Support/Public Works
Staff with training in benefit/cost analysis	Yes	Community Development\Local/ Contract Support
Surveyors	Yes	/ Contract Support (San Mateo County Public Works)
Staff capable of making substantial damage estimates	Yes	Community Development\Local/ Contract Support
Personnel skilled or trained in GIS applications	Yes	Community Development\Local/ Contract Support/Public Works
Scientist familiar with natural hazards in local area	Yes	Community Development\Local/ Contract Support
Emergency manager (via San Mateo County Emergency Operation Services)	Yes	Community Development\Local/ Contract Support
Grant writers	Yes	Community Development\Local/ Contract Support/Public Works

TABLE 12-4. NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

Criteria	Response
When did the community enter the NFIP?	1981
When did the Flood Insurance Rate maps become effective?	September 30, 1981
What local department is responsible for floodplain management?	Public Works & Community Development
Who is your floodplain administrator? (department/position) Per Municipal Code section 8.50.260.2	City Planner, Building Official, Public Works Director, City Engineer

TABLE 12-4. NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

Criteria	Response
▪ Is this a primary or auxiliary role?	Auxiliary
Are any certified floodplain managers on staff in your jurisdiction?	No
What is the date of adoption of your flood damage prevention ordinance?	Ordinance 688, 1976
▪ Does your floodplain management program meet or exceed minimum requirements?	Meet
When was the most recent Community Assistance Visit or Community Assistance Contact?	11/20/2007
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed?	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction?	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program?	Yes
▪ If so, what type of assistance/training is needed?	Training on any new regulations.
Does your jurisdiction participate in the Community Rating System (CRS)?	No
▪ If so, is your jurisdiction seeking to improve its CRS Classification?	Yes
How many Flood Insurance policies are in force in your jurisdiction?	61
▪ What is the insurance in force?	$18,323,800
▪ What is the premium in force?	$61,392
How many total loss claims have been filed in your jurisdiction?	38
▪ How many claims were closed without payment/are still open?	14 CWOP
▪ What were the total payments for losses?	$178,560.42

TABLE 12-5. COMMUNITY CLASSIFICATIONS

	Participating?	Classification	Date Classified
Community Rating System	No	N/A	N/A
Building Code Effectiveness Grading Schedule – Currently participating in the process to receive a rating.	Yes	TBD	TBD
Public Protection	No	N/A	
Storm Ready	No	N/A	N/A
Firewise	No	N/A	N/A

TABLE 12-6. EDUCATION AND OUTREACH

Criteria	Response
Do you have a Public Information Officer or Communications Office?	Yes
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website?	Yes
▪ If yes, please briefly describe.	Link to the last Hazard Mitigation Annex and Emergency Preparedness information
Do you utilize social media for hazard mitigation education and outreach?	Yes – PD & FD No – City of Millbrae
▪ If yes, please briefly describe.	FD, PD with focus on public safety in general.
Do you have any citizen boards or commissions that address issues related to hazard mitigation?	Yes
▪ If yes, please briefly specify.	Muni Code - Emergency Services Disaster Board
Do you have any other programs already in place that could be used to communicate hazard-related information?	Yes
▪ If yes, please briefly describe.	CERT program
Do you have any established warning systems for hazard events?	Yes
▪ If yes, please briefly describe.	SMC Alert via PD and FD

12.4 Integration with Other Planning Initiatives

The following describe the jurisdiction's process for integrating the hazard mitigation plan into local planning mechanisms.

12.4.1 Existing Integration

The following plans and programs currently integrate the goals, risk assessment and/or recommendations of the hazard mitigation plan

- General Plan – Community Development & Public Works: The General CIP Storm Projects-Storm Drain System Master Plan will integrate information and link with the LHMP be prepared to address deficiencies in the 2015 General system. The Master Plan Update, in the Hazards & Safety Element will link with LHMP.
- New FEMA maps: The City of Millbrae has received the FEMA Flood Map Update in 2016 and Public Works will update flood insurance information as needed based on the updated maps. The FEMA Flood Map Update for 2016 is in the draft stage and there will be additional opportunities for the City to comment on the new FEMA flood maps.

Opportunities for Future Integration

The following plans and programs do not currently integrate the goals, risk assessment and/or recommendations of the hazard mitigation plan, but provide an opportunity for future integration:

- Grant participation opportunities (FEMA) which the city will collaboratively work on, with the Fire and Sheriff's departments
- Participation in more rating programs and will work collaboratively with the Fire and Sheriff's departments
- Mutual Aide Agreements-San Mateo County Public Works Mutual Aid Agreement has been established in 2015. Protocols and Standard Operating Procedures have also been established
- Update Flood Damage Prevention Ordinance to 2004 standards
- Increased integration with public outreach initiatives

12.5 Jurisdiction-Specific Natural Hazard Event History

Table 12-6 lists all past occurrences of natural hazards within the jurisdiction.

TABLE 12-6. NATURAL HAZARD EVENTS

Type of Event	FEMA Disaster # (if applicable)	Date	Preliminary Damage Assessment
Crestview Landslide & Pinehurst Court		February 2000	$11,000,000
Sleepy Hollow, Clearfield & Morningside Landslide	DR-1203	February 1998	Unknown
1989 Loma Prieta Earthquake	DR-845	October 1989	Unknown
Landslide @ 21 & 25& 29 Via Canon	DR-677	February 1983	Not available

12.6 Jurisdiction-Specific Vulnerabilities

Repetitive loss records are as follows:

- Number of FEMA-identified Repetitive-Loss Properties: 0
- Number of FEMA-identified Severe-Repetitive-Loss Properties: 1
- Number of Repetitive-Loss Properties or Severe-Repetitive-Loss Properties that have been mitigated: 0

Other noted vulnerabilities include:

- City Water Storage Tanks are not up to current seismic codes. Tanks have been in service since 1970 and have passed their useful life. The City of Millbrae recently completed the Water Storage Tanks Master Plan and is actively seeking funding to implement the projects recommended in the Master Plan.

- Aging water distribution system. Majority of the 75 miles of water distribution system are also over 60 years old and in urgent need of replacement and retrofit
- Aging sanitary sewer collection system. Majority of the 55 miles sanitary sewer mains are over 60 years old and in urgent need of replacement.

12.7 Hazard Risk Ranking

Table 12-7 presents the ranking of the hazards of concern.

TABLE 12-7. HAZARD RISK RANKING

Rank	Hazard Type	Risk Rating Score (Probability x Impact)	Category
1	Earthquake	48	High
2	Severe Weather	33	Medium
3	Flood	18	Medium
4	Landslide	18	Medium
5	Drought	3	Low
6	Dam Failure	0	Low
7	Wildfire	0	Low

12.8 Hazard Mitigation Action Plan and Evaluation of Recommended Actions

Table 12-8 lists the actions that make up the City of Millbrae hazard mitigation action plan. Table 12-9 identifies the priority for each action. Table 12-10 summarizes the mitigation actions by hazard of concern and the six mitigation types.

TABLE 12-8. HAZARD MITIGATION ACTION PLAN MATRIX

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
Action #MB-1: Water System Inter-Tie with San Francisco Airport						
Existing	Drought, Earthquake	2, 4, 5, 7, 8, 10 & 11	City of Millbrae	Medium	Water Enterprise Fund	Short Term
Action #MB-2: Water Storage Tanks Seismic Upgrade/Retrofit/Replacement						
Existing	Drought, Earthquake	2, 4, 5, 7, 8, 10 & 11	City of Millbrae	High	Water Enterprise Fund & SRF	Long Term
Action #MB-3: Tree Trimming Program						
New & Existing	Severe Weather, Wildfire	1 & 2	City of Millbrae	Low	General Fund	On Going
Action #MB-4: Emergency Evacuation Warning System & Shelter						

TABLE 12-8. HAZARD MITIGATION ACTION PLAN MATRIX

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
Existing	Earthquake, Landslide, Wildfire, Flood, Tsunami	2, 3, 6, 9 & 10	City of Millbrae	High	General Fund	Long Term
Action #MB-5: Construct New Public Works Corporation Yard West of US101						
New	Earthquake, Flood, Tsunami	1, 4, 6 & 11	City of Millbrae	High	General Fund & Enterprise Funds	Long Term
Action #MB-6: Inspect and Retrofit Millbrae Avenue Overpass						
Existing	Earthquake	1, 4, 6 & 11	City of Millbrae	Medium	General Fund	Ongoing
Action #MB-7: Retrofit, acquire, or relocate the identified SRL property within Millbrae.						
Existing	Flood	1,3,4,5,6,7, 8,11	City of Millbrae	High	HMGP, PDM	Long Term
Action G-1—Where appropriate, support retrofitting, purchase, or relocation of structures in hazard-prone areas to prevent future structure damage. Give priority to properties with exposure to repetitive losses.						
Existing	All	1, 3, 4, 5, 6, 7, 11	Jurisdictions	High	FEMA Hazard Mitigation Grants	Long-term (depending on funding)
Action G-2—Consider participation in incentive-based programs such as the Community Rating System, Tree City, and StormReady.						
New and existing	All	All	Jurisdictions	Low	General Fund	Long-term
Action G-3—Maintain good standing under the National Flood Insurance Program by implementing programs that meet or exceed the minimum NFIP requirements. Such programs include enforcing an adopted flood damage prevention ordinance, participating in floodplain mapping updates, and providing public assistance and information on floodplain requirements and impacts.						
New and existing	Flooding	2, 3, 5, 6, 8	San Mateo County Unincorporated and Municipalities with SFHAs	Low	General Fund	Short-term and ongoing
Action G-4—Where feasible, implement a program to record high water marks following high-water events**.**						
New and existing	Flooding, Severe Weather	1, 3, 4, 5, 6	Jurisdictions	Medium	General Fund; FEMA Grant Funds (Public Assistance)	Long-term
Action G-5—Integrate the hazard mitigation plan into other plans, programs, or resources that dictate land use or redevelopment.						
New and existing	All	1, 2, 3, 4, 5, 6, 7, 8, 10	Jurisdictions	Low	General Fund	Short-term
Action G-6—Provide incentives for eligible non-profits and private entities, including homeowners, to adapt to risks through structural and nonstructural retrofitting.						
New and existing	All	2, 3, 4, 5, 6, 7, 8, 10, 11	Jurisdictions	Low	Operating Budgets	Ongoing
Action G-7— Support the County-wide initiatives identified in Volume I of the hazard mitigation plan.						

TABLE 12-8. HAZARD MITIGATION ACTION PLAN MATRIX

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
New and existing	All	All	Jurisdictions	Low	General Fund	Short- and long-term
Action G-8— Actively participate in the plan maintenance protocols outlined in Volume I of the hazard mitigation plan.						
New and Existing	All	1, 4	Jurisdictions	Low	Staff Time, General Funds	Short-term

TABLE 12-9. MITIGATION STRATEGY PRIORITY SCHEDULE

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority[a]	Grant Priority[a]
MB-1	7	High	Medium	Yes	No	Yes	High	Low
MB-2	7	High	High	Yes	Yes	No	High	High
MB-3	2	Medium	Low	Yes	No	Yes	Medium	Low
MB-4	5	High	Medium	Yes	Yes	No	Low	Low
MB-5	4	High	High	Yes	No	No	Low	Low
MB-6	4	High	Medium	Yes	Yes	No	Medium	Medium
MB-7	8	Medium	High	No	Yes	No	Medium	Medium
G-1	7	High	High	Yes	Yes	No	High	High
G-2	11	High	Low	Yes	No	Yes	High	Low
G-3	5	Medium	Low	Yes	No	Yes	High	Low
G-4	5	Medium	Medium	Yes	Yes	Yes	Medium	Medium
G-5	9	Medium	Low	Yes	No	No	Medium	Low
G-6	9	Low	Low	Yes	No	Yes	Low	Low
G-7	11	Low	Low	Yes	No	Yes	High	Low
G-8	2	Low	Low	Yes	No	Yes	High	Low

a. See the introduction to this volume for explanation of priorities.

TABLE 12-10. ANALYSIS OF MITIGATION ACTIONS

Hazard Type	Action Addressing Hazard, by Mitigation Type[a]					
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Drought						MB-1 MB-2
Flood						MB-4 MB-5 MB-7
Earthquake		MB-2 MB-6				MB-4 MB-5
Landslide					MB-4	
Severe Weather	MB-3				MB-4	

a. See the introduction to this volume for explanation of mitigation types.

12.9 Future Needs to Better Understand Risk/Vulnerability

None

12.10 Additional Comments

Approximately four year ago, the San Mateo County Sheriff's Office Millbrae Patrol Bureau, along with other public safety partners such as, EMS, SamTrans, County offices of Probation, Public Works, Coroner's Office and others, operate on a 700Mhz trunked two-way radio system using 'P25' technology. P25 is the industry standard for mission critical use and has proven functionality for interoperable communication amongst like users. Since the installation of this technology five years ago, the County has made it a priority to maintain the system and has recently funded radio infrastructure upgrades to: double channel capacity, ensure upgrades keep the system reliable, add additional frequencies and increase licensing. These upgrades will allow more agencies of any public safety discipline to join the system and provide more capacity in the event of a catastrophic emergency.

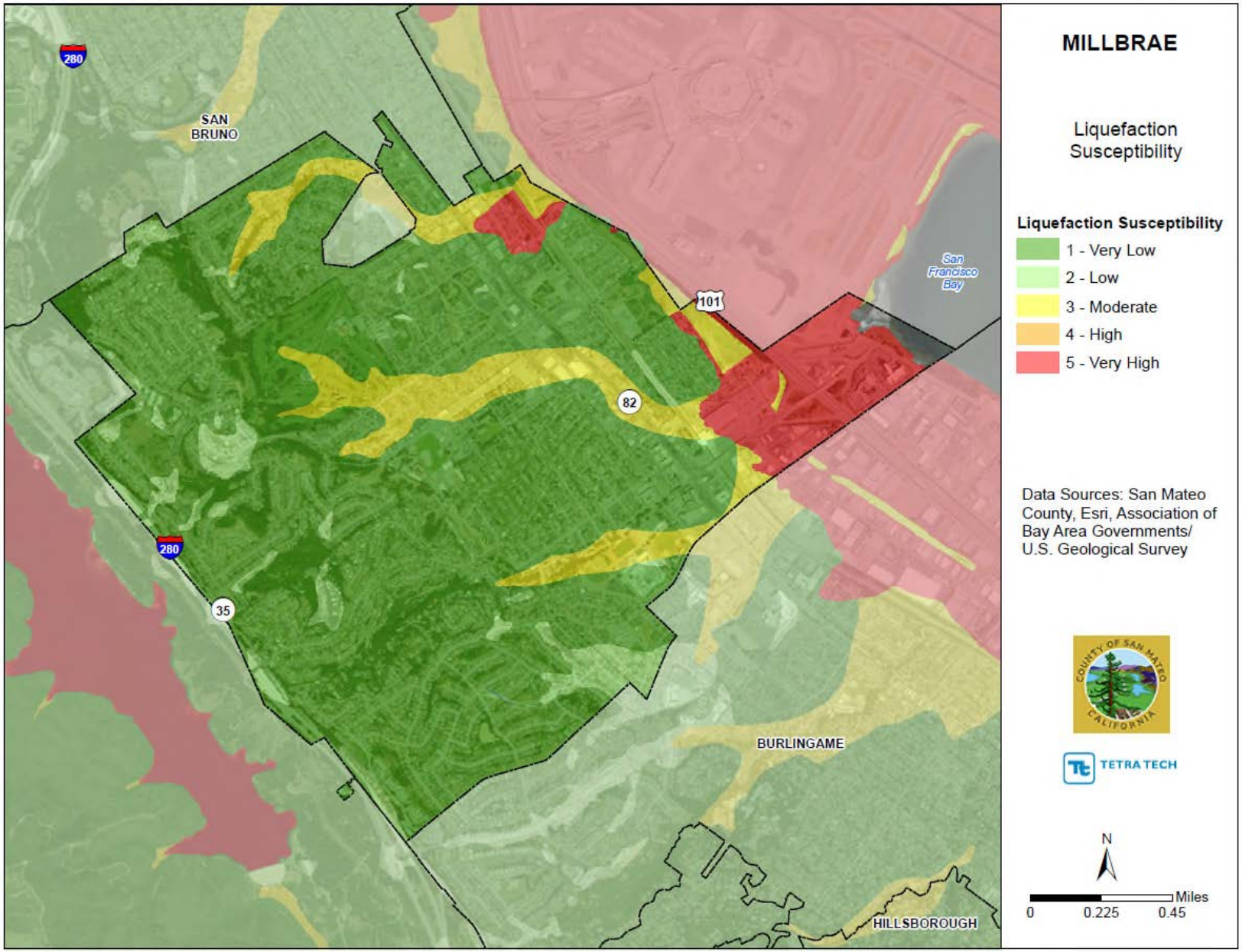
The budget for F/Y 2016-17, will include funding for an Emergency Preparedness Coordinator position. The coordinator will be responsible for reviewing relevant plans/documents to determine compliance with CalEOS/FEMA requirements and to provide training for City staff.

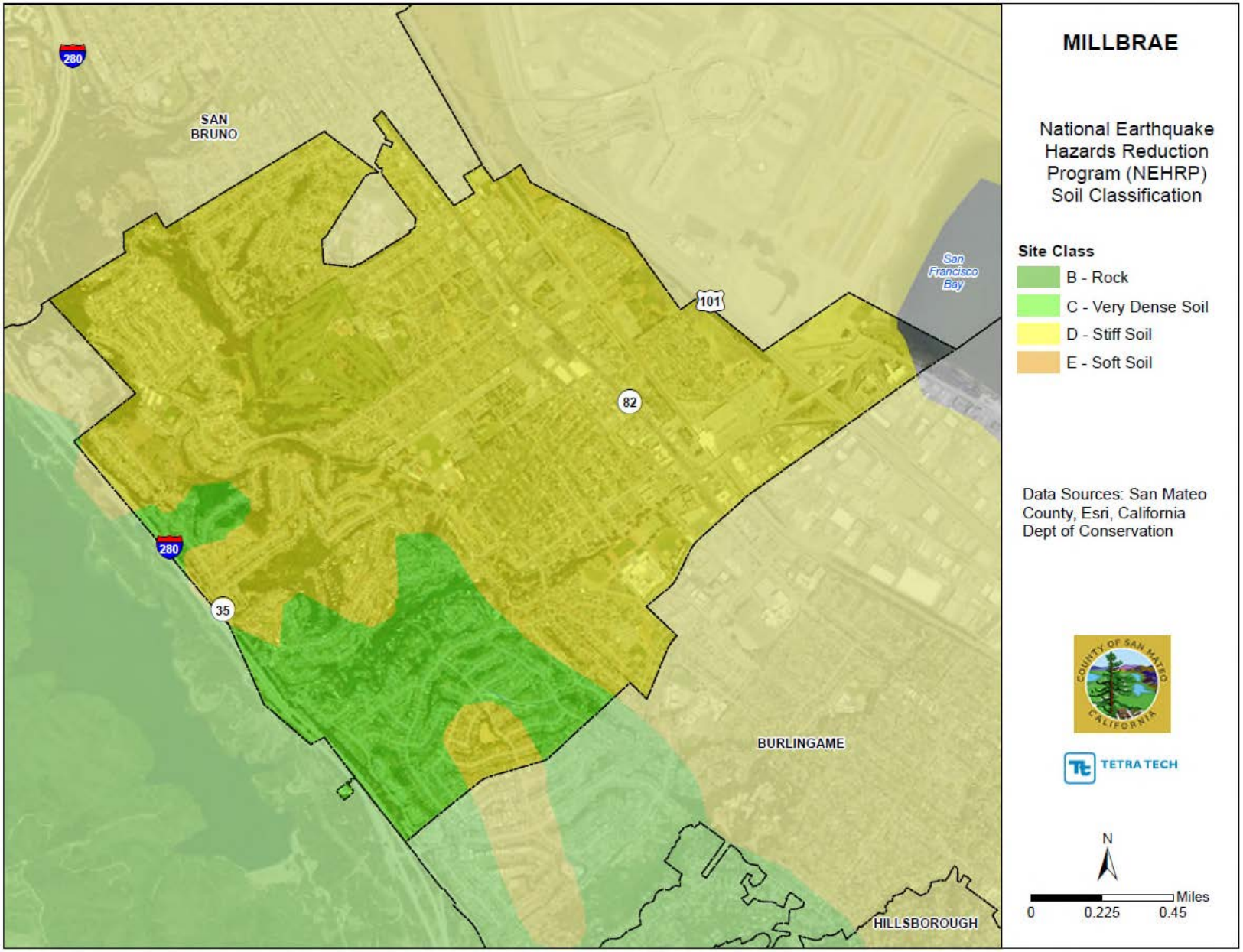
Below is a list of current City Municipal Operations Programs and Projects. Millbrae also has an extensive list of Communitywide Programs and Projects.

Municipal Operations Programs and Projects:

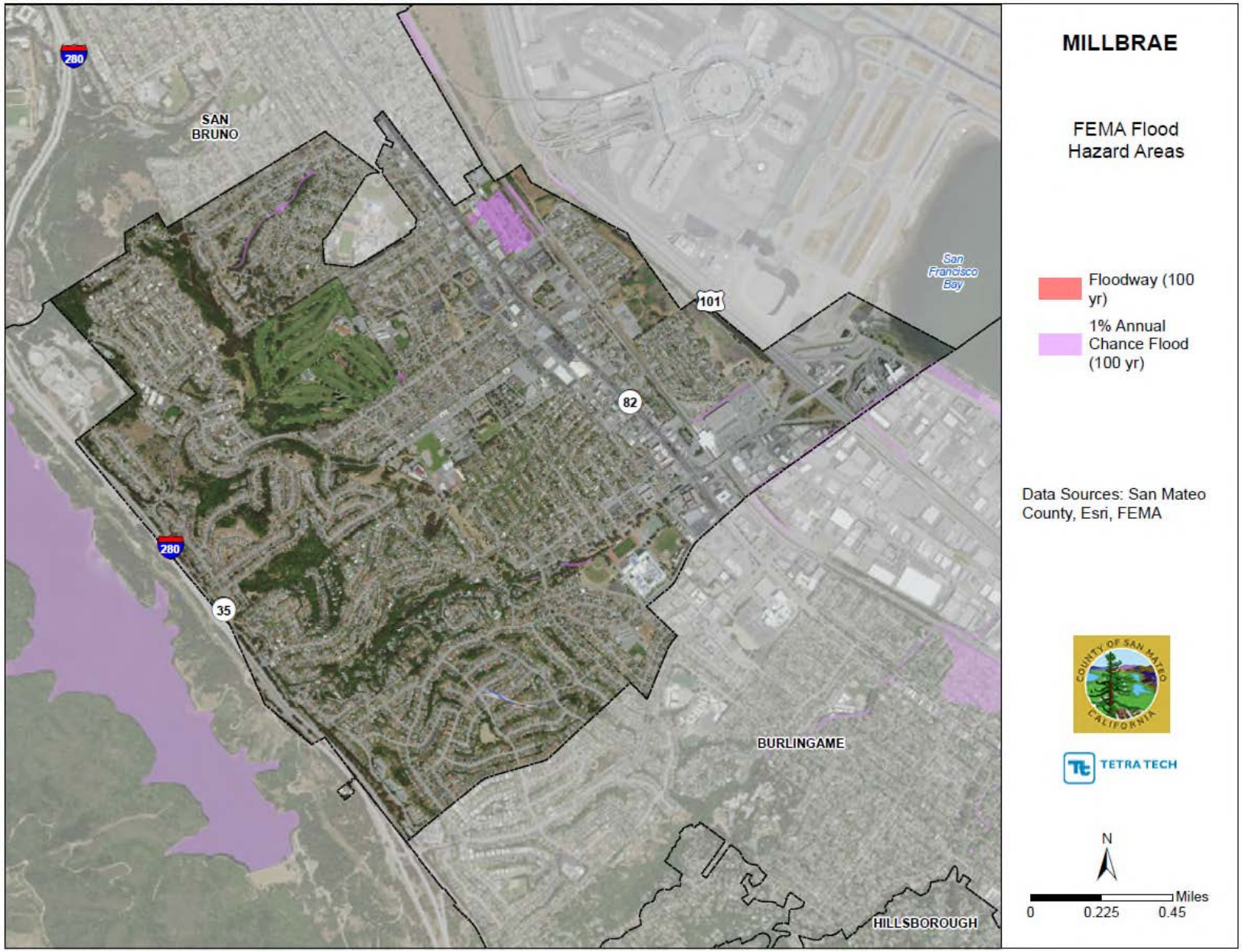
- Installed the co-generation system and grease receiving station at the City's Water Pollution Control Plant in 2006, which increased the bio-gas and related energy production.
- Implemented the Clean Energy Project in 2012, which included a number of measures that reduce GHG emissions in the City's government operations.
- Certified City Hall and the Library as Green Businesses and promote the program to businesses.

- Currently participating in Demand response Program/Energy Alert Days to reduce energy during peak demand by turning off lights, equipment and appliances. Participating City facilities included City Hall, Police Department and the Library.
- Off-set municipal greenhouse gas emissions through PG&Es Climate Smart Program from 2008-2012, reducing a cumulative total of 1.36 MMTCO2e.
- Participate in winter and summer Spare the Air Day alerts to inform employees and the community on measures for reducing air pollutants.
- Implement the Commuter Options and Incentives Program to promote alternative transportation modes to reduce single occupancy driving.
- Installed LED lights in traffic lights in 2010.
- Upgrade interior and exterior lighting to energy-saving technology.
- Upgrade five City parks with smart irrigation controllers to save energy and water.
- Certify City Hall and Library as Green Businesses and promote the program to other businesses.


MILLBRAE
Liquefaction Susceptibility
Liquefaction Susceptibility
1 - Very Low
2 - Low
3 - Moderate
4 - High
5 - Very High
Data Sources: San Mateo County, Esri, Association of Bay Area Governments/ U.S. Geological Survey
TETRA TECH
N
Miles
0
0.225
0.45
SAN BRUNO
BURLINGAME
HILLSBOROUGH
San Francisco Bay
280
101
82
35


MILLBRAE
National Earthquake Hazards Reduction Program (NEHRP) Soil Classification
Site Class
B - Rock
C - Very Dense Soil
D - Stiff Soil
E - Soft Soil
Data Sources: San Mateo County, Esri, California Dept of Conservation
TETRA TECH
N
Miles
0
0.225
0.45
SAN BRUNO
BURLINGAME
HILLSBOROUGH
San Francisco Bay
280
101
82
35


MILLBRAE
Landslide Hazard
Rainfall induced landslides
Mostly landslide
Data Sources: San Mateo County, Esri, Association of Bay Area Governments/ U.S. Geological Survey
TETRA TECH
N
Miles
0
0.225
0.45
SAN BRUNO
BURLINGAME
HILLSBOROUGH
San Francisco Bay
280
101
82
35


MILLBRAE
FEMA Flood Hazard Areas
Floodway (100 yr)
1% Annual Chance Flood (100 yr)
Data Sources: San Mateo County, Esri, FEMA
TETRA TECH
N
Miles
0
0.225
0.45
SAN BRUNO
BURLINGAME
HILLSBOROUGH
San Francisco Bay
280
101
82
35

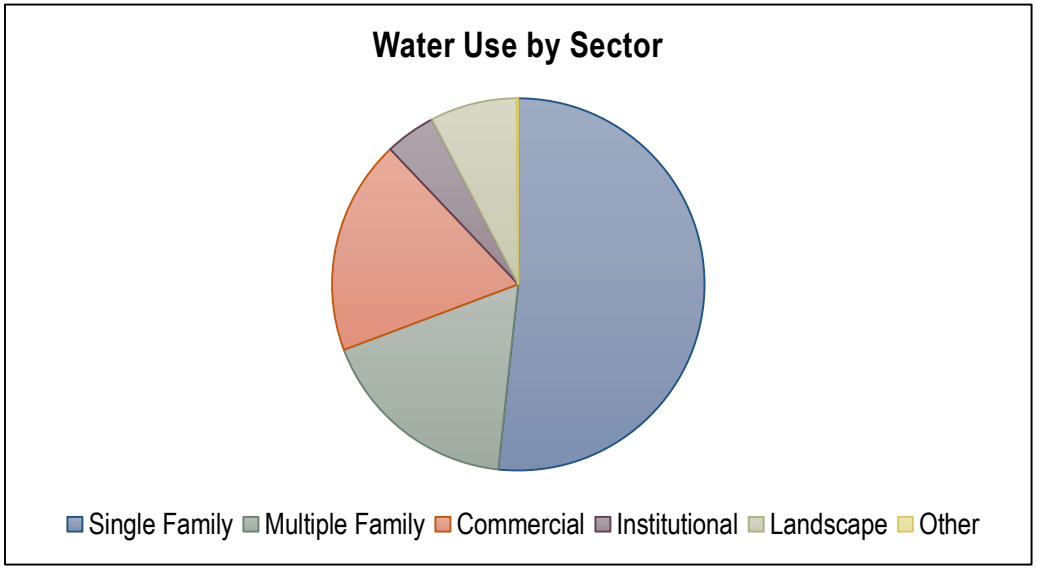
Appendix E – Water Shortage Contingency Plan Savings Analysis

Water Shortage Contingency Plan Savings Tool

Version 4.0 (September 18, 2020)

Conservation Measures by Sector and Shortage Stage								
Number	Description	Stage(s)						Savings
		Level 1 (up to 10%)	Level 2 (up to 20%)	Level 3 (up to 30%)	Level 4 (up to 40%)	Level 5 (up to 50%)	Level 6 (over 50%)	
1	Public Information and Advertising Campaign	Yes	No	No	No	No	No	2.4%
2	Water Waste Enforcement	Yes	Yes	Yes	Yes	Yes	Yes	1.4%
3	Non-Essential Uses Banned	Yes	Yes	Yes	Yes	Yes	Yes	0.8%
4	Promote Efficient Irrigation	Yes	Yes	No	No	No	No	0.4%
5	Step Up Public Information Campaign	No	Yes	No	No	No	No	4.3%
6	Leak Management	No	Yes	Yes	Yes	Yes	Yes	3.8%
7	Landscape Workshops	No	Yes	No	No	No	No	0.2%
8	Irrigation Time of Day Restrictions	No	Yes	Yes	No	No	No	0.7%
9	Large Landscape Water Budgets	No	Yes	No	No	No	No	0.7%
10	Water Use Prohibitions- Exterior Washing, Leak Repair Requirements, Re-Circulated water for water features, Vehicle Washing Restrictions	No	Yes	Yes	Yes	Yes	Yes	2.5%
11	Expand Public Information Campaign- Stage 3	No	No	Yes	Yes	Yes	Yes	6.5%
12	Customer Leak Repair within 72 Hours	No	No	Yes	No	No	No	1.4%
13	Reduce Large Landscape Water Budgets	No	No	Yes	No	No	No	4.6%
14	Commercial Conservation Plans and Signage	No	No	Yes	Yes	Yes	Yes	3.0%
15	No Operation of Ornamental	No	No	Yes	Yes	Yes	Yes	0.3%

16	Expand water waste	No	No	No	Yes	Yes	Yes	0.7%
17	Residential Water Rationing	No	No	No	Yes	No	No	7.2%
18	Commercial Water Rationing	No	No	No	Yes	No	No	1.6%
19	Minimal Large Landscape Water Budgets	No	No	No	Yes	No	No	5.3%
20	Prohibit Turf Installation in New Development	No	No	No	Yes	Yes	Yes	0.4%
21	Prohibition on on-site vehicle washing	No	No	No	Yes	Yes	Yes	0.2%
22	Rescind Hydrant Permits	No	No	No	Yes	Yes	Yes	0.1%
23	Customer Leak Repair within 48 Hours	No	No	No	Yes	No	No	1.6%
24	Reduce Residential Water	No	No	No	No	Yes	No	10.6%
25	Reduce Commercial Water	No	No	No	No	Yes	No	3.3%
26	Prohibit Outdoor Irrigation	No	No	No	No	Yes	Yes	16.3%
27	No Water for Recreational	No	No	No	No	Yes	Yes	0.0%
28	Customer Leak Repair within 24 Hours	No	No	No	No	Yes	Yes	0.0%
29	Reduce Residential Water Allocations to Health and Safety Minimum	No	No	No	No	No	Yes	13.6%
30	No Water for Non-Essential Commercial Uses	No	No	No	No	No	Yes	4.9%
31	Measure 31	No	No	No	No	No	No	0.0%
32	Measure 32	No	No	No	No	No	No	0.0%
33	Measure 33	No	No	No	No	No	No	0.0%
34	Measure 34	No	No	No	No	No	No	0.0%
35	Measure 35	No	No	No	No	No	No	0.0%
36	Measure 36	No	No	No	No	No	No	0.0%
37								
38								
39								
40								
41								
42								
43								


Water Use by Sector
Single Family
Multiple Family
Commercial
Institutional
Landscape
Other

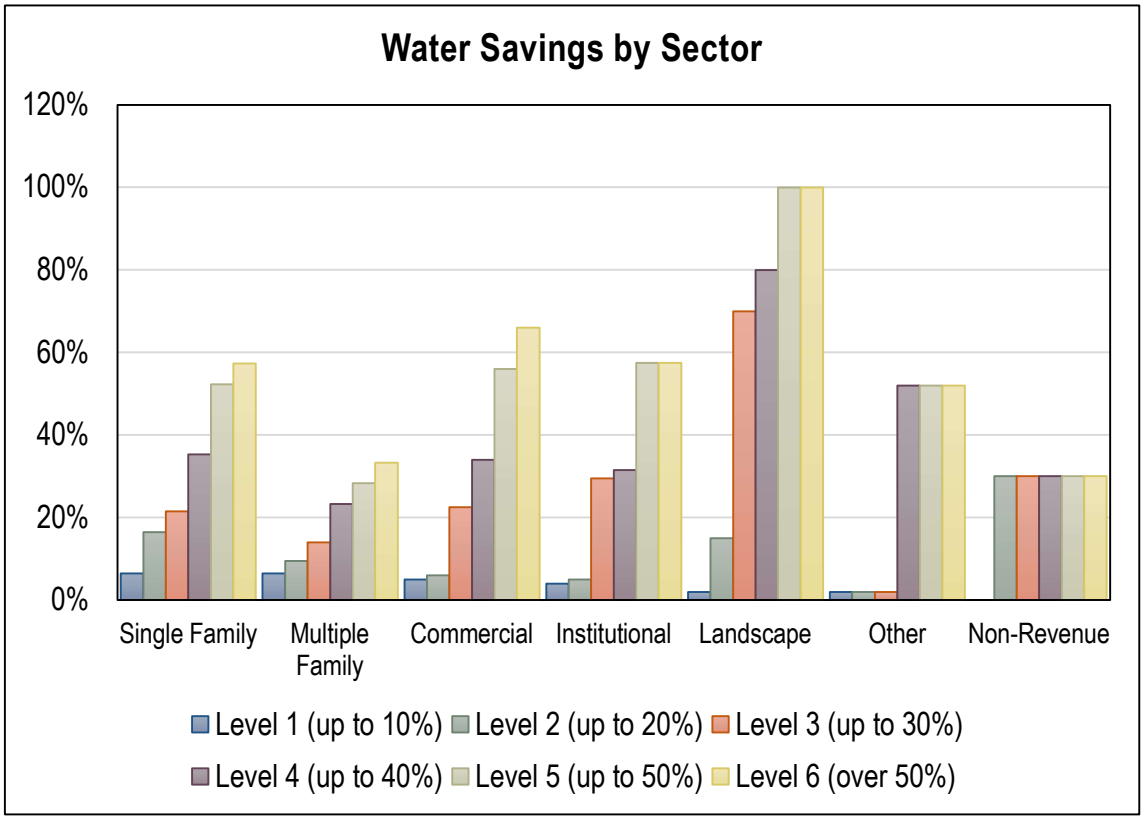
Customer Category Demand Projections - FY 2025 (Million Gallons Per Year)								
Stage	Single Family	Multiple Family	Commercial	Institutional	Landscape	Other	Non-Revenue	Total
Annual Water Use - Indoor	336	120	117	11	0	0	0	584
Annual Water Use - Outdoor	41	8	19	21	55	1	106	
Annual Water Use (MGY)	**377**	**128**	**136**	**32**	**55**	**1**	**106**	**835**
Percent of Total	**45%**	**15%**	**16%**	**4%**	**7%**	**0%**	**13%**	**100%**

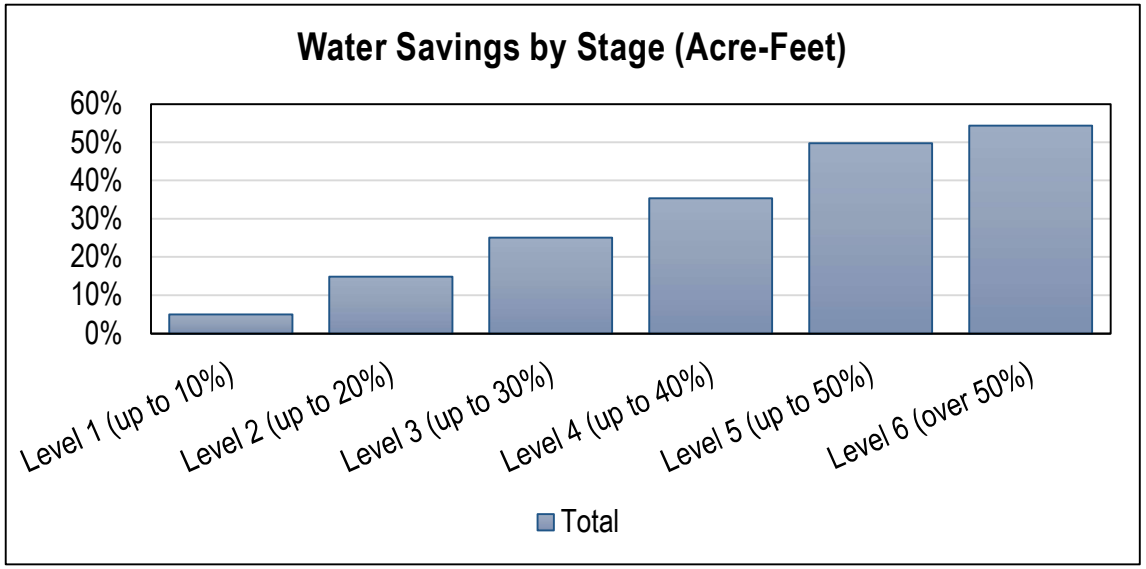
Total % Water Savings by Sector								
Stage	Single Family	Multiple Family	Commercial	Institutional	Landscape	Other	Non-Revenue	Total
Level 1 (up to 10%)	7%	7%	5%	4%	2%	2%	0%	**5%**
Level 2 (up to 20%)	17%	10%	6%	5%	15%	2%	30%	**15%**
Level 3 (up to 30%)	22%	14%	23%	30%	70%	2%	30%	**25%**
Level 4 (up to 40%)	35%	23%	34%	32%	80%	52%	30%	**35%**
Level 5 (up to 50%)	52%	28%	56%	58%	100%	52%	30%	**50%**
Level 6 (over 50%)	57%	33%	66%	58%	100%	52%	30%	**54%**

Total Water Savings by Sector (Million Gallons per Year)								
Stage	Single Family	Multiple Family	Commercial	Institutional	Landscape	Other	Non-Revenue	Total
Level 1 (up to 10%)	25	8	7	1	1	0	0	42
Level 2 (up to 20%)	62	12	8	2	8	0	32	124
Level 3 (up to 30%)	81	18	31	9	39	0	32	209
Level 4 (up to 40%)	133	30	46	10	44	1	32	296
Level 5 (up to 50%)	197	36	76	18	55	1	32	415
Level 6 (over 50%)	216	43	90	18	55	1	32	454

Service Area Population	22,846

Residential Per Capita Use	
Stage	R-GPCD
Pre-Shortage	61
Level 1 (up to 10%)	57
Level 2 (up to 20%)	52
Level 3 (up to 30%)	49
Level 4 (up to 40%)	41
Level 5 (up to 50%)	33
Level 6 (over 50%)	30




Water Savings by Stage (Acre-Feet)
60%
50%
40%
30%
20%
10%
0%
Level 1 (up to 10%)
Level 2 (up to 20%)
Level 3 (up to 30%)
Level 4 (up to 40%)
Level 5 (up to 50%)
Level 6 (over 50%)
Total

Appendix L- Water Waste Ordinance

Chapter 8.45
WATER CONSERVATION

Sections:

8.45.010 Findings and determinations.

8.45.020 Definitions.

8.45.030 Regulations, prohibitions and water use/conservation practices for all customers.

8.45.040 Landscaping.

8.45.050 Allocations used as water conservation goals.

8.45.060 Conservation planning and programs.

8.45.070 Enforcement.

8.45.080 Water shortage emergency.

8.45.010 Findings and determinations.

The city council of the city finds and determines that:

A. The city obtains all of its water from the San Francisco water department and is entirely dependent on the San Francisco water department supply source for its water and that supply is limited and subject to ever increasing demands.

B. The continuation of Millbrae's economic prosperity is dependent on an adequate supply of water being available for current and future use.

C. It is the policy of the city to promote the conservation and efficient use of water and to prevent the waste of this valuable resource.

D. Landscapes are essential to the quality of life by providing areas for active and passive recreation and as an enhancement to the environment by cleaning air and water, preventing erosion, offering fire protection, and replacing ecosystems lost to development.

E. Landscape design, installation and maintenance can and should be water efficient.

F. Water use and conservation goals are set out in and can be achieved by appropriate implementation of the city's urban water management, water shortage contingency plan and the memorandum of understanding regarding urban water conservation in California to which the city is a signatory.

G. Pursuant to the Water Conservation in Landscaping Act, Government Code Sections 65590, et seq., the "model" water efficient landscape ordinance adopted by the department of water resources is binding upon and enforceable in the city (hereafter referred to as the "model water efficient landscape ordinance").

H. The ordinance codified in this chapter is enacted to carry out certain statutory responsibilities of the city as a water purveyor to achieve the maximum beneficial use of available water resources and to prevent the waste, unreasonable use or unreasonable method of use of water.

I. The adoption of the ordinance codified in this chapter is categorically exempt from the California Environmental Quality Act pursuant to Section 15307 of Title 14 of the California Code of Regulations because this constitutes an action authorized by state law to ensure the maintenance, restoration, or enhancement of a natural resource where the regulatory process involves procedures for the protection of the environment. (Ord. 593, § 1; 1976 Code § 8-9.01).

8.45.020 Definitions.

For the purpose of this chapter, the following terms, phrases, words and their derivations shall have the meaning given herein and the definitions contained in the Model Water Efficient Landscape Ordinance are also incorporated herein. When not inconsistent with the context, words used in the present tense include the future, words in the plural number include the singular number and words in the singular number include the plural number. The word "shall" is always mandatory and not merely directory.

A. "Customer" means any person using water supplied by the Millbrae water division.

B. "Director" means the director of public works/city engineer of the city.

C. "Person" means any person, firm, partnership, corporation, company or organization of any kind.

D. "Unit of water" means one hundred cubic feet of water or seven hundred forty-eight gallons.

E. "Water" means water furnished and distributed to customers by the water division.

F. "Water division" means the Millbrae municipal water division. (Ord. 593, § 1; 1976 Code § 8-9.02).

8.45.030 Regulations, prohibitions and water use/conservation practices for all customers.

A. The regulations, prohibitions and restrictions on the use of water set forth below shall apply to all customers.

1. Each customer shall promptly repair broken or defective plumbing, sprinkler, watering or irrigation systems which permit the escape or leakage of water. Use of water through any meter is prohibited when the customer has been given ten days' notice to repair broken or defective plumbing, sprinklers, water or irrigation systems and has failed to effect such repairs.

2. Hoses used for any purposes shall have positive shut-off valves.

3. No use of water shall be allowed which results in flooding or runoff in gutters, driveways or streets.

4. Service connections for new construction will be granted only if water-saving devices or fixtures are incorporated into the plumbing system, such as low flow shower heads with shutoffs, and low flow water closets and all other conditions of this chapter and the municipal code are met.

5. Use of potable water for consolidation of backfill, dust control, soil compaction or other nonessential construction purposes should be limited to those situations where no other source of water can be used or is available. The use of groundwater and/or reclaimed water for such purposes is permitted when approved pursuant to applicable restrictions and regulations.

6. 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.

7. Covers shall be required for all new swimming pools and encouraged to be installed for existing pools.

8. Except for fire protection service lines, a pressure-reducing valve or valves that will limit the static water pressure to each floor of the structure to fifty pounds per square inch gauge shall be installed in all new or remodeled residential structures.

9. All new or remodeled residential, commercial or industrial structures shall have insulation of hot water pipes where such piping is located in attics, garages, crawl spaces or unheated spaces other than between floors or in interior walls to provide a maximum heat loss of 9.6 British thermal units per hour per linear foot for piping up to and including two inches in diameter, and

one hundred British thermal units per hour per linear foot for all sizes greater than two inches in diameter.

10. In all new or remodeled commercial or industrial structures, a pressure-reducing valve or valves to limit the static water pressure to eighty pounds per square inch gauge to the upper floor of the structure, shall be installed only if no supplemental internal pumping is anticipated. The intent of this section is to limit available water pressure to the structure consistent with uses of water on the premises.

11. Water used for all cooling purposes and for commercial car washes shall be recycled. Self-service car washes may be excepted from this recycling requirement by the director; provided the director finds that water pressure, application rate and time of operation limit the amount of water used to an acceptable quantity.

12. No single use of water shall be permitted where recirculation of water is economically and technically feasible. An economically feasible recirculation installation is defined as, over the useful life of the equipment to be installed, a system where the present worth of the cost of the water saved is more than the present worth of both the capital and annual operation and maintenance costs of the system. Such economic and technical feasibility shall be determined by the user and reviewed by the director. In the event there is a disagreement between the user and the director, a review and final determination shall be made by the city council.

13. All water service connections to the city water system shall be metered with city approved meters.

14. Homeowner-provided new irrigation systems and the expansion of existing irrigation systems for single-family and multiple-family residences shall be low water use systems.

15. All new landscaping in homeowner-provided single-family and multifamily residences shall be drought resistant and/or designed for low water use to conserve irrigation water.

B. All customers are encouraged to comply with the water use/conservation practices set forth below.

1. Irrigation of lawns or groundcover in any area, including residential, commercial, industrial or recreational/golf courses is recommended to be done only between the hours of six p.m. and ten a.m.

2. Sidewalks, walkways, plazas, houses, businesses, driveways, patios, parking lots, tennis courts, buildings, awnings, or other hard surfaced areas should not be cleaned using water from hoses or by use of water directly from faucets or other outlets.

3. Restaurants, meeting rooms, banquet facilities, hotels and dining facilities should serve water to customers only upon the individual request of the person consuming the water.

4. Water used to fill or maintain decorative fountains or pools should be recycled. (Ord. 593, § 1; 1976 Code § 8-9.03).

8.45.040 Landscaping.

New or rehabilitated landscaping shall be installed pursuant to all applicable provisions of the Model Water Efficient Landscape Ordinance, in Division 2, Title 23, California Code of Regulations Chapter 2.7, as it may be amended, and this chapter. Consistent with the model ordinance, landscaping of any open space, park, playground, golf course, or other open area shall be planned to conserve water through choice of plants, landscape design and irrigation techniques. The development and use of the following water saving techniques shall be encouraged subject to relevant legal and economic constraints:

A. Use of native or drought-resistant plants;

B. Use of water application systems that are controlled to supply water efficiently to meet the needs of the given plants in each situation, as for example: drip irrigation systems and low delivery sprinkler nozzles;

C. Use of grey water and sewage effluent for irrigation when water quality, environmental, public health and economic conditions permit such use;

D. Collection and reuse of runoff water where possible; and

E. Scheduling of irrigations according to plant requirements. (Ord. 593, § 1; 1976 Code § 8-9.04).

8.45.050 Allocations used as water conservation goals.

A. This chapter establishes a voluntary conservation program based on 1987 water usage and the allocation methodology that was in effect during the city’s rationing program from the spring of 1991 through March of 1993. The director shall maintain and update the allocation system and provide allocation information to all customers. The city may establish a system of incentives to recognize or reward customers who maintain water use within the allocation goals. The maintenance and use of this allocation methodology and information shall in no way establish a precedent for or constitute an a

priori basis for future allocations in the event that mandatory rationing or more stringent conservation measures are reinstituted.

B. The methodology for establishing allocation water conservation goals is described below for each category of accounts.

1. Allocation Goals for Residential Accounts.

a. Summer Allocation Goals. During the “summer” months of April through November, bimonthly accounts will be allocated sixty-five percent of the amount of water used during the corresponding months or billing periods in 1987.

b. Winter Allocation Goals. During the “winter” months of December, January, February and March, bimonthly accounts will be allocated eighty-five percent of the amount of water used during the corresponding months or billing period in 1987.

c. Minimum Allocation Goals. The minimum amount of water for single-family residences and duplexes is set at six units (four thousand four hundred eighty eight gallons) per month. The minimum amount of water for multiple-family dwellings such as apartments, condominiums, triplexes and others is set at five units (three thousand seven hundred forty gallons) per month. No allocation will be established at less than these amounts.

d. Maximum Allocation Goals. Initially, no single-family or duplex unit allocation will be greater than thirty-two units per bimonthly billing period for “summer” months or twenty-two (22) units per bimonthly billing period for “winter” months.

2. Allocation Goals for Commercial/Industrial Accounts.

a. Commercial, industrial and other nonresidential bimonthly accounts will be allocated eighty-five percent of the amount of water used during the corresponding months or billing periods in 1987 with the following exceptions:

b. Allocations for connections that serve both inside and outside/irrigation uses shall be adjusted to allocate only forty percent of the estimated amount of water used for outside/irrigation uses in 1987 during the “summer” months of April through November. Outside/irrigation use is defined as the difference between the monthly consumption for the months of April through November and the average monthly consumption for the four months of January, February, March and December, all for 1987.

3. Allocation Goals for Irrigation Service Accounts. Accounts classified for irrigation will be forty percent of the actual consumption for the same period in 1987. Where 1987 actual consumption data are not available, the director shall establish an appropriate allocation using relevant parameters and reflecting the equivalent of a sixty percent reduction from normal irrigation.

4. Allocation Goals for New Accounts. Initial allocations for new single-family residences and duplex accounts will be established at twelve units per billing cycle. Initial allocations for new multiple-family accounts such as apartments, condominiums, triplexes and others will be established at ten units per billing cycle. Final allocations for single-family residence accounts will be calculated on the number of documented residents within a household. Allocations for the first two residents for single-family residence accounts will be established at seventy-five gallons per day each and fifty-five gallons per day for each subsequent resident. Final allocations for multiple-family residences will be established at fifty-five gallons per day for each documented resident. In the case of commercial or industrial customers, business data supplied to the director will be the basis for establishing the allocation.

5. Allocation Goals Where No Past History Exists. When water records for calendar year 1987 are not available, do not exist for all or various portions of the year, or do not allow or provide the basis for establishment of equitable allocations, earlier records, records of customers with similar water uses or other parameters determined by the director may be used to set or adjust individual allocations. (Ord. 593, § 1; 1976 Code § 8-9.05).

8.45.060 Conservation planning and programs.

The city's urban water management plan and the memorandum of understanding regarding urban water conservation in California set forth the requirements and goals for conservation plans and programs. These documents shall guide the city and the director in the planning and execution of conservation programs. It is the policy of the city to provide conservation incentives and support services to customers, including conservation services, materials and supplies, and rebates, where appropriate, to the extent of available resources and in accordance with procedures established by the director. (Ord. 593, § 1; 1976 Code § 8-9.06).

8.45.070 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 Millbrae 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 set forth in Chapter 1.05 MMC.

C. Persons designated to issue citations hereunder and to enforce the rules and regulations of this chapter pursuant to the authority provided in Penal Code Section 836.5 are the director of public works, public works superintendent, public works supervisors, public works foreman, and the water resources and conservation staff. The issuance of citations will normally follow the continued failure or impracticality of other warning enforcement measures. (Ord. 593, § 1, Amended by Ord. 680, § 2; 1976 Code § 8-9.07).

8.45.080 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 adopted January 28, 1992 amending the urban water management plan shall provide the basis for such additional practices. (Ord. 593, § 1; 1976 Code § 8-9.08).

The Millbrae Municipal Code is current through Ordinance 786, passed March 9, 2021.

Disclaimer: The City Clerk's office has the official version of the Millbrae Municipal Code. Users should contact the City Clerk's office for ordinances passed subsequent to the ordinance cited above.

City Website: https://www.ci.millbrae.ca.us/
City Telephone: (650) 259-2333

Code Publishing Company

Appendix M- Resolution to Enact Water Shortage Contingency Plan

RESOLUTION 21-33

CITY OF MILLBRAE, COUNTY OF SAN MATEO
STATE OF CALIFORNIA

***

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF MILLBRAE ADOPTING THE 2020 WATER SHORTAGE CONTINGENCY PLAN

WHEREAS, the 2020 Water Shortage Contingency Plan (WSCP) is a required element of the Urban Water Management Plan (UWMP) and is included in Appendix K of the UWMP draft document. The WSCP 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 sets out water use planning and allocation priorities with goals to: 1) address the varying magnitudes of water shortages for the greatest public benefit; 2) mitigate the effects of a water supply shortage on public health and safety, economic activity, and customer lifestyle; and 3) assist with budgeting water use to ensure supply for essential purposes during water shortages; and

WHEREAS, the WSCP is based on the premise that, when water is in short supply, certain end uses should have a higher priority than others. Using a priority-based approach, the normal water demands of each major customer category are first classified into three basic priorities; and

WHEREAS, the WSCP uses a staged approach that classifies a shortage event into one of six levels spanning a range from less than 5 percent to over 50 percent. This 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 for cutback during a declared water shortage; and

WHEREAS, a component of the 2010 UWMP adopted by the City in 2011 was the inclusion of the California Water Conservation Act of 2009, Senate Bill 7 of Special Extended Session 7 (SBX7-7). The Bill was enacted to increase water efficiency use by 2020. The City has achieved and surpassed this target of 117 GCPD, with a gross per capita water use in FY 2020 fiscal year of 82 GPCD.

NOW, THEREFORE BE IT RESOLVED THAT THE CITY COUNCIL OF THE CITY OF MILLBRAE, AS FOLLOWS:

1. The City of Millbrae does hereby approve and adopt the 2020 Water Shortage Contingency Plan. A copy of which is on file in the office of the City Clerk and at the Public Library, and which is accessible on the City's website.
2. The City Clerk is hereby authorized and directed to file the City of Millbrae Water Shortage Contingency Plan with the California Department of Water Resources by July 1, 2021, and the California State Library and the County of San Mateo within thirty (30) days of the adoption of this resolution.
3. The Public Works Director is hereby authorized and directed to implement the 2020 Water Shortage Contingency Plan adopted hereby, including the Water Conservation Programs set forth within.

REGULARLY PASSED AND ADOPTED this 25th day of May, 2021.

Ann Schneider
Mayor

ATTEST:

6/1/2021
City Clerk

Resolution No. 21-33

I do hereby certify that the foregoing Resolution was duly and regularly passed and adopted by the City Council of the City of Millbrae this 25th day of May 2021, by the following vote:

AYES:	COUNCILMEMBERS:	Schneider, Oliva, Papan, Fung and Holober
NOES:	COUNCILMEMBERS:	None
ABSENT:	COUNCILMEMBERS:	None
ABSTAIN:	COUNCILMEMBERS:	None
EXCUSED:	COUNCILMEMBERS:	None

6/1/2021

CITY CLERK