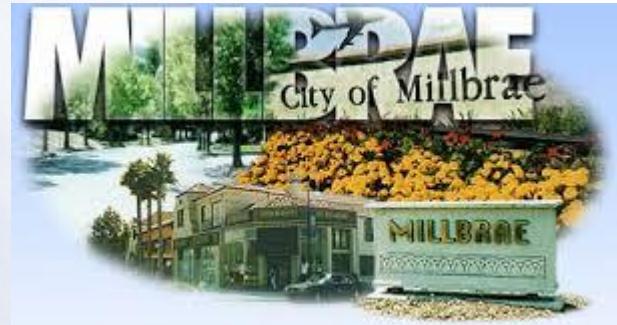


APPENDIX I: UTILITIES DATA







City of Millbrae

Water Supply Assessment

June 2015

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Key Acronyms and Abbreviations

ABAG	Association of Bay Area Governments	IWSAP	Interim Water Shortage Allocation Plan
ACDD	Alameda Creek Diversion Dam	MFR	Multi-Family Residential
AFY	Acre-feet per year	MID	Modesto Irrigation District
BART	Bay Area Regional Transportation	MGD	Million gallons per day
BAWSCA	Bay Area Water Supply and Conservation Agency	MSASP	Millbrae Station Area Specific Plan Update
BAWSCA Strategy	Long-Term Reliable Water Supply Strategy	MOU	Memorandum of Understanding
BMP	Best Management Practice	NOP	Notice of Preparation
CEQA	California Environmental Quality Act	PEIR	Programmatic Environmental Impact Report
CCF	100 Cubic Feet	RWS	Regional Water System
CII	Commercial, Industrial and Institutional	SB 610	Senate Bill 610
City	City of Millbrae	SBx7-7	Water Conservation Act of 2009
Commission	SFPUC's five member governing commission	SFO	San Francisco International Airport
CUWCC	California Urban Water Conservation Council	SFPUC	San Francisco Public Utilities Commission
DMM	Demand Management Measure	SFR	Single Family Residential
DPH	California Department of Public Health	TID	Turlock Irrigation District
DSS Model	Demand Side Management Least Cost Planning Decision Support System	TOD	Transit-Oriented Development
EIR	Environmental Impact Report	UACFG	Upper Alameda Creek Filter Gallery
ETo	Evapo-transpiration of common turf grass	UWMP	Urban Water Management Plan
ETWU	Estimated Total Water Use	WCIP	Water Conservation Implementation Plan
gpcd	gallons per capita per day	WPCP	Water Pollution Control Plant
GPM	Gallons per minute	WSA	Water Supply Assessment
ISA	Interim Supply Allocation	WSAP	Water Shortage Allocation Plan
ISG	Individual Supply Guarantee	WSCP	Water Shortage Contingency Plan
ISL	Interim Supply Limitation	WSIP	Water System Improvement Program

1. Introduction

The City of Millbrae (City) is located in the greater San Francisco bay area, approximately 15 miles south of downtown San Francisco. The location of the city provides a unique setting for transportation, with San Francisco International Airport (SFO) and Highway 101 located adjacent to the city limits and a major Bay Area Regional Transportation (BART) station in the center of the city. As such, the City has proposed the re-development of the area around the current BART station to serve as a mixed use office, retail, and housing development. In preparation for the proposed development, an environmental review is being performed under CEQA in the form of the Millbrae Station Area Specific Plan Update (MSASP). In parallel, this report has been prepared which addresses the issue of water supply adequacy as a result of the proposed project.

This Water Supply Assessment (WSA) addresses the issue of water supply adequacy for the City of Millbrae using the methodology outlined in California Water Code Section 10910 et. seq. (SB 610, CEQA Section 21151.9 and CEQA Guidelines Section 15155). The objective of this assessment is to determine the potential of the water supply to serve the demands generated by their current and future populations, including those demands generated by the proposed project. In this analysis, water supply and demand comparisons are examined for normal, single dry-, and multiple dry-year water supply conditions over a twenty-year planning period.

1.1 Requirements of a Water Supply Assessment

The requirement to prepare a WSA was established in 2002 by State Senate Bill (SB) 610, which emphasizes the interrelationships between land use and water supply planning, and requires the incorporation of water supply and demand analysis at the earliest possible stage in the land use planning process. The stated intent of SB 610 is to strengthen the process by which local agencies determine the adequacy and sufficiency of current and future water supplies to meet current and future demands.

SB 610 amended the California Public Resources Code to incorporate Water Code findings within the CEQA process for certain types of projects. SB 610 added Water Code Sections 10910, 10911, 10912, 10913, and 10915 (Water Supply Planning to Support Existing and Planned Future Uses), which describe when a WSA needs to be prepared and the required elements of that WSA. The WSA is then used as an informational document to support the CEQA process. SB 610 also amended Water Code Section 10631 (the Urban Water Management Planning Act) to create a clear relationship between an agency's Urban Water Management Plan (UWMP) and subsequent WSAs and to allow the UWMP to serve as a foundational document for the analysis in the WSA. This WSA uses the UWMP adopted by the City of Millbrae in 2010 as the foundational document for all subsequent analysis.

Water Code Section 10910 et. seq. defines the "projects" that require a WSA and the lead agency's responsibilities related to the WSA. A WSA is required for:

- A proposed residential development of more than 500 dwelling units;
- A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space;

- A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space;
- A proposed hotel or motel, or both, having more than 500 rooms;
- A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area;
- A mixed-use development that includes one or more of the uses described above;
- A development that would demand an amount of water equivalent to or greater than the amount of water required by a 500-dwelling-unit project; and
- For lead agencies with fewer than 5,000 water service connections, any new development that will increase the number of water service connections in the service area by 10 percent or more.

A WSA must provide:

- A description of all relevant water supply entitlements, water rights, and/or water contracts;
- A description of the available water supplies, in normal, dry and multiple dry years, and the infrastructure, either existing or proposed, to deliver the water; and
- An analysis of the demand placed on those supplies, by the project, and relevant existing and planned future uses in the area for at least a 20-year period.

The lead agency may incorporate the water suppliers' UWMP by reference, if the supplier included the proposed development's demands in the UWMP.

While water supply is clearly an important consideration in approval of a development, nothing in SB 610 prevents a lead agency from approving a proposed project even in the face of information concluding that there is not sufficient water supply for buildup of the project. However, where the description of existing water supply entitlements, water rights, and/or water contracts shows insufficient water supplies to serve the proposed project, as well as existing and planned uses over the 20-year planning horizon, additional information is required to describe how and where sufficient supplies may be obtained.

1.2 Scope of Analysis

This WSA describes the relationship between the water demands associated with the Project and the availability of water supply under different climatic conditions. This WSA has been prepared to assist the City in evaluating the impacts of the Project on the water supply.

Specifically, this WSA:

- Provides information on the City's water supply that is consistent with Water Code Sections 10620 et. seq. (the Urban Water Management Act) and 10910 et. seq. (Water Supply Planning to Support Existing and Planned Future Uses);
- Provides information on current water demands of the proposed projects and projected water demands based on the applicant's proposed redevelopment plan;
- Compares the Project demands to demand projections outlined in the 2010 UWMP; and

- Compares water supplies and water demands for the normal, single dry, and multiple dry years.

1.3 The 2010 Urban Water Management Plan

The City of Millbrae adopted its 2010 UWMP in June 2011. The UWMP conforms to the requirements of the Urban Water Management Planning Act and documents water supplies available during normal, single dry, and multiple dry water years during the period from 2010 through 2035, in 5-year increments. The UWMP includes:

- A description of the water service area including climate, current and projected population and other demographic factors that affect water management planning;
- A description and quantification of the existing and planned water sources;
- A description of the reliability and vulnerability of the water supply to seasonal or climatic shortages in the average water year, single dry water year and multiple dry water year;
- Contingency plans including demand management and conjunctive use potential;
- A description of current and projected water demands among all user classes in 5-year increments;
- A description of all water supply projects and water supply programs that may be undertaken by the City, its wholesale supplier the San Francisco Public Utilities Commission (SFPUC) and its regional representative the Bay Area Water Supply and Conservation Agency (BAWSCA); and
- A description of the City's demand management program.

In addition, in order to comply with the requirements of the Water Conservation Act of 2009 (SBx7-7), the 2010 UWMP includes a “baseline” water use, which was calculated over the period between 1996 and 2005, and water use targets for 2015 and 2020. These targets, which are expressed as water use in gallons per capita per day (gpcd) will be used to validate that the City is complying with the SBx7-7 requirements to reduce water use by 20 percent from the baseline by 2020. The targets, which are discussed in detail in Section 5, effectively serve to cap future demands.

The 2010 UWMP concluded that the City has an adequate supply to meet its projected demands in normal and single dry years. There is the potential for modest near-term shortages in the second and third year of multiple dry years. The 2010 UWMP documents that the City has an established Water Shortage Contingency Plan, including legal authority to implement that plan, which provides methods to reduce water demands by as much as 50 percent in five stages.

1.4 Structure of this Report

This report is structured to facilitate the presentation of information required by the Water Code and to outline the analysis necessary to evaluate the sufficiency of water supply to meet planned growth.

- Section 1 provides an overview of the legal requirements for the WSA and describes the Project that is covered by this WSA.
- Section 2 describes the proposed project prompting this WSA.

- Section 3 describes the City's water service area.
- Section 4 describes the current wholesale water supply from SFPUC and other supply planning activities that are being undertaken by the City and its regional representative BAWSCA. The section includes discussions of the contractual supply arrangements and the reliability of the water supply in normal, single dry, and multiple dry years.
- Section 5 describes current and future water demands based on planned growth, including the Project, and accounting for the 2015 and 2020 water use targets which were adopted with the 2010 UWMP.
- Section 6 provides an overview of the water supplies available for the City during normal, single dry, and multiple dry water years as outlined in the 2010 UWMP.
- Section 7 provides an overview of the overall supply sufficiency by comparing projected water demands to available supplies. In order to support the CEQA document for the Project, this section includes a discussion of the projects and permits necessary to make the water supply available.

SB 610 outlines several provisions that need to be addressed in the WSA. Table 1 below lists the specific requirements in SB 610, and where they are discussed specifically in this report.

Table 1. Index of SB 610 Requirements.

Required Element	Location in Document
Description of Service Area	Section 3
Population Projections in 5-year Increments	Table 3.1
Description and Quantification of Water Supplies	Section 4.1
Description of Supply Reliability to Climate Conditions	Section 3.2 and 4.1.8
Description of Contingency Plans	Section 4
Description of Demand Management Potential	Section 4
Projection of Water Demands in 5-year Increments	Table 9
Description of Projects & Programs Undertaken to Meet Demands	Section 4
Description of Demand Management Measures Employed	Section 7
Determination of Supply Sufficiency under Normal, Single & Multiple Dry Years	Section 7
Identification of Water Supply Entitlements & Rights and water received under rights	Section 4
Information related to capital outlay programs for financing delivery of water supply	Section 7.2
Information on permits needed and regulatory requirements associated with water supply	Section 7.2 and 7.3

* Contingency Planning Discussion incorporates the 2010 Urban Water Management Plan by City of Millbrae as allowed by SB 610

2. Project Description

The following sections outline the relevant information for the proposed project including the location, existing conditions, and plans for future development.

2.1 Project Location

The proposed site for redevelopment is located in downtown Millbrae surrounding the existing BART station. The sites are centered near the intersection of El Camino Real and Millbrae Avenue, which is located approximately 1.25 miles southwest of SFO. The southern border of the project site is bound by the Burlingame city limits. The Project location is illustrated in Figure 1.

2.2 Existing Condition

The existing development site represents approximately 116 acres of land split into 13 major parcels, which can be seen in Figure 2. Each parcel is currently a mixture of either industrial, retail, office, and residential usage. Additionally, there are several parcels that are currently large parking areas surrounding the BART station. At present the project site is composed of approximately 76,100 square feet (SF) of office space, 335,240 SF of industrial space, 132,575 SF of retail space, 308 residential units, and 39 hotel rooms.

2.3 Proposed Development

The proposed project includes the demolition and redevelopment of approximately 440,940 SF of office, retail, and industrial space, one residential unit, and all 39 hotel rooms. In their place, a buildout scenario has been proposed that would result in a net increase of approximately 1,577,235 SF of office space, 142,535 SF of retail space, 1,440 new residential units and 325 new hotel rooms. Some of the buildings within the project site are new and therefore not marked for redevelopment, and include approximately 8,500 SF of office space, 94,475 SF of retail space, and 307 residences. The development of the parcels has been divided into two Transit-Oriented Development (TOD) projects and the remaining buildout potential, referred to as Other Allocations. A listing of which parcels correspond to each development project is shown in Table 2 below.

1. TOD #1 is located on the Serra property. The proposed development is comprised of 267,000 SF of office space, 32,000 SF of retail space, and 500 residential units. The project also assumes the removal of 32,000 SF of industrial space, which will be redeveloped.
2. TOD #2 is located on the BART parking lots. The proposed development is comprised of approximately 164,535 SF of office space, 46,935 SF of retail space, 321 residential units, and 116 hotel rooms.
3. Other Allocations includes all of the remaining buildout potential not included in TOD 1 and 2. This includes a net increase in approximately 1,145,700 SF of office space, 63,600 SF of retail space, 616 residential units, and 209 hotel rooms. The project also includes the removal of approximately 303,240 SF of industrial space, which will be redeveloped.

Table 2. Parcels included for each development project.

Project	Parcels Included (Figure 2)
TOD #1	1a
TOD #2	5a-b, 6a-b
Other Allocations	4a-b, 7, 8, 10, 11a, 12, 13a-b



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Miles

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet



City of Millbrae
Water Supply Assessment

Job Number 840900832.94
Revision 1
Date 25 Feb 2015

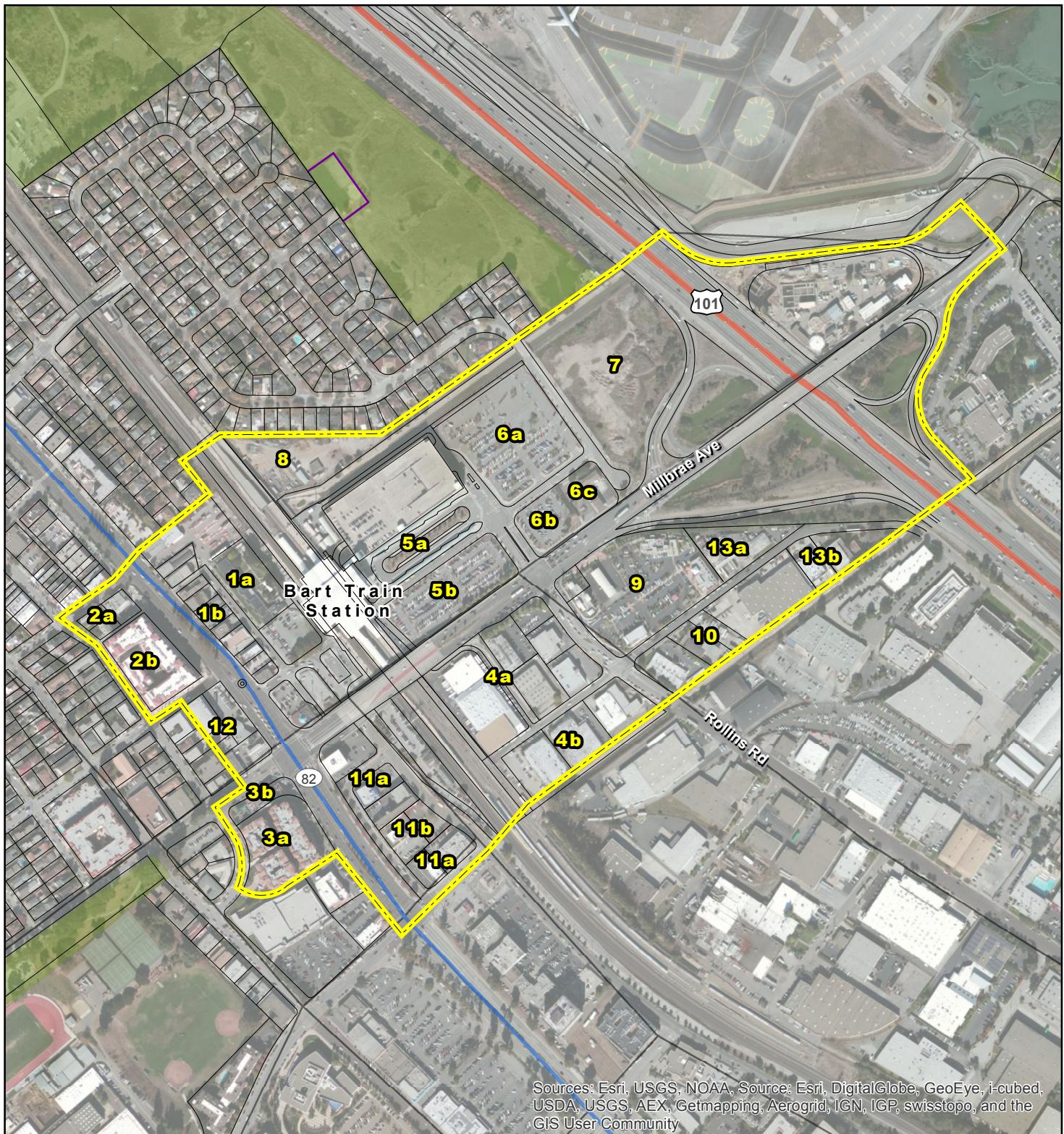
Vicinity Map

Figure 1

718 Third Street Eureka, CA 95501 T 707 443 8326 F 707 444 8330 E eureka@ghd.com W www.ghd.com

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Data source: ESRI: Street Map USA/2013; Park Boundaries, parcel data. Created by:emgutierrez



Sources: Esri, USGS, NOAA. Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

- Interstate Freeway
- Highway
- Major Road
- Parks
- Project Boundary

Paper Size ANSI A
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Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet



City of Millbrae
Water Supply Assessment

Job Number 84090832.94
Revision 1
Date 25 Feb 2015

Site Map

Figure 2

718 Third Street Eureka, CA 95501 T 707 443 8326 F 707 444 8330 E eureka@ghd.com W www.ghd.com

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Data source: ESRI: Street Map USA/2013; Park Boundaries, parcel data. Created by:emgutierrez

3. Water Service Area

The City is located on the San Francisco Peninsula approximately fifteen miles south of downtown San Francisco, in the County of San Mateo. The City comprises an approximate area of 3.2 square miles as shown in Figure 1. The City purchases its water from the San Francisco Public Utilities Commission (SFPUC) and distributes potable water to customers through approximately 70 miles of domestic water mains. The water distribution system 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 million gallons);
- 2 water pump stations; and
- 6,504 service connections.

The City currently has 5 connections to the SFPUC's Regional Water System (RWS).

3.1 Population

The City is essentially built-out and future population growth is assumed to be associated with redevelopment projects within the existing urban footprint. The United States Census has reported the City's 2010 population as 21,532 persons. The projected population growth for Millbrae used in the UWMP is shown in Table 3.

Table 3. Projected population of Millbrae over 20 years.

Year	2015	2020	2025	2030	2035
Projected Population	22,600	23,600	24,700	25,700	26,700

3.2 Climate

The climate in the City is typical of the central California coast with dry summers, moderate wintertime precipitation, and reasonably stable temperatures year-round. These climate types typically result in a fair amount of outdoor water usage during the dry months. A summary of relevant climate information presented in the 2010 UWMP is shown in Table 4 below.

Table 4. Climate information for the City of Millbrae.

Month	Standard Monthly Evapotranspiration (inches)	Average Monthly Rainfall (inches)	Average Maximum Temperature (Fahrenheit)
January	1.83	4.40	55.76
February	2.20	3.61	59.11

Month	Standard Monthly Evapotranspiration (inches)	Average Monthly Rainfall (inches)	Average Maximum Temperature (Fahrenheit)
March	3.42	2.80	61.25
April	4.84	1.37	63.85
May	5.61	0.39	66.80
June	6.26	0.11	70.04
July	6.47	0.02	71.41
August	6.22	0.04	72.13
September	4.84	0.18	73.47
October	3.66	0.99	70.18
November	2.36	2.33	62.94
December	1.83	3.78	56.36
Total	49.54	20.03	65.30

4. Water Supply

For many water utilities, supply can come from a variety of sources including wholesale, surface water, groundwater, and water reuse. The City of Millbrae, however, receives their entire potable water source through a wholesale contract with SFPUC.

4.1 San Francisco Public Utilities Commission Regional Water System

The SFPUC water supply is predominantly from the Sierra Nevada, delivered through the Hetch Hetchy aqueducts, but also includes treated water produced by the SFPUC from its local watersheds and facilities in Alameda and San Mateo Counties. The amount of imported water available to the SFPUC's retail and wholesale customers is constrained by hydrology, physical facilities, and the institutional parameters that allocate the water supply of the Tuolumne River. Due to these constraints, the SFPUC is very dependent on reservoir storage to firm-up its water supplies. The SFPUC serves its retail and wholesale water demands with an integrated operation of local Bay Area water production and imported water from Hetch Hetchy. In practice, the local watershed facilities are operated to capture local runoff. Further information on the SFPUC RWS can be found in the UWMP.

4.1.1 Water System Improvement Plan

In order to enhance the ability of the SFPUC water supply system to meet identified service goals for water quality, seismic reliability, delivery reliability, and water supply, the SFPUC has undertaken the Water System Improvement Program (WSIP), approved October 31, 2008. The WSIP will deliver capital improvements aimed at enhancing the SFPUC's ability to meet its water service mission of providing high quality water to customers in a reliable, affordable and environmentally sustainable manner. The WSIP includes a total delivery reliability goal of 265 million gallons per day (mgd) of supply with no greater than 20 percent rationing in any one year of a drought.

In approving the WSIP, SFPUC's five-member governing commission (Commission) adopted a Phased WSIP Variant for water supply that was analyzed in its CEQA document. This Phased WSIP Variant established a mid-term water supply planning milestone of 2018 when the Commission is scheduled to reevaluate water demands through 2030. At the same meeting, the Commission also imposed the Interim Supply Limitation (ISL), which limits the volume of water that the member agencies and San Francisco can collectively purchase from the RWS to 265 mgd, until at least 2018. Although the Phased WSIP Variant included this mid-term water supply planning milestone, it also included full implementation of all proposed WSIP improvement projects to insure that the public health, seismic safety, and delivery reliability goals were achieved as soon as possible.

4.1.2 2009 Water Supply Agreement

The business relationship between SFPUC and its wholesale customers is largely defined by the 2009 Water Supply Agreement, which replaced the Settlement Agreement and Master Water Sales Contract that expired in June 2009. The 2009 Water Supply Agreement addresses the rate-making methodology used by SFPUC in setting wholesale water rates for its wholesale customers, and water supply and water shortages for the RWS. The 2009 Water Supply Agreement has a 25-year term (through 2034) and is supplemented by Individual Water Supply Contracts.

As described above, the approved WSIP includes an ISL, to limit sales from the San Francisco RWS watersheds to an annual average of 265 mgd through 2018. The 2009 Water Supply Agreement provides for a 184 mgd "Supply Assurance" (expressed on an annual average basis) to SFPUC's wholesale customers and an 81 mgd "Supply Assurance" to San Francisco. These assurances are 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 RWS. Although the wholesale customers did not agree to the ISL, the 2009 Water Supply Agreement provides a framework for administering the ISL, which is discussed below.

4.1.3 Individual Supply Guarantees

The City's Individual Supply Guarantee (ISG), as described in the 2009 Water Supply Agreement and its contract, is 3.15 mgd (3530 AFY).

Although the 2009 Water Supply Agreement and accompanying Water Supply Contracts expire in 2034, the Supply Assurance (which quantifies SFPUC's obligation to supply water to its individual wholesale customers) survives its expiration and continues indefinitely. The 2010 UWMP provides additional discussion on the supply contracts.

4.1.4 Interim Supply Allocations

The Interim Supply Allocations (ISAs) refer to each individual wholesale customer's share of the ISL. On December 14, 2010, the Commission established each agency's ISA through 2018. In general, the Commission based the allocations on the lesser of the projected fiscal year 2017-18 purchase projections or the ISGs. The ISA's are effective only until December 31, 2018, and do not affect the Supply Assurance or the ISGs. The City's ISA is 3.13 mgd (3,506 AFY).

As stated in the Agreement, the wholesale customers do not concede the legality of some of the Commission's actions, including establishment of the ISA, and expressly retain the right to challenge these provisions, if and when imposed, in a court of competent jurisdiction.

4.1.5 Water Shortage Allocation Plan

The 2009 Water Supply Agreement includes a Water Shortage Allocation Plan (WSAP) that addresses shortages of up to 20 percent of system-wide use. The Tier One Shortage Plan allocates water from the RWS between SFPUC and the wholesale customers, during system-wide shortages of 20 percent or less. The WSAP also anticipated a Tier Two Shortage Plan, adopted by the wholesale customers, which would allocate the available water from the RWS among the wholesale customers.

4.1.6 Tier One Drought Allocations

The Tier One Shortage Plan replaced the prior Interim Water Shortage Allocation Plan (IWSAP), adopted in 2000, which also allocated water for shortages up to 20 percent. The Tier One Plan also allows for voluntary transfers of shortage allocations between the SFPUC and any wholesale customer and between wholesale customers themselves. In addition, water "banked" by a wholesale customer, through reductions in usage greater than required, may also be transferred. Table 5 illustrates the Tier One Plan Allocations.

Table 5. Tier 1 Reductions.

Level of System Wide Reduction in Water Use Required	Shares Available	
	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%

4.1.7 Tier Two Drought Allocations

The wholesale customers have negotiated and 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. This Tier Two allocation is based on a formula that takes multiple factors for each wholesale customer into account, including:

- The ISG;
- 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 mgd, which in turn is the weighted average of two components:

- The wholesale customer's ISG that is fixed and stated in the Agreement; and
- The Base/Seasonal Component, which is variable and calculated using the monthly water use for three consecutive years prior to the onset of the drought for each of the wholesale customers for all available water supplies.

The second component is accorded twice the weight of the first fixed component in calculating the Allocation Basis. Minor adjustments to the Allocation Basis are then made to ensure a minimum cutback level, a maximum cutback level, and a sufficient supply for certain wholesale customers.

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

The Tier Two Plan requires that the Allocation Factors be calculated by BAWSCA each year in preparation for a potential water shortage emergency. As the wholesale customers change their water use characteristics (e.g., increases or decreases in SFPUC purchases and use of other water sources, changes in monthly water use patterns, or changes in residential per capita water use), the Allocation Factor for each wholesale customer will also change. However, for long-term planning purposes, each wholesale customer shall use as its Allocation Factor, the value identified in the Tier Two Plan when adopted. The Tier Two Plan will expire in 2018 unless extended by the wholesale customers.

4.1.8 Reliability of the Regional Water System

The SFPUC has historically met demand in its service area in all year types from its watersheds, including the Tuolumne River, the Alameda Creek, and the San Mateo County watersheds. In general, 85 percent of the supply comes from the Tuolumne River through Hetch Hetchy Reservoir and the remaining 15 percent comes from the local watersheds through the San Antonio, Calaveras, Crystal Springs, Pilarcitos, and San Andreas Reservoirs. The adopted WSIP retains this mix of water supply for all year types.

The WSIP includes the following water supply projects to meet dry-year demands, with no greater than 20 percent system-wide rationing in any one year:

- Restoration of Calaveras Reservoir capacity;
- Restoration of Crystal Springs Reservoir capacity;
- Westside Basin Groundwater Conjunctive Use; and
- Water Transfer with Modesto Irrigation District (MID) / Turlock Irrigation District (TID).

The SFPUC has provided a projection of water supply reliability. The "Projected System Supply Reliability Based on Historical Hydrologic Period" (letter from P. Kehoe dated February 22, 2010),

presents the projected RWS supply reliability under a range of hydrologic conditions and takes into account the impacts of climate change as SFPUC currently understands them.

The reliability projections assume that the wholesale customers purchase 184 mgd from the RWS through 2030 and that SFPUC implements the dry-year water supply projects included in the WSIP. The projections represent the wholesale share of available supply during historical water year types per the Tier One WSAP. The projections do 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, which are described below.

SFPUC has translated these dry year projections into reductions to the total 184 mgd water supply available to its wholesale customers. SFPUC's projections indicate that a 10 percent system-wide reduction in supply will occur in a single dry year and up to a 28 percent system-wide reduction will occur in the second and third years of a multiple dry year scenario. This is slightly higher than the mathematical relationship between predicted "average" and "dry years" and reflects some ability to manage dry conditions through system storage.

Table 6 illustrates the anticipated reductions in service reliability that could be experienced by the City when wholesale supplies are reduced during single dry and multiple dry water years.

Table 6. Current and future water supplies (AFY) for the City of Millbrae.

Water Supply Sources	Average/Normal Water Year Supply	Single-Dry Water Year	Multiple-Dry Water Years		
			Year 1	Year 2	Year 3
SFPUC (to customers) (AFY)	206,121	170,946	170,946	148,429	148,429
Percent of Average/Normal Year		83%	83%	72%	72%
City of Millbrae Supply (AFY)	3,530	2,687	2,687	2,333	2,333
City of Millbrae Percent of Average/Normal Year		76%	76%	66%	66%

4.1.9 Increase in Supply Rationing

The adopted WSIP provides for a dry year water supply program that, when implemented, would result in system-wide rationing of no more than 20 percent of customer demand. The Programmatic Environmental Impact Report (PEIR) for the WSIP identified the following drought shortages during the design drought; 3.5 out of 8.5 years at 10 percent rationing and three out of eight and one-half years at 20 percent.

If the SFPUC did not develop a supplemental water supply in dry years to offset the effects of the fishery flows on water supply, rationing would increase during dry years. If the SFPUC experiences a drought between 2013 and 2018, in which rationing would need to be imposed, rationing would increase by approximately one percent in shortage years. Reduced flows for fisheries could require supply rationing to increase from 20 to 21 percent if the maximum design drought occurs between the years 2013 and 2018. After 2018, completion of the WSIP would provide for the reliability goal of system-wide supply rationing of no more than 20 percent.

4.1.10 Supplemental Supply

The SFPUC may be able to manage the water supply loss associated with the fishery flows through the following actions and considerations:

- Development of additional conservation and recycling;
- Development of additional groundwater supply;
- Water transfers from MID or TID;
- Increase in Tuolumne River supply;
- Revising the Upper Alameda Creek Filter Gallery Project capacity; and
- Development of a desalination project.

4.1.11 Meeting the Level of Service Goal for Delivery Reliability

The SFPUC has stated a commitment to meeting its contractual obligation to its wholesale customers of 184 mgd and its delivery reliability goal of 265 mgd with no greater than 20 percent rationing in any one year of a drought. In Resolution No. 10-0175 adopted on October 15, 2010, the Commission directed staff to provide information to the Commission and the public by March 31, 2011, on how the SFPUC has the capability to attain its water supply levels of service and contractual obligations. This directive was in response to concerns expressed by the Commission and the Wholesale Customers regarding the effect on water supply of the instream flow releases required as a result of the Lower Crystal Springs Dam Improvement Project and the Calaveras Dam Replacement Project.

In summary, the SFPUC has a projected shortfall of available water supply to meet its Level of Service goals and contractual obligations. The SFPUC has stated that current decreased levels keep this from being an immediate problem, but that in the near future, the SFPUC must resolve these issues. Various activities are underway by the SFPUC to resolve the shortfall problem.

4.2 Bay Area Water Supply and Conservation Agency

BAWSCA (formerly BAWUA) was created on May 27, 2003, to represent the interests of the 26 agencies that purchase water on a wholesale basis from the San Francisco RWS. The City of Millbrae is a member of BAWSCA, which is the only entity that has the authority to directly represent the needs of the wholesale customers that depend on the RWS. BAWSCA also has the authority to coordinate water conservation, supply and recycling activities for its member agencies; acquire water and make it available to other agencies on a wholesale basis; finance projects, including improvements to the regional water system; and build facilities jointly with other local public agencies or on its own to carry out the agency's purposes. There are two significant BAWSCA activities that impact the City's water supply and demand projections, the Water Conservation Implementation Plan (WCIP) and the Long Term Reliable Water Supply Strategy.

4.2.1 Water Conservation Implementation Plan

In September 2009, BAWSCA completed the WCIP. The WCIP includes 37 potential demand management activities, including 32 existing measures and five new measures that were defined and developed as part of the WCIP. It is an implementation plan for BAWSCA and its member

agencies to attain the water use efficiency goals that BAWSCA's member agencies committed to in 2004 as part of the PEIR for the WSIP. The WCIP also identifies how BAWSCA member agencies can use water conservation as a way to continue to provide reliable water supplies to their customers through 2018 given the SFPUC's 265 mgd ISL. The WCIP included development of a mathematical model for each BAWSCA member agencies' conservation program.

The City is working with BAWSCA to implement water conservation programs. Water conservation efforts support the ISL commitments and allow each supplier to meet the 2020 water use target adopted with the 2010 UWMPs.

4.2.2 Long Term Reliable Water Supply Strategy

BAWSCA has developed the Long-Term Reliable Water Supply Strategy (BAWSCA Strategy) to meet the projected water needs of its member agencies and their customers through 2035 and to increase their water supply reliability under normal and drought conditions.

The implementation of the BAWSCA Strategy involves the coordination with BAWCSA member agencies and will be adaptively managed to ensure that the goals of the BAWSCA Strategy (increased normal and drought year reliability) are efficiently and cost-effectively being met.

4.3 Groundwater

The City of Millbrae does not augment their water supplies with groundwater. The area within the city limits was determined to lack a viable groundwater source. In addition, the City has determined that desalination of ocean or groundwater is not a feasible option at this time, due to the high capital and operating costs of such systems.

4.4 Recycled Water

As stated in the UWMP, the City does take advantage of recycled water produced at the City's Water Pollution Control Plant (WPCP). The recycled water is generated at the WPCP, in the form of disinfected effluent from the secondary treatment. Although not potable, the recycled water is of sufficient quality for tasks around the WPCP such as equipment washing, irrigation, and dust control. At present, the available supply for recycled water use at the WPCP is 28 AFY. It should be noted that in the past the City has explored recycled water for similar uses at locations throughout the city. However, it was determined at the time of analysis that the creation of such a program would not be cost effective.

4.5 Historic Water Supplies

SFPUC has been the sole provider of potable water for the City of Millbrae during the past 10 years. Table 7 below shows the water deliveries made to the City over this time period.

Table 7. Past water deliveries from SFPUC.

Water Year	Purchases (AFY)	Purchases (MGD)
2004-2005	2,733	2.44
2005-2006	2,969	2.65

Water Year	Purchases (AFY)	Purchases (MGD)
2006-2007	2,745	2.45
2007-2008	2,756	2.46
2008-2009	2,677	2.39
2009-2010	2,509	2.24
2010-2011	2,476	2.21
2011-2012	2,375	2.12
2012-2013	2,554	2.28
2013-2014	2,610	2.33

4.6 Projected Water Supply

As noted previously, the City has recently reached an agreement with the SFPUC for a water contract which guarantees the normal weather supply of 3.15 mgd (3,530 AFY). This contract is valid through the year 2034; however, as noted in the UWMP SFPUC's supply assurance states their obligation to supply their wholesale customers indefinitely. As shown in the UWMP there are no plans to develop groundwater, desalination, recycled water, or further wholesale water contracts in the future. Therefore, the anticipated water supply over the 20 year planning horizon is composed of the deliveries from the contract with the SFPUC (3,530 AFY), and the anticipated maximum production of 28 AFY of recycled water for use at the WPCP. The total projected water supply from the City's most recently adopted UWMP (2010) over a 20-year planning horizon is shown below.

Table 8. Current and future water supplies (AFY) for the City of Millbrae.

Water Supply Sources	2015	2020	2025	2030	2035
SFPUC Potable Water Contract	3,530	3,530	3,530	3,530	3,530
Groundwater	0	0	0	0	0
Other Water Transfers	0	0	0	0	0
Desalination	0	0	0	0	0
Recycled Water	28	28	28	28	28
Total Supply (AFY)	3,558	3,558	3,558	3,558	3,558
Total Supply (MGD)	3.18	3.18	3.18	3.18	3.18

5. Water Demand

The 2010 UWMP developed demand projections that took into account both anticipated growth patterns and the per capita demand reduction requirements of SBx7-7. This section provides an overview of the City's approved water demand baseline and targets. It presents detailed demand projections for the proposed Projects.

The detailed demand projections are compared against the approved targets to confirm that the City can supply the Project and comply with SBx7-7. The projected demands are carried forward into the sufficiency analysis presented in Section 7.

5.1 Baseline and Water Demand Targets

SBx7-7 as stipulated in the Water Conservation Act of 2009 became effective on January 1, 2010, and requires each urban water supplier to develop a baseline per capita water use (baseline) and 2015 and 2020 water use targets, which generally reflect a 10 percent and 20 percent reduction from the baseline, respectively. As stated in the 2010 UWMP, the City:

- Computed a baseline use of 119 gallons per capita per day (gpcd) based on water use in the period from 1996 until 2005;
- Adopted a 2015 interim target of 116 gpcd; and
- Adopted a 2020 target of 113 gpcd.

In order to meet its SBx7-7 water use targets, the 2010 UWMP outlined a series of strategies for reducing demand that are consistent with its Demand Management Program and BAWSCA's WCIP. These are described in Section 4.2.

The baseline demand conditions are those that account for the existing municipal water demand, as well as projected future uses over a twenty year planning horizon. Baseline demand projections were developed in the 2010 UWMP, which took into account the climate, the projected populations, the existing use trends, and the water conservation goals as outlined by the state. For the water conservation goals, the City set a target of 113 gallons per capita per day (gpcd) in 2020 and 116 gpcd in 2015 as part of SBX7-7. Table 9 shows the past and projected water usages for the City as described in the UWMP. Projected water usages are determined using the City's water conservation goals and the projected populations presented in Table 3.

Table 9. Past and projected demand for each customer class (AFY).

Past and Projected Demand for Customer Class	2005	2010	2015	2020	2025	2030	2035
Single family	1,459	1,294	1,525	1,551	1,624	1,689	1,755
Multi-family	410	384	452	460	481	501	520
Commercial	408	389	459	466	488	508	528
Industrial	0	0	0	0	0	0	0

Past and Projected Demand for Customer Class		2005	2010	2015	2020	2025	2030	2035
Institutional/government		90	102	120	122	127	133	138
Landscape		151	170	200	204	213	222	231
Agriculture		0	0	0	0	0	0	0
Other		424	22	4	4	4	5	5
Unaccounted for water		24	152	176	179	188	195	203
Total demand (AFY)		2,965	2,513	2,936	2,987	3,126	3,253	3,379
Total demand (MGD)		2.65	2.24	2.62	2.67	2.79	2.90	3.02

In addition to usage projections, the UWMP presents predictions for the number of service connections per customer class over the same time period. The past and projected number of service connections is presented below in Table 10.

Table 10. Projected number of service connections per customer class.

Customer Class	2005	2010	2015	2020	2025	2030	2035
Single family	5,672	5,716	6,000	6,265	6,557	6,822	7,088
Multi-family	258	263	276	288	302	314	326
Commercial	299	308	323	338	353	368	382
Industrial	0	0	0	0	0	0	0
Institutional/government	41	44	46	48	50	53	55
Landscape	57	80	84	88	92	95	99
Agriculture	0	0	0	0	0	0	0
Other	84	93	98	102	107	111	115
Total	6,411	6,504	6,827	7,129	7,461	7,763	8,065

5.2 BAWSCA Annual Survey FY 2012-2013

The annual survey (April 2014) conducted by the Bay Area Water Supply and Conservation Agency for the fiscal year 2012-2013, reported the actual water demand by sector and for residential per capita use for the City of Millbrae as shown in Table 11 and 12, respectively.

Table 11. Actual water demand by sector for City of Millbrae.

Demand by Sector	Actual FY 2009-2010 (CCF)	Actual FY 2010-2011 (CCF)	Actual FY 2011-2012 (CCF)	Actual FY 2012-2013 (CCF)
Residential	731,063	722,239	720,074	737,836
Commercial/Industrial	166,457	174,237	155,280	160,643
Other	48,922	52,766	50,359	54,788
Dedicated Irrigation	74,097	80,918	65,551	88,356
Unaccounted for Water	81,012	57,811	54,990	83,524

Table 12. Actual residential per capita water use for City of Millbrae.

Per Capita Use	Actual FY 2009-2010 (gpcd)	Actual FY 2010-2011 (gpcd)	Actual FY 2011-2012 (gpcd)	Actual FY 2012-2013 (gpcd)
Residential	70	69	69	70

The proposed projects considered in this WSA consist of only multi-family residential units; therefore in order to represent an accurate water demand it is necessary to differentiate between the various contributions that can make up the residential category (e.g., single family verses multi-family). Data from the California Department of Finance, Demographic Research Unit was utilized and is included in Appendix A. For the year 2015, the City of Millbrae is anticipated to have 2,915 multi-family units, 8,616 total residential units, and a projected population density of 2.75 persons per household. Utilizing this data along with the projected potable water demands for 2015 from the UWMP, the per capita water use for the categories of multi-family residential and total residential are estimated to be 50.3 and 74.5 gpcd, respectively. The predicted total residential demand is slightly greater using this approach than what is reported by BAWSCA (70 gpcd) and is therefore considered conservative. Based on this reasoning, the water demand rate for multi-family residential (50.3 gpcd) is used as the total residential demand for the analysis presented in this WSA.

5.3 Project Water Demands

As mentioned previously, the proposed buildout condition associated with the MSASP involves the addition of approximately 1.6 million SF of new office space, 142,000 SF of new retail space, 1,440 new residential units, and 325 new hotel rooms split among three development projects. Shown below in Table 13 is the projected water demand for the buildout of each project.

Table 13. Projected water demands for each development project.

Project	Projected Water Demand (GPD)	Projected Water Demand (AFY)
TOD #1	139,326	156
TOD #2	153,242	172
Other Allocations	315,868	354
Total	608,435	682

These demands are based on the anticipated water usages used in the MSASP, which uses standard wastewater generation values based on square footage, dwelling units, or hotel rooms. The wastewater generation values, excluding residential, are then multiplied by a factor of 1.15 to estimate the associated potable water demand for each sector. In addition, water demand estimates for the residential category were determined by using only the predicted demand for multi-family units as stated previously. A full listing of the calculations for each project, along with the wastewater generation rates and the BAWSCA Annual Survey information for the City of Millbrae, can be found in Appendix A.

6. Dry Year Supply

From an urban development perspective, planning for water supply availability during dry periods is very important. As has been demonstrated in California over the past several years, no guarantees can be placed on receiving normal or consistent water volumes annually. As such, WSA's performed under SB 610 require the determination of anticipated available water supplies during normal, single dry, and multiple dry water years.

The City of Millbrae depends solely on the potable water deliveries provided by the SFPUC. As a result, the delivery volumes for normal, single, and multiple dry years presented in the UWMP were provided by the SFPUC after a reliability analysis of their system. The values presented in the following sections are based on those found in the 2010 UWMP.

6.1 Normal Year

During a normal water year, the anticipated delivery volume from SFPUC is 3.15 mgd or 3,530 AFY. The anticipated volume of recycled water is 28 AFY, resulting in total water availability in a normal year of 3,558 AFY.

6.2 Single Dry Year Supply

Similar to normal precipitation years, the sole source of water for the City comes from the SFPUC contracted deliveries and the non-potable recycled uses at the WPCP. As presented in the UWMP, the water delivery amount for a single dry year is projected to be 2,687 AFY. The anticipated volume of recycled water during a single dry year remains the same at 28 AFY.

6.3 Multiple Dry Year Supply

During extended dry periods, the amount of water available for municipal use decreases even further. Similar to normal and single dry years, the sole anticipated source of water during multiple dry years would come from the SFPUC contract and recycled water at the WPCP. During multiple dry years, the anticipated water delivery volume from SFPUC is 2,333 AFY, and the recycled water volume remains the same at 28 AFY.

6.4 Dry Year Supply Summary

The total existing dry year supply is based on the projected amounts available from the SFPUC contract and the recycled water production at the City's WPCP. The total dry year supplies as reported in the most recent UWMP are shown below (Table 14).

Table 14. Normal, single, and multiple dry year projected water supplies.

Source	Normal	Single Dry	Multiple Dry
SFPUC Potable Water Contract (AFY)	3,530	2,687	2,333
Recycled Water (AFY)	28	28	28
Total Supply (AFY)	3,558	2,715	2,361
Total Supply (MGD)	3.18	2.42	2.11

7. Sufficiency Analysis & Conclusions

7.1 Sufficiency Analysis

The City approved its 2010 Urban Water Management Plan (2010 UWMP) in June 2011. This document projected water supplies and demands from 2010 through 2035 and compared them under a range of hydrologic conditions. The 2010 UWMP projected that demands in the commercial, industrial and institutional (CII) sector would increase from 2,513 AFY in 2010 to 3,379 AFY in 2035, an increase of 866 AFY. As noted above, the Project will result in a demand of approximately 682 AFY. **This additional demand does not adversely impact the City's water supply during normal year conditions.** However, the additional water demands from the proposed projects results in a water deficit for single dry and multiple dry years starting in 2015.

It should be noted that some components of the proposed project were considered within the demands forecasted in the 2010 UWMP. In order to account for the project demands that were already considered in the 2010 UWMP, those demands of approximately 560 AFY were deducted from the estimated demands without the projects (e.g., 2015 Normal: 2,936 – 560 = 2,376 AFY) throughout the planning horizon.

Table 15. Supply and demand comparison for normal, single-, and multiple dry years over 20 years.

Year	Water Year	Supply Total (AFY)	Without Projects			With Projects		
			Demand (AFY)	Surplus/Deficit (AFY)	% Supply Surplus/Deficit ¹	Demand (AFY)	Surplus/Deficit (AFY)	% Supply Surplus/Deficit ¹
2015	Normal	3,558	2,376	1,182	33.2%	3,057	501	14.1%
	Single Dry	2,715	2,376	339	12.5%	3,057	-342	-12.6%
	Multiple Dry	2,361	2,376	-15	-0.6%	3,057	-696	-29.5%
2020	Normal	3,558	2,427	1,131	31.8%	3,108	450	12.6%
	Single Dry	2,715	2,427	288	10.6%	3,108	-393	-14.5%
	Multiple Dry	2,361	2,427	-66	-2.8%	3,108	-747	-31.6%
2025	Normal	3,558	2,566	992	27.9%	3,247	311	8.7%
	Single Dry	2,715	2,566	149	5.5%	3,247	-532	-19.6%
	Multiple Dry	2,361	2,566	-205	-8.7%	3,247	-886	-37.5%
2030	Normal	3,558	2,693	865	24.3%	3,374	184	5.2%
	Single Dry	2,715	2,693	22	0.8%	3,374	-659	-24.3%
	Multiple Dry	2,361	2,693	-332	-14.0%	3,374	-1,013	-42.9%
2035	Normal	3,558	2,819	739	20.8%	3,500	58	1.6%
	Single Dry	2,715	2,819	-104	-3.8%	3,500	-785	-28.9%
	Multiple Dry	2,361	2,819	-458	-19.4%	3,500	-1,139	-48.2%

¹Supply surplus/deficit percentages based on percentage of total annual water supply.

According to the requirements outlined in SB 610 (Water Code 10910), if it is found that the water supply is, or will be insufficient, the public water system shall provide to the city or county its plans for acquiring additional water supplies. Typically, these plans include, but are not limited to:

- Estimates of the total cost and the proposed methods of financing the costs associated with expanding or acquiring additional water supplies;
- All federal, state, and local permits, approvals, or entitlements that are anticipated to be required in order to acquire said water supplies; and

- The estimated timeframes within which the public water system or city expects to be able to acquire additional water supplies.

The following sections provide measures that could be used to improve water use efficiency and decrease the City's overall water demand.

7.1.1 Water Efficiency and Conservation Measures

In addition to measures that can improve water use efficiency, methods to decrease current and future demand can prove effective in meeting anticipated water demands. The following is a list of water conservation measures currently undertaken by the City:

- Promote the use of efficient indoor water fixtures;
- Encourage the use of greywater;
- Use of drip and low volume irrigation methods are encouraged;
- Hotels and motels giving guests the option to not launder towels and linens daily;
- Limit water use in fountains and other decorative pieces to recirculated water;
- Hoses in use must be fit with an appropriate shut-off spray nozzle; and
- Irrigation of ornamental landscapes with potable water is restricted to between 6 p.m. and 10 a.m.

Augmenting the encouraged water conservation measures to include more components could also help in reducing current and future water demand. In addition to the measures that are currently being implemented, the City is offering various other resources to the community to help reduce water usage through their Water Resources & Conservation Program. Components of this program include:

- School outreach programs;
- Newsletter/brochures;
- Water Conservation Website;
- Workshops;
- Free residential and commercial water saving devices;
 - Low flow showerheads, faucet aerators, toilet leak detection tablets
- Shower timers; and
- Rebates for the use of high efficiency toilets, clothes washers, and rainwater harvesting systems.

Continuing to encourage and expand these programs into the future could help to further alleviate the predicted water deficit that would occur with the proposed buildout of the City.

7.2 Capital Outlay and Permits Necessary to Accomplish the Program

Future water projects that will likely increase (improve) reliability of supplies in the City's service area include:

- SFPUC's WSIP projects which are approved, funded, designed and scheduled to be complete by 2030; and
- Projects that may develop through BAWSCA's long-term water supply strategy, which are scheduled to be identified and completed by 2018.

The City's water supply projections are only dependent on completion of the SFPUC's WSIP, which is approved, funded, designed and under various stages of construction.

7.3 Regulatory Requirements for Delivery of Water Supply

The City's water supply sources comply with all current regulatory standards. In addition, the City will continue to monitor its system in accordance with its permit from the California Department of Public Health.

7.4 Conclusion

Based on the analysis presented above, this WSA demonstrates that the City's existing potable water supplies are sufficient to meet the City's existing and projected future water demands, including the future water demands associated with the proposed projects, to the year 2035 for normal water year conditions yielding a 58 AFY (1.6%) surplus of water.

Under single and multiple dry year scenarios, water demand is anticipated to exceed supply starting in 2015 and extends over the course of the 20-year planning period. During these critically dry periods the City is prepared to initiate mandatory water demand reductions through its 2011 Water Shortage Contingency Plan (WSCP).

The City's WSCP uses a staged approach that classifies a water shortage event into one of five levels spanning a range from less than 5 percent up to 50 percent. This is based on the understanding that water shortages of varying severity require different measures to overcome the deficiency. Therefore, any reductions that could be required to manage demand restrictions in single and multiple year droughts can be achieved by the City.

To achieve additional water demand reductions, the City can continue to implement proven Best Management Practices for water conservation, such as using drought resistant plants for landscaping, irrigating with graywater, and increasing the use of recycled water for irrigation from the WPCP. In addition, understanding and minimizing unaccounted for uses (e.g., fixing leaks in the municipal water supply infrastructure) would further help in reducing water demand.

8. References

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Appendices

Appendix A – Project Water Usage Calculations

City of Millbrae
Water Supply Assessment

Water Demand per Project

Project: TOD#1 Serra

Use Type	Quantity	Units	Generation Rate ^{1,2}	Wastewater Generation Rate		Water Demand ⁴ (GPD)	Water Demand (AFY)
				Units	Demand ³ (GPD)		
Office	267,000	SF	0.1	gpd/SF	26,700	30,705.0	34
Industrial	(32,000)	SF	0.1	gpd/SF	(3,200)	(3,680)	(4)
Retail (store)	19,200	SF	0.1	gpd/SF	1,920	2,208	2
Retail (restaurant)	12,800	SF	2.78	gpd/SF	35,556	40,889	46
Residential ⁵	500	Units	138.41	gpd/Unit	-	69,204	78
Hotel Rooms	0	Units	200	gpd/Unit	0	0	0

TOTAL for TOD#1 139,326 156

Project: TOD#2 BART

Use Type	Quantity	Units	Generation Rate ^{1,2}	Wastewater Generation Rate		Water Demand ⁴ (GPD)	Water Demand (AFY)
				Units	Demand ³ (GPD)		
Office	164,535	SF	0.1	gpd/SF	16,454	18,922	21
Industrial	0	SF	0.1	gpd/SF	0	0	0
Retail (store)	28,161	SF	0.1	gpd/SF	2,816	3,239	4
Retail (restaurant)	18,774	SF	2.78	gpd/SF	52,150	59,973	67
Residential ⁵	321	Units	138.41	gpd/Unit	-	44,429	50
Hotel Rooms	116	Units	200	gpd/Unit	23,200	26,680	30

TOTAL for TOD#2 153,242 172

Project: OTHER ALLOCATIONS

Use Type	Quantity	Units	Generation Rate ^{1,2}	Wastewater Generation Rate		Water Demand ⁴ (GPD)	Water Demand (AFY)
				Units	Demand ³ (GPD)		
Office	1,145,700	SF	0.1	gpd/SF	114,570	131,756	148
Industrial	(303,240)	SF	0.1	gpd/SF	(30,324)	(34,873)	(39)
Retail (store)	38,160	SF	0.1	gpd/SF	3,816	4,388	5
Retail (restaurant)	25,440	SF	2.78	gpd/SF	70,667	81,267	91
Residential ⁵	616	Units	138.41	gpd/Unit	-	85,259	96
Hotel Rooms	209	Units	200	gpd/Unit	41,800	48,070	54

TOTAL for OTHER ALLOCATIONS 315,868 354

TOTAL PROJECT WATER DEMAND 608,435 682

Notes:

- 1 - Generation rates are from the MSASP and are related to wastewater except for the Residential use type.
- 2 - The generation rate for Residential assumes a population density of 2.75 persons/unit with a water demand of 50.3 gpcd. Population density is based on the California Department of Finance - Demographic Research Unit: Report E-5: Population and Housing Estimates for Cities, Counties, and the State, January 1, 2011-2015, with 2010 Benchmark Water demand is based on the 2010 Urban Water Management Plan and data from the California Department of Finance.
- 3 - Wastewater demands are calculated by multiplying the square footage by the generation rate.
- 4 - Water demands are estimated from the wastewater demands by multiplying by a factor of 1.15, except for Residential. The 1.15 multiplication factor assumes 85% of the potable water is converted to wastewater (Wastewater Engineering; Metcalf & Eddy, 2003).
- 5 - The Residential use type only considers the demand from multi-family units.

Year	POPULATION			HOUSING UNITS							Persons per Household	Multi-Family Residential Units ²
	Total	Household	Group Quarters	Total	Single Detached	Single Attached	Two to Four	Five Plus	Mobile Homes	Occupied		
2010	21,532	21,217	315	8,372	5,328	292	285	2,434	33	7,994	2.65	2,719
2011	21,625	21,310	315	8,383	5,339	292	285	2,434	33	8,005	2.66	2,719
2012	22,247	21,932	315	8,562	5,376	292	285	2,576	33	8,176	2.68	2,861
2013	22,527	22,212	315	8,562	5,376	292	285	2,576	33	8,176	2.72	2,861
2014	22,617	22,302	315	8,562	5,376	292	285	2,576	33	8,176	2.73	2,861
2015	22,898	22,583	315	8,616	5,376	292	285	2,630	33	8,228	2.75	2,915

City of Millbrae Urban Water Management Plan

Table 2-2: Current and Projected Potable Water Demands for Each Customer Class

Customer Class	2010		2015		2020		2025		2030		2035	
	AFY	%										
Single Family	1,294	51.5%	1,525	51.9%	1,551	51.9%	1,624	52.0%	1,689	51.9%	1,755	51.9%
Multi-Family	384	15.3%	452	15.4%	460	15.4%	481	15.4%	501	15.4%	520	15.4%
Commercial	389	15.5%	459	15.6%	466	15.6%	488	15.6%	508	15.6%	528	15.6%
Industrial	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Institutional/Government	102	4.1%	120	4.1%	122	4.1%	127	4.1%	133	4.1%	138	4.1%
Landscape	170	6.8%	200	6.8%	204	6.8%	213	6.8%	222	6.8%	231	6.8%
Agriculture	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Other (Fire, Temporary Meters and Other Uses)	22	0.9%	4	0.1%	4	0.1%	4	0.1%	5	0.2%	5	0.1%
Unaccounted Water Use	152	6.0%	176	6.0%	179	6.0%	188	6.0%	195	6.0%	203	6.0%
TOTAL (AFY)	2,513		2,936		2,986		3,125		3,253		3,380	
TOTAL (MGD)	2.24		2.62		2.67		2.79		2.90		3.02	

Calculations for Multi-Family Demand and Generation Rate

	2010		2015	
	AFY	%	AFY	%
Single Family	1,294	77%	1,525	77%
Multi-Family	384	23%	452	23%
TOTAL Residential (AFY)	1,678		1,977	
Total Residential Units ¹	8,372		8,616	
Multi-Family Units ¹	2,719		2,915	
Population Density (persons/unit) ¹	2.65		2.75	
Total Residential Demand (AFY/person)	0.076		0.083	
Multi-Family Demand (AFY/person)	0.053		0.056	
Total Residential Demand (GPCD)	67.5		74.5	
Total Residential Generation Rate (gpd/unit)	178.9		204.8	
Multi-Family Demand (GPCD)	47.6		50.3	
Multi-Family Generation Rate (gpd/unit)	126.1		138.4	

Note:

1 - Source: <http://www.dof.ca.gov/research/demographic/reports/estimates/e-5/2011-20/view.php>

2 - Calculated as the sum of Two to Four and Five Plus housing units.

MSASP Development

Water Use

1998 Proposed Development

Land Use	Measurement			Generation	
	sf	Units	Rooms	Rate	GPD
Office	1060000			0.1	106,000
Residential		415		186	77,190
Hotel			1000	200	200,000
Retail	60000			0.1	6,000
Restaurant	40000			2.8	111,112
Commercial	0			0.1	-
Total	1,160,000	415	1,000		500,302

2014 Proposed Development

Land Use	Measurement			Generation	
	sf	Units	Rooms	Rate	GPD
Office	1577235			0.1	157,724
Residential		1438		186	267,468
Hotel			326	200	65,200
Retail	85521			0.1	8,552
Restaurant	57014			2.8	158,373
Commercial	-335239			0.1	(33,524)
Total	1,384,531	1,438	326		623,793

Notes:

1. Water demand for 1998 from proposed development quantities.
2. Water demand for 2014 from Placeworks proposed development quantities.
3. Increased Water Demand from 1998 to 2014 developments = approx. 123,500 gpd.
4. Water Demand for 2014 proposed development includes all MSASP sites.
5. Restaurant generation rate from 1998 proposed development calculated from gpd/sf.
6. Restaurant sf in 2014 uses a 40/60 ratio relative to available retail space.

Source: City of Millbrae - developed by Kimley-Horn

City of Millbrae

Public Works - Engineering

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Service Area

The City of Millbrae is a residential community with a small commercial business sector located in north San Mateo County. Millbrae owns and operates its water utility, with a service area that includes Capuchino High School in San Bruno.

System

Profile

Area Size	3.2 square miles
Service Population	21,532
Number of Accounts	6,560
Number of SFPUC Connections	5
Connections To SFPUC Mains	Murchison, Greenhills, Park, 195 ECR, Helen
Avg. Day Demand (mgd)	2.31
Avg. Day Purchases From SFPUC (mgd)	2.28
% Demand Met With SFPUC Supplies	98.9%
Maximum Local Water Production (mgd)	0
Alternative Supply Sources	None
Interties With Other Agencies	Burlingame
Local Storage (mg)	2.36
Days of Storage	0.8 - 3 of 4 (Zones 1- 3) zones receive water from Harry Tracy Plant. Meets 8 hr. coverage for City's 3 upper zones. Planned projects will provide interties among zones to provide storage to Zone 4. These projects are pending completion of a Master Plan.

Summary

The City of Millbrae's only source of water is the SFPUC, delivered through 5 turnouts. Hetch Hetchy water purchased from the SFPUC meets all drinking water standards and is treated with fluoride.

Four storage tanks near the Harry Tracy WTP are filled early in the morning and are slowly drawn throughout the day to satisfy customer demand. Water filtered by the Harry Tracy Treatment Plant (San Andreas Reservoir) supplies water in the higher elevations, while the Crystal Springs #2 and #3 deliver water to the lower elevations.

The distribution system includes 11 pressure zones, 6 pumps (3 each at 2 stations), 5 storage tanks (only 4 are in operation), 568 hydrants, and 69.7 miles of water mains.

Water Supply and Demand

Supply by Source	Actual FY 09-10 (ccf)	Actual FY 10-11 (ccf)	Actual FY 11-12 (ccf)	Actual FY 12-13 (ccf)
San Francisco Water	1,094,867	1,075,971	1,034,254	1,113,147
Local Groundwater	0	0	0	0
Surface Water	0	0	0	0
Recycled Water	6,684	12,000	12,000	12,000
Other	0	0	0	0
Total	1,101,551	1,087,971	1,046,254	1,125,147
mgd equivalent	2.26	2.23	2.14	2.31

Demand by Sector

Residential	731,063	722,239	720,074	737,836
Commercial/Industrial	166,457	174,237	155,280	160,643
Other	48,922	52,766	50,359	54,788
Dedicated Irrigation	74,097	80,918	65,551	88,356
Unaccounted for	81,012	57,811	54,990	83,524
Total	1,101,551	1,087,971	1,046,254	1,125,147
mgd equivalent	2.26	2.23	2.14	2.31

Per Capita Use	Actual FY 09-10 (gpcpd)	Actual FY 10-11 (gpcpd)	Actual FY 11-12 (gpcpd)	Actual FY 12-13 (gpcpd)
Residential	70	69	69	70
Gross (less recycled water)	105	104	98	106

Facilities and Distribution

Storage Reservoirs

Designation	Type	Capacity (mg)
Storage Tank 1	Steel	1.00
Storage Tank 2	Steel	0.50
Storage Tank 3	Steel	0.50
Storage Tank 4	Steel	0.11
Storage Tank 5	Steel	0.25
Total		2.36

Interties

Name	No.	Diameter (in.)
Burlingame	8	6, 8, 10, 12

Appendix B – City of Millbrae Urban Water Management Plan 2010

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2010 Urban Water Management Plan

June 2011

Prepared for

City of Millbrae
621 Magnolia Avenue
Millbrae, CA 94030
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K/J Project No. 1188008*00

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Executive Summary

UWMP Requirements

The Urban Water Management Planning Act (the “Act,” contained in California Water Code, Division 6, Part 2.6, Section 10610) has required all urban water suppliers serving more than 3,000 customers or providing more than 3,000 acre-feet of water annually to develop an Urban Water Management Plan (UWMP) since 1984. The Act directs urban water suppliers to:

- Identify gaps between supply and demand through time (20-year analysis required)
- Define how demand will be met through time, in all hydrologic year types (normal, multiple dry, critical dry)
- Describe all current and future supply sources (imported surface water, recycled water, groundwater, desalinated water, etc.)
- Characterize potential water quality problems that could impact supply
- Discuss Demand Management Measures (water conservation programs)
- Summarize water shortage contingency planning
- Discuss coordination of water planning with appropriate agencies

Recent Changes to UWMP Requirements

Several recent changes have occurred to UWMP requirements including:

- Senate Bill (SB) 7 of Special Extended Session 7 (SBX7-7) which requires 20 percent reduction of per capita water demand by the year 2020 (“20% x 2020”) for which reporting starts with 2010 UWMPs. SBX7-7 requires:
 - Calculation of base gross water use in gallons per capita per day (gpcd) by dividing total volume of water entering the retail distribution system from San Francisco Public Utilities Commission (SFPUC) by the total population of the City of Millbrae (City) for a 10-year period.
 - Calculation of target reduction from base gpcd by 2020 using one of four methodologies
 1. 20 percent reduction from base (i.e., 80 percent of average gross water use in gpcd)
 2. Combination of state standards of 55 gpcd indoor residential + landscape use at 70 percent - 80 percent ETo + 10 percent reduction in commercial/industrial/ Institutional use

3. DWR 20x2020 hydrologic region target (San Francisco Bay region = 131 gpcd)
4. Option developed by Urban Stakeholder Committee in early 2011
 - Agencies must hold public hearing to explain how targets will be met (can be held as part of UWMP hearing)

An important element of the UWMP is to set targets and track progress toward decreasing daily per capita urban water use throughout the state.

SB 1087 (Florez) requires an UWMP to include projected water use for single-family and multi-family residential housing for lower income households as identified in the housing element of any city, county, or city and county in the service area of the supplier.

Key UWMP Conclusions for City of Millbrae

- As described in Section 2, City water consumption has been gradually declining overall, as well as on a per capita basis, since 2005. This is likely attributable to a number of factors including the recent economic downturn, the increased water rates, and the ready availability of assistance and incentives for water conservation.
- The City's population is predicted to grow to 26,700 people by 2035 pursuant to Association of Bay Area Government (ABAG) projections from its current population of 21,532 from the 2010 Census.
- Potable water demand to meet this population increase is projected to increase from 2,513 acre-feet per year (AFY) or 2.24 million gallons per day (mgd) in 2010 up to 3,379 AFY or 3.02 mgd which is within the City's SFPUC supply allocation goal of 3.15 mgd assuming that the City meets its 2020 SBX7-7 target of 113 gpcd.
- The City's base per capita demand is 110 gpcd and 2010 per capita demand is 104 gpcd which is believed to be artificially low based on the recent economic downturn and is expected to increase. Water conservation programs, as described in Section 7, will continue to be an important part of the City's efforts to meet the 2020 SBX7-7 target.
- The City has recently updated its Water Shortage Contingency Plan, summarized in Section 8, to reflect current City practices including ordinances that require voluntary and mandatory measures to reduce demands to meet available SFPUC supply. Tables in Section 6 describe single-dry and multiple-dry year demand conditions when SFPUC supplies are curtailed because of drought or seismic events.

Section 1: Introduction

1.1 Overview

This volume presents the Urban Water Management Plan 2010 (Plan) for the City of Millbrae (City) service area. This section describes the general purpose of the Plan, discusses Plan development, agency coordination, public participation, the Plan adoption, submittal and implementation. This section also provides general information about the City and service area characteristics. A list of acronyms and abbreviations is also provided.

1.2 Purpose

The Urban Water Management Planning Act (the “Act,” contained in California Water Code, Division 6, Part 2.6, Section 10610) has required all urban water suppliers serving more than 3,000 customers or providing more than 3,000 acre-feet of water annually to develop an Urban Water Management Plan (UWMP) since 1984. The required contents of the UWMP are set forth in the Act. The Act directs urban water suppliers to describe and evaluate existing and potentially available sources of water supply, projected population and future water demand, demand management measures, strategies for responding to water shortages, and other relevant information and programs. An important element of the UWMP is to set targets and track progress toward decreasing daily per capita urban water use throughout the state.

An UWMP is a planning tool that generally guides the actions of water management agencies. It provides managers and the public with a broad perspective on a number of water supply issues. It is not a substitute for project-specific planning documents, nor was it intended to be when mandated by the State Legislature. This Plan is considered a management tool, providing a framework for action, but not functioning as a detailed project development or action. It is important that this Plan be viewed as a long-term, general planning document, rather than as an exact blueprint for supply and demand management. Water management in California is not a matter of certainty, and planning projections may change in response to a number of factors. The Plan guides the City for ensuring there is a long term water supply for our community under various conditions and that water conserving goals will be met.

From this perspective, it is appropriate to look at the Plan as a general planning framework, not a specific action plan. It is an effort to generally answer a series of planning questions including:

- ▼ What are the potential sources of supply and what is the reasonable probable yield from them?
- ▼ What is the probable demand, given a reasonable set of assumptions about growth and implementation of good water management practices?
- ▼ How well do supply and demand figures match up, assuming that the various probable supplies will be pursued by the implementing agency?

Using these “framework” questions and resulting answers, the implementing agency will pursue feasible and cost-effective options and opportunities to meet demands. The City will explore

enhancing basic supplies from traditional sources such as the San Francisco Public Utilities Commission (SFPUC) which is a wholesale customer of the Bay Area, as well as other options. These may include the City's participation on regional efforts for recycling and desalination. Specific planning efforts will be undertaken in regard to the SFPUC water supply, involving detailed evaluations of how this option would fit into the overall supply/demand framework, how this option would affect customers. The objective of these more detailed evaluations would be to find the optimum mix of conservation and supply programs that ensure that the needs of the customers are met.

The California Urban Water Management Planning Act (Act) requires preparation of a plan that:

- ▼ Accomplishes water supply planning over a 20-year period in five year increments (the City is going beyond the requirements of the Act by developing a plan which spans 25 years).
- ▼ Identifies and quantifies adequate water supplies, including recycled water, for existing and future demands, in normal, single-dry, and multiple-dry years.
- ▼ Implements conservation and efficient use of urban water supplies.

In short, the Plan answers the question: *Will there be enough water for the City service area in the future years, and what mix of programs should be explored for making this water available?*

It is the stated goal of the City to deliver a reliable and high quality water supply for their customers, even during dry periods. Based on conservative water supply and demand assumptions over the next 25 years in combination with conservation of non-essential demand during certain dry years, the Plan successfully achieves this goal.

A checklist to ensure compliance of this Plan with the Act requirements is provided in Appendix A.

1.3 Implementation of the Plan

This subsection provides the cooperative framework within which the Plan will be implemented including the Plan development, agency coordination, public outreach, and resources maximization. This section also summarizes actions taken by the City to ensure agency coordination and public participation during the development of the 2010 UWMP. These actions are in compliance with the Act.

The City service area served approximately 21,532 customers and supplied approximately 2,343 acre-feet (AF) of water in 2010 (based on the fiscal year 2009-2010). The City receives 100 percent of its water supply from the SFPUC who is the primary wholesaler in the region.

1.3.1 Agency Coordination

Coordination with appropriate City departments and other public agencies has occurred with preparation of this UWMP. The City is essentially "built-out" with the exception of the Millbrae Station Area Specific Plan (MSASP), the area surrounding the Multi-Model Bay Area Rapid Transit (BART) / Caltrain / SamTrans terminal. The City has undertaken a highly public planning process to shape the future of the properties immediately surrounding this station. The MSASP

establishes policies that guide the necessary infrastructure improvements to support development and redevelopment.

In addition, plan review sessions with the Community Development Department, Fire Department, the Public Works Department, and Parks Department are conducted on a regularly scheduled basis when development applications or notification of projects are received. Focused inter-departmental meetings are conducted to review such projects and to assess the impacts including those associated with water supply issues.

The UWMP has been prepared under the direction of the Millbrae Public Works Director. The City also coordinated with the Bay Area Water Supply and Conservation Agency (BAWSCA) on the 2010 UWMP. Agency coordination for this Plan is summarized in Table 1-1.

Table 1-1
Agency Coordination Summary

	Participated in UWMP Development	Received Copy of Draft	Commented on Draft	Attended Public Meetings	Contacted for Assistance	Sent Notice of Intent to Adopt	Not Involved
BAWSCA	✓	✓			✓	✓	
Millbrae City Council	✓	✓		✓		✓	
City of Millbrae Public Works Department	✓	✓		✓		✓	
Public Library		✓				✓	
SFPUC		✓			✓	✓	
County of San Mateo		✓				✓	

1.3.2 Public Participation and Outreach

The California State Water Code recommends that urban water suppliers encourage the active involvement of diverse social, cultural and economic elements within the service area prior to and during UWMP preparation. The City has actively conducted public outreach during the development of the Plan and for notification of the Public Hearing. The following describes the outreach conducted with print and electronic media, through mailings to public organizations, special interest groups, and City commissions and committees.

The print media includes articles in the City's residential e-newsletter published on April 11, 2011, and placing messages on the utility bills for the April and May, 2011 billings. An article was also placed in the Millbrae Chamber of Commerce newsletter for the May 2011 edition. Electronic media included a notice on the local cable T.V. station, MCTV Channel 27 starting on April 13, 2011. The City's website, www.ci.millbrae.ca.us, had the Plan preparation and Public Hearing notification cross referenced on the Public Works home page, Sustainable Millbrae home page and the Water Conservation home page. The Public Hearing was also listed on the City's web calendar site.

The local newspaper, the San Mateo County Daily Journal, published a Plan preparation notice dated December 18, 2010 as well as public hearing notices for two consecutive weeks prior to the public hearing. Public Hearing notification started 60 days prior to the Public Hearing and for a total of four consecutive weeks. The published dates were April 7, 14, 21 and 28, 2011. As required, the Plan preparation and Public Hearing notifications were also sent to BAWSCA and the County of San Mateo Public Works Director

To meet the requirement of reaching diverse social, cultural and economic groups, the City sent out a notification for participation and on the Public Hearing to the following groups: Tuolumne River Trust, Library Branch Manager, School District Superintendent, Asian Community Network, and the Peninsula Chinese Business Association. In addition, City Committees and Commissions were sent the same letter and notice, including the Community Preservation Commission, Planning Commission, Cultural Arts Commission, Parks and Recreation Commission, Senior Advisory Commission, Downtown Process Committee, and the Youth Advisory members.

Table 1-2 presents a timeline for public participation during the development of the Plan. All of the outreach notices for the Plan preparation, participation and on the Public Hearing and the published Public Hearing notices are attached as Appendix B.

Table 1-2
Public Participation Timeline

Date	Event	Description
April 7, 14, 21 and 28, 2011	Public notification	Describe UWMP requirements and process
May 31, 2011	Public review and comment	Release Draft UWMP and solicit input
June 14, 2011	City Council Meeting	Presentation of Final Draft UWMP
June 14, 2011	Public Hearing	UWMP considered for adoption by the City Council

1.1.3 Plan Adoption, Submittal, and Implementation

The 2010 Draft UWMP was posted on the City's website on May 31, 2011 for public review and comment prior to the City Council's consideration of adopting the UWMP. The City Council will hold a noticed Public Hearing on the Draft UWMP on June 14, 2011. The Resolution that was adopted by the City Council at the June 14, 2011 hearing is included as Appendix C after adoption by the City and before submittal to California Department of Water Resources (DWR). Pursuant to California Water Code Section 10644(c), the City will submit the 2010 UWMP to DWR no later than 30 days after adoption; the City will also submit the UWMP to the California State and local library, and will make the UWMP available to public review during normal business hours. It will also be posted on the City's website.

The City will implement the 2010 UWMP in accordance with the Act. Implementation will occur through ongoing implementation and/or enforcement of the following:

- Water conservation programs
- Policies and programs of the General Plan
- Compliance with SB 610 (Water Supply Assessments)
- Water Supply Agreement with the SFPUC

1.1.4 Resources Maximization

Several documents were developed to enable the City to maximize the use of available resources, including the Water Shortage Contingency Plan (City, 2011). Section 8 of this Plan describes in detail the Water Shortage Contingency Plan by the City.

1.4 The City Service Area

1.4.1 Location

The City is located on the San Francisco Peninsula approximately fifteen miles south of downtown San Francisco, in the County of San Mateo.

The City encompasses an area of approximately 3.2 square miles and is bounded on the east by San Francisco International Airport and San Francisco Bay, on the south by the City of Burlingame, on the north by the City of San Bruno, and on the west by the San Francisco Bay/State of California Fish and Game Refuge which includes the SFPUC San Andreas Lake and Reservoir. The service area of the City, which is coterminous with the City limits, is shown on Figure 1-1.

The City purchases its water supply from the City and County of San Francisco's Regional Water System (RWS), operated by the SFPUC. The water supplied and purchased from the SFPUC is predominantly from the Sierra Nevada, delivered through the Hetch Hetchy aqueducts and is delivered to the City's distribution systems through five SFPUC turnouts. The water in the higher elevations of the City is stored in five storage tanks. Additional information regarding the City's potable distribution system is found below.

The City is responsible for the collection and safe disposal of wastewater generated within the City's service area. The wastewater collection, treatment and disposal system consists of separate sewer collection system, a Water Pollution Control Plant (WPCP), dechlorination facilities and a Joint Use Force Main (JUFM) for discharge into the San Francisco Bay. The collection and conveyance system consists of approximately 57 miles of various sized underground sewer pipes and three (3) sewage pumping transport facilities. The WPCP operates year round and has a designed dry weather capacity of 3.0 mgd, with a peak wet weather flow of 9.0 mgd. The facility provides primary - secondary treatment and disinfection prior to pumping into the JUFM and then discharge into the San Francisco Bay. The City is allowed to discharge up to an annual average of 3.0 mgd.

1.4.2 Description of the City of Millbrae Potable Water Distribution System

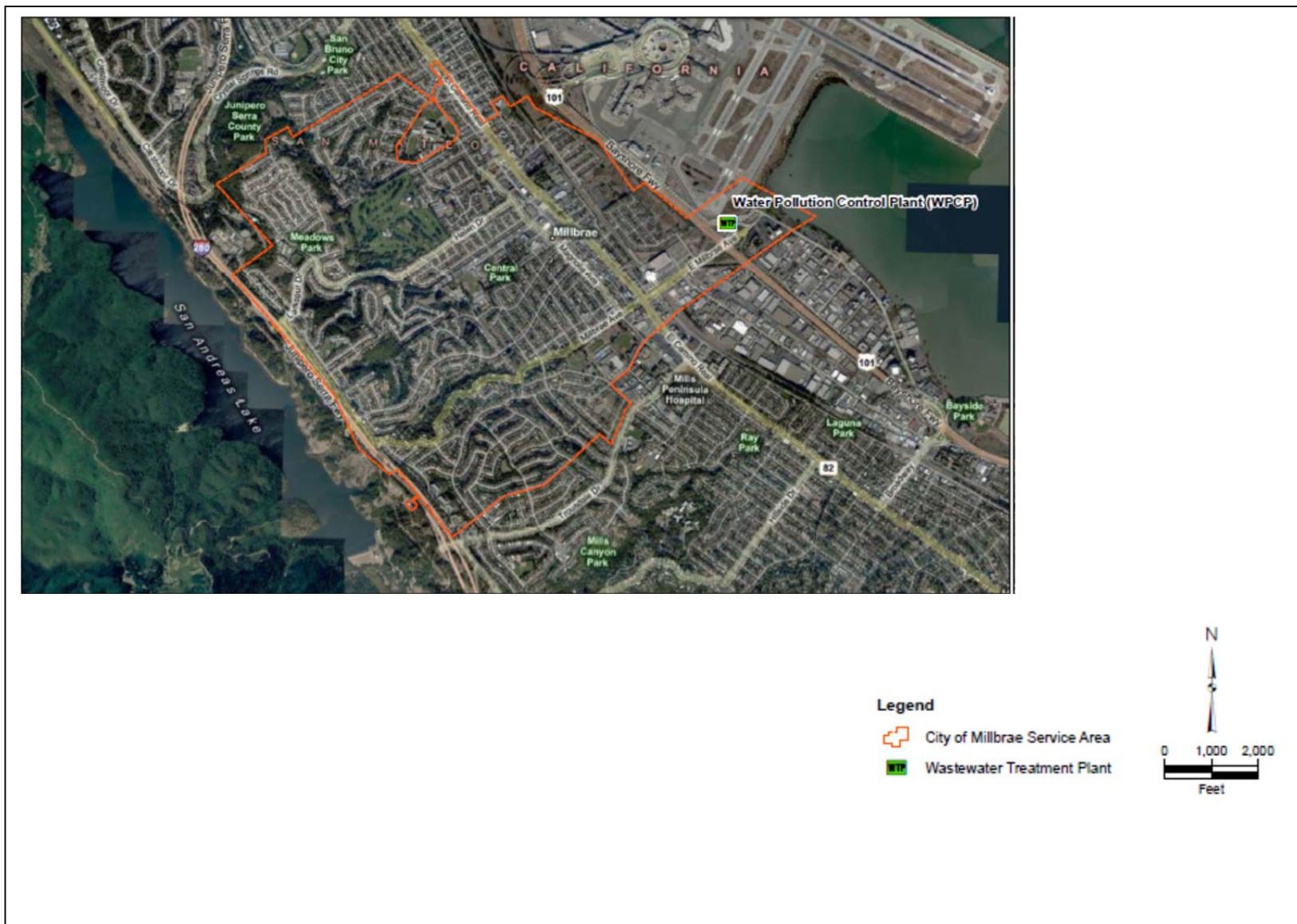
The City owns and operates approximately 70 miles of domestic water mains. Attached to these water mains are 450 fire hydrants, 1,500 valves, including hydrant and line valves, 11 pressure reducing stations, 6 water storage tanks, 2 water pump stations and approximately 6,504

service connections. The water distribution system boundaries are coterminous with the City limits. The City currently has 5 connections to the SFPUC's RWS.

The stored water is distributed throughout the water system to homes and businesses on demand. The storage tanks have 2.1 million gallons of water storage capacity.

The City is planning to start a new project in 2011 for a Citywide Water Distribution System Master Plan. As explained later in Section 3.5, the project will have several objectives to improve the system reliability and allow flexibility to distribute water to the entire City in case water supplies are disrupted.

Figure 1-1 Service Area



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1.5 Climate

Average temperatures in the City range from a low of 40°F in winter to mid 70's in late summer. The warmest temperatures generally occur in September and October. Rainfall at the San Francisco International Airport, which borders the City on the east, averages 20.03 inches per year and is confined to the "wet" season from late October to early May. Except for occasional light drizzles from thick marine stratus clouds, summers are nearly completely dry. Table 1-3 presents the region's annual average climate data. Standard Monthly Average data were generated from the Western Regional Climate Center data. Average Monthly Rainfall and Average Maximum Temperature data are based on records from July 1948 to December 2010 at the San Francisco International Airport Weather Station.

Table 1-3
Climate Data for the City of Millbrae Service Area

	Jan	Feb	Mar	Apr	May	Jun
Standard Monthly Average ETo (inches)⁽¹⁾	1.83	2.20	3.42	4.84	5.61	6.26
Average Rainfall (inches)⁽²⁾	4.40	3.61	2.80	1.37	0.39	0.11
Average Maximum Temperature (Fahrenheit)⁽²⁾	55.76	59.11	61.25	63.85	66.80	70.04

	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Standard Monthly Average ETo (inches)⁽¹⁾	6.47	6.22	4.84	3.66	2.36	1.83	49.54
Average Rainfall (inches)⁽²⁾	0.02	0.04	0.18	0.99	2.33	3.78	20.03
Average Maximum Temperature (Fahrenheit)⁽²⁾	71.41	72.13	73.47	70.18	62.94	56.36	65.30

Notes:

- (1) ETo (evapotranspiration) data from Station #96 Woodside based data records from October 1990 to January 1994, <http://wwwcimis.water.ca.gov/cimis/monthlyEToReport.do>
- (2) Average Monthly Rainfall and Average Maximum Temperature data gathered from long-term average data records from San Francisco Airport, CA Station number 7769 during period 1948-2010, <http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca7769>

1.6 Topography

The topography is relatively flat in the eastern part of the City from U.S. Highway 101 near the San Francisco International Airport and San Francisco Bay westerly across El Camino Real (State Route 82) through the center business district. From this point to the west, the City has hillsides with slopes that increase significantly. The ground rises from an approximate elevation of 40 feet at El Camino Real to an elevation of 500 feet in the vicinity of Interstate Highway 280, the western City boundary.

1.7 Potential Effects of Global Climate Change

A topic of growing concern for water planners and managers is climate change and the potential impacts it could have on California's future water supplies. Climate change models have predicted that potential effects from climatic changes will result in increased temperature, reduction in Sierra Nevada snowpack depth, early snow melt and a rise in sea level.

In June 2005, Governor Arnold Schwarzenegger issued Executive Order S-3-05, which requires biennial reports on climate change impacts in several areas, including water resources. The Climate Action Team (CAT) was formed in response to Executive Order S-3-05. To help unify analysis across topic areas, the CAT worked with scientists from the California Applications Program's California Climate Change Center to select a set of future climate projections to be used for analysis. For the 2008-2009 assessment of climate change impacts, the CAT selected six (6) different global climate change models, assuming two (2) different greenhouse gas emission levels (a high end and a low end), for a total of 12 scenarios. The results of the study indicated that climate change has already been observed, in that in the last 100 years, air temperatures have risen about 1 degree Fahrenheit, and there has been a documented greater variance in precipitation, with greater extremes both in terms of heavy flooding and severe droughts.

In July 2006, DWR issued "Progress on Incorporating Climate Change into Management of California's Water Resources," as required by Executive Order S-3-05. That report demonstrated how various analytical tools could be used to address issues related to climate change.

In the 2009 update of the DWR California Water Plan, multiple scenarios of future climate conditions are evaluated. These changing hydrological conditions could affect future planning efforts, which are typically based on historic conditions. The California Water Plan identifies the following probable impacts due to changes in temperature and precipitation:

- Decrease in snowpack, which is a major part of annual water storage, due to increasing winter temperatures.
- More winter runoff and less spring/summer runoff due to warmer temperatures.
- Greater extremes in flooding and droughts.
- Greater water demand for irrigation and landscape water due to increased temperatures and their impacts on plant water needs.

More specific discussions of climate change impact to the SFPUC's system and by extension to the City are discussed below.

Volume 1, Section 4 of the California Water Plan, "Preparing for an Uncertain Future," lists some potential impacts of global climate change, based on more than a decade of scientific studies on the subject:

- ▼ Could produce hydrologic conditions, variability, and extremes that are different from what current water systems were designed to manage
- ▼ May occur too rapidly to allow sufficient time and information to permit managers to respond appropriately

- ▼ May require special efforts or plans to protect against surprises or uncertainties

SFPUC has conducted an initial assessment of the potential effects of climate change on the Hetch Hetchy system. SFPUC is currently planning two additional analyses related to climate change impacts. Additional discussion of climate change impacts is presented below. As SFPUC completes these more specific assessments of the potential effects of climate change on surface water reliability, local water reliability, and water demands, the City can update its plans accordingly.

1.7.1 Climate Change Effects on Water Supply

The issue of climate change has become an important factor in water resources planning in the State, and is frequently being considered in urban water management planning purposes, though the extent and precise effects of climate change remain uncertain. As described by the SFPUC in its Final Water Supply Availability Study for the City and County of San Francisco, dated October 2009, there is 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, there is evidence that a warming trend occurred during the latter part of the 20th century and will likely 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, intensity and variability of precipitation, and an increased amount of precipitation falling as rain instead of as snow;
- Long-term changes in watershed vegetation and increased incidence of wildfires that could affect water quality;
- Sea level rise and an increase in saltwater intrusion;
- Increased water temperatures with accompanying potential adverse effects on some fisheries and water quality;
- Increases in evaporation and concomitant increased irrigation need; and
- Changes in urban and agricultural water demand.

According to the SFPUC (2009), other than the general trends listed above, there is no clear scientific consensus on exactly how climate change will quantitatively affect the State's water supplies, and current models of water systems in California generally do not reflect the potential effects of climate change.

Initial climate change modeling completed by the SFPUC indicates that about seven percent of runoff currently draining into Hetch Hetchy Reservoir will shift from the spring and summer seasons to the fall and winter seasons in the Hetch Hetchy basin by 2025. This percentage is within the current interannual variation in runoff and is within the range accounted for during

normal runoff forecasting and existing reservoir management practices. The predicted shift in runoff timing is similar to the results found by other researchers modeling water resource impacts in the Sierra Nevada due to warming trends associated with climate change.

The SFPUC has stated that based on this preliminary analysis, the potential impacts of climate change are not expected to affect the water supply available from the RWS or the overall operation of the RWS through 2030.

The SFPUC views assessment of the effects of climate change as an ongoing project requiring regular update to reflect improvements in climate science, atmospheric/ocean modeling, and human response to the threat of greenhouse gas emissions. To refine its climate change analysis and expand the range of climate parameters being evaluated, as well as expand the timeframes being considered, the SFPUC is currently undertaking two additional studies. The first utilizes a newly calibrated hydrologic model of the Hetch Hetchy watershed to explore sensitivities of inflow to different climate change scenarios involving changes in air temperature and precipitation. The second study will seek to utilize state-of-the-art climate modeling techniques in conjunction with water system modeling tools to more fully explore potential effects of climate change on the SFPUC water system as a whole. Both analyses will consider potential effects through the year 2100.

1.8 Other Demographic Factors

Water service in the City service area is provided to residential, commercial, industrial, institutional, recreational, and agricultural customers and for environmental and other uses, such as fire protection.

The City is essentially "built-out" with the exception of the following three planned developments:

- Site 1 of the MSASP, the area surrounding the Multi-Model BART / Caltrain / SamTrans terminal, is still considered proposed development and water use can be found in the City's Water Master Plan (Kennedy Jenks, 1998). The City has undertaken a highly public planning process to shape the future of the properties immediately surrounding this station. The MSASP establishes policies that guide the necessary infrastructure improvements to support development and redevelopment.
- Safeway is planning to tear down the current store and rebuild a new one. The water use is conservatively estimated to expand from approximately 3 AFY to 8 AFY (or 0.97 to 2.61 million gallons a year). This represents over a 200 percent increase in demand which may be reduced by implementation of Cal Green and lower flow fixtures required by current plumbing codes. The project will increase the sales floor area by 44 percent.
- The Clarion Hotel is planning to remodel and become an Aloft Hotel. No change in the number of rooms or expected water use is anticipated.

Although the City has seen some decline in demands, most likely linked to both a rate increase and the recent economic downturn, the City continues to see some development activity in the near-term.

1.9 List of Abbreviations and Acronyms

The following abbreviations and acronyms are used in this report.

20x2020 Plan	20x2020 Water Conservation Plan
AB	Assembly Bill
ABAG	Association of Bay Area Governments
Act	California Urban Water Management Planning Act
AF	Acre feet
AFY	Acre feet per year
AWWA	American Water Works Association
BART	Bay Area Rapid Transit
BAWSCA	Bay Area Water Supply and Conservation Agency
BMPs	Best Management Practices
CAT	Climate Action Team
CCF	One Hundred Cubic Feet
CCR	Consumer Confidence Report
CCWD	Contra Costa Water District
CEQA	California Environmental Quality Act
CII	Commercial, Industrial, and Institutional
City	City of Millbrae
COG	Council of Governments
CUWCC	California Urban Water Conservation Council
DBP	Disinfection by-products
DMM	Demand Management Measures
DOF	Department of Finance
DPH	Department of Public Health
DRIP	Drought Implementation Plan
DWR	California Department of Water Resources
EBMUD	East Bay Municipal Utility District
EOA	Eisenberg, Oliver & Associates, Inc.
EPA	Environmental Protection Agency
ERRP	San Francisco Regional Water System Emergency Response and Recovery Plan
ETo	Evapotranspiration
gpcd	gallons per capita per day
gpd	gallons per day
gpf	gallons per flush
gpm	gallons per minute
HAA	Haloacetic Acid
HCD	Housing and Community Development
HCF	Hundred Cubic Feet
HECW	High Efficiency Clothes Washer

HET	High Efficiency Toilet
ISA	Interim Supply Allocation
ISG	Interim Supply Guarantee
ISL	Interim Supply Limitation
JUFM	Joint Use Force Main
LOS	Level of Service
MCL	Maximum Contaminant Level
M&I	Municipal and Industrial
mgd	million gallons per day
MOU	Memorandum of Understanding Regarding Water Conservation in California
MSASP	Millbrae Station Area Specific Plan
NPDES	National Pollutant Discharge Elimination System
PEIR	Program Environmental Impact Report
PG&E	Pacific Gas & Electric
Plan	Urban Water Management Plan 2010
RHNA	Regional Housing Needs Allocation
RWQCB	Regional Water Quality Control Board
RWS	Regional Water System
SBX7-7	Senate Bill 7 of Special Extended Session 7
SCADA	Supervisory Control & Data Acquisition
SCVWD	Santa Clara Valley Water District
SFPUC	San Francisco Public Utilities Commission
THM	Trihalomethane
UAW	Unaccounted For Water
UACFG	Upper Alameda Creek Filter Gallery
UWMP	Urban Water Management Plan
WCIP	Water Conservation Implementation Plan
WPCP	Water Pollution Control Plant
WSA	Water Supply Agreement
WSCP	Water Shortage Contingency Plan
WSAP	Water Shortage Allocation Plan
WSIP	Water System Improvement Program
WSS	WaterSense Specification

Section 2: Water Use

2.1 Overview

This section describes historical and current water usage and the methodology used to project future demands within the City's service area. Water usage is divided into sectors such as residential, industrial, institutional, landscape, agricultural, and other purposes. To undertake the demand analysis, data compiled included existing land use, service area population projections, total water use, ongoing new project development and construction based on the information provided by the City and additional information based on the City's General Plan. Current actual demand served as the basis to calculate water unit factors for each land use type. Service area population projections were used to estimate future demand projections. The number of future new connections based on the land use type was projected out proportional to the population projections.

Several factors can affect demand projections, including:

- Land use revisions
- New regulations
- Increases in water rates
- Consumer choice
- Economic conditions
- Transportation needs
- Highway construction
- Environmental factors
- Conservation programs
- Plumbing codes

The foregoing factors affect the amount of water needed, as well as the timing of when it is needed. Past experience has indicated that the economy can be amongst the biggest factors in determining water demand projections. During an economic recession, there is a major downturn in development and a subsequent slowing of the projected demand for water. In this plan, no speculation is made about future plumbing codes or other regulatory changes. However, the projections do include water conservation, which is projected to reduce overall water demand by 5 percent by 2020, based on the reduction from 119 gpcd to 113 gpcd which is 95 percent of the applicable state hydrologic region target as set in the DWR "20x2020 Water Conservation Plan" (February, 2010) (20x2020 Plan). There have been, and continue to be, major efforts statewide to conserve water, which have been successful.

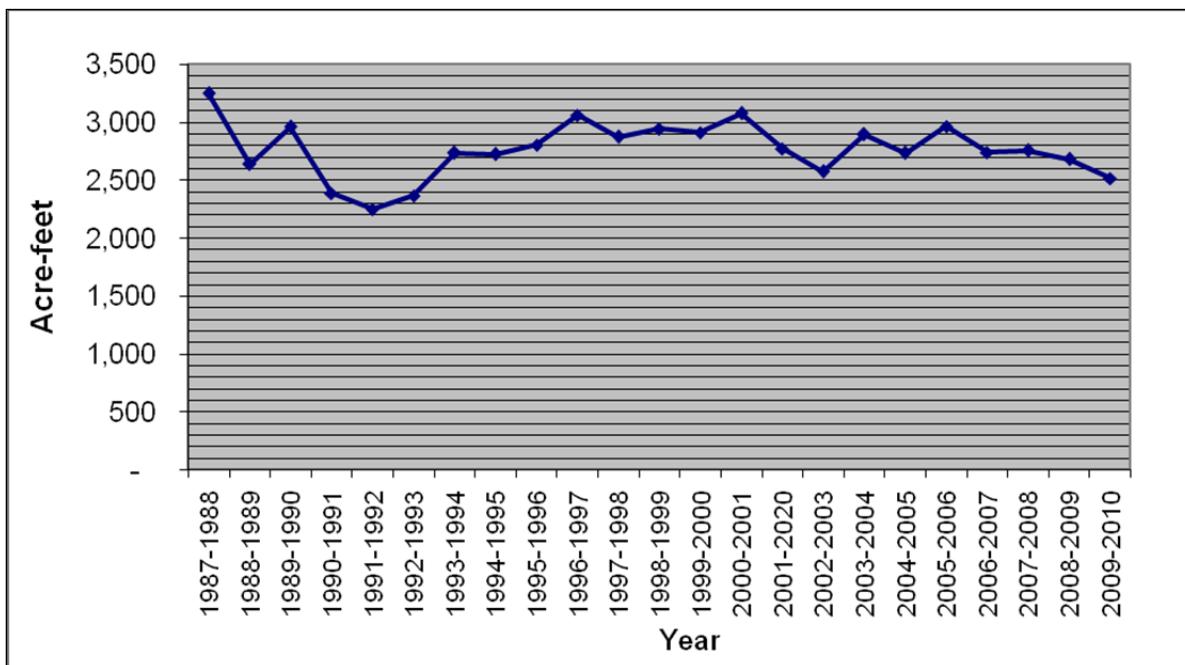
2.2 Historical Water Use

Predicting future water supply requires accurate historical water use patterns and water usage records. Both the economy and entitlement process (compliance with the California Environmental Quality Act [CEQA]) are key factors impacting growth in population and demand.

Figure 2-1 presents the historical production of water supply that the City purchased from the SFPUC since 1990 (data presented based on a fiscal year). The water serves a range of customer types including single family homes, multi-family homes, commercial, institutional/government, irrigation, and fire service. A more detailed breakdown by customer classification is found in Tables 2-2 and 2-3. The City has experienced some reduction in demand in recent years. For the fiscal year 2009-2010, total water purchased was 2,513 AFY

(2.24 mgd). This reduced consumption level is likely associated with the recent economic downturn, increased water rates and impact of water conservation programs, and may be expected to increase as the economic recovery continues.

Figure 2-1 Historical Water Purchases from SFPUC



2.3 Projected Water Use

2.3.1 Projections

The City maintains historical data for the SFPUC water purchases and customer usage based on metered data, and works closely with property owners and developers in its service area, to ensure it has an adequate water supply and the necessary infrastructure to provide water service for future development. Table 2-1 provides an estimate of population projections through 2035 in the City's service area which were derived from recent demographic information (ABAG, 2009). The 2010 population of 21,532 is based on the 2010 census data, while the population projections from 2015 through 2035 are based on population projections conducted in 2009 (ABAG, 2009). Table 2-2 summarizes the projected water demands through 2035, based on the most recent demand analysis conducted as part of the Plan preparation.

Table 2-3 presents the past, current and projected potable water delivery by customer type for the City service area.

Table 2-1
Current and Projected Population in the City's Service Area

2010 ⁽¹⁾	2015 ⁽²⁾	2020 ⁽²⁾	2025 ⁽²⁾	2030 ⁽²⁾	2035 ⁽²⁾
21,532	22,600	23,600	24,700	25,700	26,700

(1) Based on the 2010 census data for the City.

(2) Based on population projections in 2009 as provided by ABAG.

Table 2-2
Current and Projected Potable Water Demands for Each Customer Class

Projected Demand for Customer Class	2010	2015	2020	2025	2030	2035
Single family	1,294	1,525	1,551	1,624	1,689	1,755
Multi-family	384	452	460	481	501	520
Commercial	389	459	466	488	508	528
Industrial	0	0	0	0	0	0
Institutional / government	102	120	122	127	133	138
Landscape	170	200	204	213	222	231
Agriculture	0	0	0	0	0	0
Other (Fire, Temporary Meters and Other Uses)⁽¹⁾	22	4	4	4	5	5
UAW⁽²⁾	152	176	179	188	195	203
Total Potable Water Demand (AFY)⁽³⁾	2,513	2,936	2,987	3,126	3,253	3,379
Total Potable Water Demand (mgd)⁽³⁾	2.24	2.62	2.67	2.79	2.90	3.02

- (1) "Other" customer class in 2010 includes water uses for fire and temporary meters as well as other accounted uses of water in the system including for system flushing through hydrants, water main breaks, water used at turnouts and monitoring sites. "Other" customer class for future projections includes demand for fire and temporary meters.
- (2) UAW represents unaccounted for water, estimated at approximately 152 AFY in 2010, which is about 6 percent of total demand. UAW was assumed to be 6 percent of total demand for future projections from 2015 through 2035.
- (3) Total water demand projection in 2010 based on SFPUC deliveries. Future demands include conservation in compliance with SBX7-7.

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Table 2-3
Current and Projected Water Demands for Potable Supply

	2005				2010				2015				2020			
	metered		unmetered		metered		unmetered		metered		unmetered		metered		unmetered	
Water Use Sectors	# of accounts	Deliveries AFY														
Single family	5,672	1,459	0	0	5,716	1,294	0	0	6,000	1,525	0	0	6,265	1,551	0	0
Multi-family	258	410	0	0	263	384	0	0	276	452	0	0	288	460	0	0
Commercial	299	408	0	0	308	389	0	0	323	459	0	0	338	466	0	0
Industrial	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Institutional/government	41	90	0	0	44	102	0	0	46	120	0	0	48	122	0	0
Landscape	57	151	0	0	80	170	0	0	84	200	0	0	88	204	0	0
Agriculture	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other (Fire, Temp. Meters)⁽¹⁾	84	424	0	0	93	22	0	0	98	4	0	0	102	4	0	0
UAW⁽²⁾	-	24	-	-	-	152	-	-	176	-	-	-	179	-	-	-
Total	6,411	2,965	0	0	6,504	2,513	0	0	6,827	2,936	0	0	7,129	2,987	0	0

	2025				2030				2035							
	metered		unmetered		metered		unmetered		metered		unmetered					
Water Use Sectors	# of accounts	Deliveries AFY														
Single family	6,557	1,624	0	0	6,822	1,689	0	0	7,088	1,755	0	0	0	0	0	0
Multi-family	302	481	0	0	314	501	0	0	326	520	0	0	0	0	0	0
Commercial	353	488	0	0	368	508	0	0	382	528	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Institutional/government	50	127	0	0	53	133	0	0	55	138	0	0	0	0	0	0
Landscape	92	213	0	0	95	222	0	0	99	231	0	0	0	0	0	0
Agriculture	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other (Fire, Temp. Meters)⁽¹⁾	107	4	0	0	111	5	0	0	115	5	0	0	0	0	0	0
UAW⁽²⁾	-	188	-	-	-	195	-	-	-	203	-	-	-	-	-	-
Total	7,461	3,126	0	0	7,763	3,253	0	0	8,065	3,379	0	0	0	0	0	0

(1) "Other" includes water uses for fire and temporary meters as well as other accounted uses of water in the system flushing.

(2) UAW represents unaccounted for water, estimated approximately 152 AFY in 2010, which is about 6 percent of total demand. UAW was assumed to be 6 percent of total demand for future projections from 2015 through 2035.

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2.3.2 Methodology

The City, in coordination with BAWSCA, has various sources of data for the supply and demands that were used during the preparation of this Plan to address the future water demand. In addition to the data records that the City maintains, the City prepares the BAWSCA Annual Survey for each fiscal year to report on the amount of water purchased from the SFPUC and water customer consumption by customer classes.

Customer Classification

To divide the overall demand among customer classes as required by the UWMP, 2009-2010 fiscal year meter data were used to estimate percent representation across the various classes (Table 2-4). The percentage of each classification was calculated based on both connections and demand. It was found that single family residential represents 88 percent of the connections but only 55 percent of the water demand. Multi-family connections are estimated at 4 percent of total connections while water demand is 16 percent of the total demand. Commercial connections represent about 5 percent of the connections and 17 percent of total demand. Landscape irrigation is relatively small, accounting for about 1 percent of the connections and 7 percent of total demand.

As shown in Table 2-4, the City does not have industrial and agricultural customers. Other water demand is represented by a meter classification for fire service and temporary meters. While these classifications may not constitute consistent annual deliveries, the City historically has accounted for fire service meters; thus this class is included as part of the total demand. For the purposes of distributing overall demand among customer classifications, the percent distribution based on demand values was used. Based on the review of demand for recent years since 2005, the percent distribution of demand among customer classes remained nearly the same as the current data for the fiscal year 2009-2010. Therefore, the percent distribution of demand among customers under the current conditions was assumed to represent the demand distribution among customers for future demand projections, as shown in Table 2-3.

Future demand projections presented in Table 2-2 and 2-3 account for 6 percent UAW as a reasonable and conservative estimate for future projections. Currently, based on the 2009-2010 fiscal year data, the calculated UAW is at 6 percent of total demand, which is consistent with the future UAW assumed for future demand projections. The 6 percent UAW is as a reasonable and conservative future estimate. The City will continue to evaluate its UAW using AWWA Method M36. As supported by the recent data, the average of the data from the last five years (fiscal year 2005-2006 through fiscal year 2009-2010) shows 3 percent of UAW. UAW for each year was calculated based on the difference between the total water supply from the SFPUC and the total metered water deliveries to customers plus other accounted uses of water in the system including for system flushing through hydrants, water main breaks, water used at turnouts and monitoring sites.

Table 2-4
Regrouping for UWMP Classifications

Class	City's Meter Type	Percent representation based on 2009-2010 FY connections	Percent representation based on 2009-2010 FY demand
Single family	R-Single Family	88%	55%
Multi-family	A- Multi-Family	4.0%	16%
	D-Duplex		
Commercial	G Schools	4.7%	17%
	C Churches		
	B Commercial		
	1 Restaurants		
	2 Bars		
Industrial	N/A	0.0%	0.0%
Institutional/ Government	G Schools	0.7%	4.3%
	M City of Millbrae		
Landscape	I Irrigation	1.2%	7.3%
Agriculture	N/A	0.0%	0.0%
Other- temporary sales	F Fire Service	1.4%	0.2%
	T Temporary meter		

Although the percent allotted to each classification may change from the current meter data as the service area grows, review of the City metered data for recent years suggest that the percent demand by each class remained at about the same levels. Therefore, the percent demand distribution based on the 2009-2010 fiscal year data, as presented in Table 2-4 is assumed to be a reasonable estimate of the percent demand allotted to each customer type in the future (i.e., it was assumed that the percent demand by each customer class for future projections through 2035 remains the same as in 2010 conditions).

2.4 Water Conservation Act of 2009 (SBX7-7)

As described in SBX7-7, it is the intent of the California legislature to increase water use efficiency and the legislature has set a goal of a 20 percent per capita reduction in urban water use statewide by 2020. SBX7-7 requires that retail water suppliers comply with its requirements. Consistent with SBX7-7, the 2010 UWMP must provide an estimate of Base Daily Per Capita Water Use. This estimate utilizes information on population as well as base gross water use. For the purposes of this UWMP, future population was estimated as described in the previous section and past population was based on the 2000 and 2010 census data for the City as described below. Base gross water use is defined as the total volume of water, treated or untreated, entering the distribution system, excluding: recycled water; net volume of water placed into long-term storage; and water conveyed to another urban water supplier.

The UWMP Act allows urban water retailers to evaluate their Base Daily Per Capita Water use using a 10- or 15-year period. A 15-year base period within the range January 1, 1990 to December 31, 2010 is allowed if recycled water made up 10 percent or more of the 2008 retail water delivery. If recycled water did not make up 10 percent or more of the 2008 retail water delivery, then a retailer must use a 10-year base period within the range January 1, 1995 to December 31, 2010. For the City, recycled water did not make up 10 percent of the 2008 delivery and for this reason Base Daily Per Capita Water Use has been based on a 10-year period. In addition, urban retailers must report daily per capita water use for a 5-year period within the range January 1, 2003 to December 31, 2010. This 5-year base period is compared to the Target Based Daily Per Capita Water Use to determine the minimum water use reduction requirement.

Table 2-5 presents 10-year and 5-year base period data for the City. Tables 2-6 and 2-7 summarize the calculated Base Daily Per Capita Water Use 10-year range and 5-year range, respectively. Table 2-8 summarizes the gpcd for compliance with SBX7-7, which was based on information compiled and provided by BAWSCA. For the population data, available information by ABAG and census data were used to estimate population for each year between 1994 and 2010, based on the approach described below. Data used for population is consistent with the method found in Appendix A of methodologies for *Calculating Baseline and Compliance Urban Per Capita Water Use* from DWR.

- The 1995 population is based on the ABAG population projection conducted in 1995.
- The 2000 population is based on the 2000 census population data.
- The 2005 population is based on the ABAG population projection conducted in 2007.
- The 2008 population is based on the Department of Finance (DOF) 2008 data.
- The 2010 population is based on the 2010 census data.

For individual years with no population data, the known population data for the years listed were used to generate annual population estimates. The approach includes using a linear interpolation between the years that the population is known.

Deliveries (total water supply provided by SFPUC) and recycled water use were obtained from the City's records. The 2010 estimated water use (for the fiscal year 2009-2010) is 104 gpcd. The calculated 5-year baseline is 119 gpcd with a 2020 target of 113 gpcd based on an adjusted Option 3 method as described in greater detail below.

Table 2-5
Base Period Ranges

Base	Parameter	Value	Units
10-15 year base period	2008 total water deliveries ⁽¹⁾	2,753	AF
	2008 total volume of delivered recycled water	15	AF
	2008 recycled water as a percent of total deliveries	1	percent
	Number of years in base period	10	years
	Year beginning base period range	1999	
	Year ending base period range	2008	
5-year base period	Number of years in base period	5	years
	Year beginning base period range	2004	
	Year ending base period range	2008	

(1) Based on records of total water supply by the SFPUC, provided by the City.

Table 2-6
Base Daily Per Capita Water Use 10 to 15- Year Range

Base Period Year		Distribution System Population	Daily System Gross Water Use (mgd)	Annual Daily Per Capita Water Use (gpcd)
Sequence year	Fiscal Year			
Year 1	1995-1996	21,024	2.50	119
Year 2	1996-1997	20,947	2.73	130
Year 3	1997-1998	20,871	2.57	123
Year 4	1998-1999	20,794	2.63	126
Year 5	1999-2000	20,718	2.60	126
Year 6	2000-2001	20,754	2.74	132
Year 7	2001-2002	20,791	2.48	119
Year 8	2002-2003	20,827	2.30	110
Year 9	2003-2004	20,864	2.58	124
Year 10	2004-2005	20,900	2.44	117
Year 11	2005-2006	21,062	2.65	126
Year 12	2006-2007	21,225	2.45	115
Year 13	2007-2008	21,387	2.46	115
Year 14	2008-2009	21,460	2.39	112
Year 15	2009-2010	21,532	2.24	104
Base Daily Per Capita Water Use				123

Note: Shaded years represent data used to calculate the base daily per capita water based on a 10-year period.

Table 2-7
Base Daily Per Capita Water Use 5 Year Range

Base Period Year		Distribution System Population	Daily System Gross Water Use (mgd)	Annual Daily Per Capita Water Use (gpcd)
Sequence year	Fiscal Year			
Year 1	2003-2004	20,864	2.58	124
Year 2	2004-2005	20,900	2.44	117
Year 3	2005-2006	21,062	2.65	126
Year 4	2006-2007	21,225	2.45	115
Year 5	2007-2008	21,387	2.46	115
Base Daily Per Capita Water Use				119

In addition to calculating base gross water use, SBX7-7 requires that the City identify their demand reduction targets for year 2015 and 2020 by utilizing one of four options:

- Option 1. 80 percent of baseline gpcd water use (i.e., a 20 percent reduction).
- Option 2. The sum of the following performance standards: indoor residential use (provisional standard set at 55 gpcd); plus landscape use, including dedicated and residential meters or connections equivalent to the State Model Landscape Ordinance (80 percent ETo existing landscapes, 70 percent of ETo for future landscapes); plus 10 percent reduction in baseline commercial, industrial, institutional use by 2020.
- Option 3. 95 percent of the applicable state hydrologic region target as set in the DWR 20x2020 Plan.
- Option 4. Savings by Water Sector: this method identifies water savings obtained through identified practices and subtracts them from the base daily per capita water use value identified for the water supplier.

Option 2 and Option 4 were considered and not selected because they required data not currently being collected within the City service area. Option 1 was also considered as it is the simplest of the options provided and requires an 80 percent reduction in baseline per capita water use. Given the City's 10-year baseline of 123 gpcd, Option 1 requires a 2020 target of 98 gpcd.

For Option 3, the City service area is within the San Francisco Bay Hydrologic Region (#2) as defined by DWR and this hydrologic region has been assigned a 2020 water conservation goal of 131 gpcd per the DWR 20x2020 Plan. Therefore, in order to use Option 3, the City's daily per capita water use for the 5-year base period would have to be close to 95 percent of the 131 gpcd water conservation goal, or 124 gpcd for the San Francisco Bay Hydrologic Region. Since the City's 5-year base period of 119 gpcd is close to this regional target gpcd, the City selected Option 3 to comply with the SBX7-7 target.

In the case of the City, the 2020 target of 124 gpcd under Option 3 was adjusted further to achieve a minimum water use reduction requirement pursuant to Section 10608.22 of the California Water Code, based on the method found in Appendix A of methodologies for

Calculating Baseline and Compliance Urban Per Capita Water Use from DWR. The following steps were taken to further adjust the target that resulted in reducing the 2020 Option 3 target from 124 gpcd to 113 gpcd:

- Baseline daily per capita water use was calculated using a continuous 5-year period ending no earlier than December 31, 2007 and no later than December 31, 2010. This calculation resulted in a maximum base daily per capita water use of 119 gpcd, for the 5-year ending with the fiscal year 2007-2008, as shown in Table 2-7.
- The result from the first step (119 gpcd) was multiplied by 0.95, which results in a value of 113 gpcd. Based on the DWR Guideline per Section 10608.22, the 2020 per capita water use target cannot exceed this value (unless the City's 5-year baseline per capita water use is 100 gpcd or less, but this is not applicable to the City).
- Since the 2020 target of 124 gpcd (based on Option 3) is greater than the 113 gpcd, the 2020 target was reduced to the 113 gpcd (95 percent of the 5-year base daily per capita water use of 119 gpcd).

The baseline and 2020 target are presented in Table 2-8. It is anticipated that the City water use will be in compliance with its targets using the GPCD approach (i.e. meeting its target gpcd) as specified by SBX7-7. However, the City may revise its water use target in its 2015 Plan update.

Table 2-8
Baseline, Target, and Current gpcd

Basis	gpcd
Baseline	119
Target 2020	113
Interim 2015 Target	116
Current 2010	104

2.5 Other Factors Affecting Water Usage

Major factors that affect water usage are the economy, weather, and water conservation. As described earlier, the economic downturn has apparently played a part in the recent demand reduction. In addition, when the weather is hot and dry, water usage increases. The amount of increase varies according to the number of consecutive years of hot, dry weather and the conservation activities imposed. During cool-wet years, historical water usage has decreased to reflect less water usage for external landscaping. Water conservation measures employed by the Water Resources & Conservation Program within the City's service area have a direct long-term effect on water usage. Furthermore, the City implemented a rate structure in 2009 that also has contributed to reduction in water usage.

2.5.1 Conservation Effects on Water Usage

In recent years, water conservation has become an increasingly important factor in water supply planning in California. The California plumbing code has instituted requirements for new

construction that mandate the installation of ultra low-flow toilets and low-flow showerheads. Recently adopted water conservation measures by the City will increase water savings and reduce demand along with the implementation of additional programs with BAWSCA. The ordinances adopted by the City, including the Indoor Water Ordinance adopted in 2010 (Appendix F) and the Green Building Ordinance adopted in 2011 (Appendix K), are anticipated to reduce water consumption through the increased plumbing code requirements.

Residential, commercial, and industrial usage can be expected to decrease as a result of the implementation of more aggressive water conservation practices including the active distribution of water saving devices, providing high efficiency toilets (HET) and high efficiency clothes washers (HEW) rebates, and the recently adopted ordinances. As previously discussed, the greatest opportunity for conservation is in developing greater efficiency and reduction in single family and multi-family uses especially in the City's service area where the single family and multi-family water demand accounts for a significant portion of the total demand.

2.6 Low Income Projected Water Demands

Senate Bill 1087 requires that water use projections of a UWMP include the projected water use for single-family and multi-family residential housing for lower income households as identified in the housing element of any city, or county general plan in the service area of the supplier.

Housing elements rely on the Regional Housing Needs Allocation (RHNA) generated by the State Department of Housing and Community Development (HCD) to allocate the regional need for housing to the regional Council of Governments (COG) (or a HCD for cities and counties not covered by a COG) for incorporation into housing element updates. Before the housing element is due, the HCD determines the total regional housing need for the next planning period for each region in the state and allocates that need. The COGs then allocate to each local jurisdiction its "fair share" of the RHNA, broken down by income categories; very low, low, moderate, and above moderate, over the housing element's planning period.

Based on the ABAG housing needs determination in 2001, as presented in the City's Housing Element adopted on January 24, 2006, the City's "fair share" of the regional housing need is a total of 343 units, between January 1999 and June 2007, with the following income breakdown:

- Very Low – 67 units (19.5 percent of total)
- Low – 32 units (9.3 percent of total)

It was assumed that the low income households can be allocated into single-family and multi-family residential housing units in the City service area. However, it is not possible to project water use for lower income households by this specific land use category. To remain consistent with the intent of the SB1087 legislation and also to comply with the UWMP Act, the City intends to identify those water use projections for very low- and low- residential income households based on the income category, and classification percentage listed above. Calculated demand projections are shown in Table 2-9. Updates to the UWMP requires that entities separately calculate water demands for lower income households in this Plan, and Table 2-9 reflects the City's best effort to meet this requirement.

Note that ABAG analysis for the RHNA was done in 2001 for the planning period from January 1999 to June 2007. The 2015 UWMP will be updated with the next available RHNA planning cycle and allocation of low income category percentages.

As reported in the City's General Plan, Housing Element for the City, it has been generally the policy of the City to maintain a balance of household types to meet the housing needs of its diverse population. The City will not deny or conditionally approve of water services, or reduce the amount of services applied for by a proposed development that includes housing units affordable to lower income households. Family housing, especially for low- and moderate-income families, is a need in the City.

Table 2-9
Low Income Water Demand (AFY)

	2010	2015	2020	2025	2030	2035
Demand ⁽¹⁾	2,513	2,936	2,987	3,126	3,253	3,379
Very low income ⁽²⁾	490	573	582	610	634	659
Low income ⁽²⁾	234	273	278	291	302	314
Total	724	846	860	900	937	973

(1) Demand from Table 2-2

(2) Water demand is calculated by multiplying the estimated percentage of very low and low income household numbers by the corresponding total demand from Table 2-1. The estimated percentage of lower income household numbers are based on the ABAG Housing Needs Determination for the City of Millbrae in June 2001, as reported in the City of Millbrae General Plan, Housing Element (<http://www.ci.millbrae.ca.us/Modules>ShowDocument.aspx?documentid=157>)

Section 3: Water Resources

3.1 Overview

This section describes the City's existing and planned sources of water supply for the 25-year period covered by the Plan. Table 3-1 is a summary of the existing and planned water supply sources discussed in this Section, from the present (2010) to 2035 in five-year increments. Sections 3.2 through 3.4 provide details of the water supplies summarized in Table 3-1.

The term "dry" is used throughout this section and in subsequent sections concerning water resources and reliability as a measure of supply availability. As used in this Plan, dry years are those years when supplies are the lowest, which occurs primarily when precipitation is lower than the long-term average precipitation. The impact of low precipitation in a given year on a particular supply may differ based on how low the precipitation is, or whether the year follows a high-precipitation year or another low-precipitation year. When the term "dry" is used in this Plan, statewide drought conditions are assumed, affecting both local and the Sierra Nevada SFPUC supplies at the same time.

Table 3-1
Summary of Current and Planned Water Supplies (AFY)

Water Supply Sources	2010	2015	2020	2025	2030	2035
SFPUC Potable Water Purchases ⁽¹⁾	2,513	3,530	3,530	3,530	3,530	3,530
City of Millbrae Groundwater ⁽²⁾	0	0	0	0	0	0
Transfer/Exchanges In or Out ⁽²⁾	0	0	0	0	0	0
Desalination ⁽²⁾	0	0	0	0	0	0
City of Millbrae Recycled Water ⁽³⁾	15	28	28	28	28	28
Total Supply (AFY)	2,528	3,558	3,558	3,558	3,558	3,558
Total Supply (mgd)	2.26	3.18	3.18	3.18	3.18	3.18

(1) Based on the Water Supply Agreement between the City of Millbrae and the SFPUC.
(2) The City currently does not have water supply through groundwater pumping, transfers/exchanges, or desalination (see Sections 3.3, 3.4, and 3.6).
(3) Based on City data for WPCP use.

3.2 SFPUC Supply

3.2.1 SFPUC Regional Water System

The City receives water solely from the City and SFPUC RWS. This supply is predominantly from the Sierra Nevada, delivered through the Hetch Hetchy aqueducts, but also includes treated water produced by the SFPUC from its local watersheds and facilities in Alameda and San Mateo Counties as shown on Figure 3-1.

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

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

Figure 3-1 SFPUC Regional Water System



3.2.2 SFPUC Water System Improvement Program

In order to enhance the ability of the SFPUC water supply system to meet identified service goals for water quality, seismic reliability, delivery reliability, and water supply, the SFPUC has undertaken the Water System Improvement Program (WSIP), approved October 31, 2008. The WSIP will deliver capital improvements aimed at enhancing the SFPUC's ability to meet its water service mission of providing high quality water to customers in a reliable, affordable and environmentally sustainable manner. Many of the water supply and reliability projects evaluated in the WSIP were originally put forth in the SFPUC's Water Supply Master Plan (SFPUC, 2000).

The WSIP has the following components and goals and is expected to be completed by December 2015:

- Maintain high water quality
- Reduce vulnerability to earthquakes
- Increase delivery reliability and improve ability to maintain the system
- Meet customer water needs in non-drought and drought periods
- Enhance sustainability in all system activities

- Achieve a cost effective, fully operational system

A Program Environmental Impact Report (PEIR) was prepared in accordance with the CCEQA for the WSIP. The PEIR, certified in 2008, analyzed the broad environmental effects of the projects in the WSIP at a program level and the water supply impacts of various alternative supplies at a project level. Individual WSIP projects are also undergoing individual project specific environmental review as required.

In approving the WSIP, the SFPUC adopted a Phased WSIP Variant for water supply that was analyzed in the PEIR. This Phased WSIP Variant established a mid-term water supply planning milestone in 2018 when the SFPUC would reevaluate water demands through 2030. At the same meeting, the SFPUC also imposed the Interim Supply Limitation (ISL) which limits the volume of water that the member agencies and San Francisco can collectively purchase from RWS to 265 mgd until at least 2018. Although the Phased WSIP Variant included a mid-term water supply planning milestone, it did include full implementation of all proposed WSIP facility improvement projects to insure that the public health, seismic safety, and delivery reliability goals were achieved as soon as possible.

As of July 1, 2010, the WSIP was 27 percent complete overall with the planning and design work over 90 percent complete. The WSIP is scheduled to be completed in December 2015.

Figure 3-2 SFPUC Water System Improvement Program



3.2.3 2009 Water Supply Agreement

The business relationship between San Francisco 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 (Appendix D). The new WSA replaced the Settlement Agreement and Master Water Sales Contract that expired June 2009. The WSA addresses the rate-making methodology used by the SFPUC in setting wholesale water rates for its Wholesale Customers in addition to addressing water supply and water shortages for the RWS. The WSA has a 25 year term.

In terms of water supply, the WSA provides for a 184 mgd (expressed on an annual average basis) "Supply Assurance" to the SFPUC's Wholesale Customers, 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 this agency's Individual Water Sales Contract with San Francisco.

The Water Shortage Allocation Plan between the SFPUC, the City and its Wholesale Customers, adopted as part of the WSA in July 2009, addresses shortages of up to 20 percent 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 percent or less. The WSA also anticipated a Tier 2 Shortage Plan adopted by the Wholesale Customers which would allocate the available water from the RWS among the Wholesale Customers.

3.2.4 City of Millbrae Water Supply Contract

In 2009, the City, along with 25 other Bay Area water suppliers, signed a WSA with San Francisco, supplemented by an individual Water Supply Contract (Appendix D). These contracts, which expire in 25 years, provide for a 184 mgd (expressed on an annual average basis) Supply Assurance to the SFPUC's Wholesale Customers collectively. The City's Individual Supply Guarantee (ISG) is 3.15 mgd. Although the WSA and accompanying Water Supply Contract, both presented in Appendix D, expire in 2034, the Supply Assurance (which quantifies San Francisco's obligation to supply water to its individual Wholesale Customers) survives their expiration and continues indefinitely, as noted above in Section 3.2.3.

Table 3-2 summarizes the City's historical water purchases from the SFPUC for the fiscal years from 1988-1990 to the current 2009-2010. As mentioned above, currently the City's ISG is 3.15 mgd, or approximately 3,530 AFY.

The City tracks its water supply volumes through its SFPUC billings. The City receives bills from SFPUC on a monthly basis. The bills detail how much water has been delivered to the City through its turnouts where water from the San Francisco Water Department is metered.

Table 3-2
City of Millbrae Potable Water Purchase History (AFY)

Fiscal Year	Potable Water Purchase (AFY) ⁽¹⁾	Fiscal Year	Potable Water Purchase (AFY) ⁽¹⁾
1988-1989	2,637	1999-2000	2,912
1989-1990	2,957	2000-2001	3,074
1990-1991	2,385	2001-2002	2,772
1991-1992	2,247	2002-2003	2,573
1992-1993	2,364	2003-2004	2,894
1993-1994	2,736	2004-2005	2,734
1994-1995	2,725	2005-2006	2,965
1995-1996	2,804	2006-2007	2,742
1996-1997	3,061	2007-2008	2,753
1997-1998	2,875	2008-2009	2,681
1998-1999	2,945	2009-2010	2,513

(1) City of Millbrae's ISG from the SFPUC's Hetch Hetchy regional water system is 3.15 mgd or 3,530 AFY.

3.2.5 Description of BAWSCA and Its Role

BAWSCA was created on May 27, 2003 to represent the interests of the 26 agencies that include cities, water districts, a water company, and a university, in Alameda, Santa Clara and San Mateo counties that purchase water on a wholesale basis from the RWS. Collectively, the BAWSCA agencies are referred to as the Wholesale Customers.

BAWSCA is the only entity that has the authority to directly represent the needs of the Wholesale Customers that depend on the RWS. Through BAWSCA, the Wholesale Customers can work with the SFPUC on an equal basis to ensure the RWS is rehabilitated and maintained and to collectively and efficiently meet local responsibilities.

BAWSCA has the authority to coordinate water conservation, supply and recycling activities for its agencies; acquire water and make it available to other agencies on a wholesale basis; finance projects, including improvements to the regional water system; and build facilities jointly with other local public agencies or on its own to carry out the agency's purposes.

Compliance with the Act lies with each agency that delivers water to its customers. In this instance, the responsibility for completing an UWMP lies with the individual BAWSCA member agencies. BAWSCA's role in the development of the 2010 UWMP updates is to work closely with its member agencies and the SFPUC to maintain consistency among the multiple documents being developed.

3.3 Groundwater

The City relies solely on SFPUC to provide water to the residents and does not use groundwater as a supplemental water supply. In the mid-1990's, staff investigated the potential to drill some of its own wells, but found no source of potential underground water within the

City's boundaries. Groundwater is not available or considered in the City's near term water supply planning in this Plan.

3.4 Transfers, Exchanges, and Groundwater Banking Programs

The City relies solely on SFPUC for potable water supply. The City does not use any groundwater, as mentioned above, and does not participate in groundwater banking programs or projects at this time.

3.4.1 Transfer and Exchange Opportunities

At this time and in the near future, the City is not considering transfer or exchange opportunities. However, water transfers from willing sellers as part of the Hetch Hetchy water system are theoretically possible, as further described below.

The adopted WSIP discusses the opportunities for the SFPUC to purchase water for its wholesale and retail operations. The discussion includes purchasing additional Tuolumne River water and water from willing sellers located geographically south of the Delta who possess water rights or contractual entitlements to water diverted from the Delta. SFPUC is currently negotiating a dry year water transfer in the Tuolumne River from Modesto Irrigation District and Turlock Irrigation District which would yield an average of 2 mgd (2,240 AFY) over the design drought (SFPUC, 2010)

Securing water from willing sellers inside and outside of the Hetch Hetchy water system and wheeling the water through the transmission system is also theoretically possible and permitted by the SFPUC WSA. Within the SFPUC system, it is possible to transfer water entitlements among contracting agencies during drought periods when rationing is in effect. The Water Shortage Allocation Plan adopted by SFPUC and its Wholesale Customers provides for voluntary transfers of water among Wholesale Customers during periods when mandatory rationing is in effect on the San Francisco regional water system. Some Wholesale Customers have the capacity to draw more heavily on local groundwater (or other surface water supplies, such as the State Water Project) during dry years and thus may be willing to agree to transfer some portion of their San Francisco ISG to other customers willing to pay for this back up supply.

As described previously in this section, BAWSCA has statutory authority to assist the Wholesale Customers of the Hetch Hetchy regional water system to plan for and acquire supplemental water supplies. Transfer opportunities may become easier to initiate under the auspices of this agency.

3.5 Planned Water Supply Project and Programs

As mentioned above, the City is planning to start a project in 2011 for a Citywide Water Distribution System Master Plan. The goals of the Water Distribution Plan System Master include:

- Review the current water distribution system, including its telemetry controls and instrumentation

- Review, develop or upgrade the City's existing hydraulic simulation model
- Make recommendations leading to short-range or long-range capital improvement projects that will improve system reliability and allow flexibility to distribute water to the entire City in case either water source is disrupted.

Previously, the City has conducted a rate study to increase rates to help fund the Capital Improvement Project Program. The last rate increase was implemented in 2009. The City's current and future rates are presented in Appendix E. The City has developed a list of projects for the next ten years, starting with fiscal year 2002-2003. The timeline is outlined in the October 2002 Water and Sewer Rates and Capital Facilities Charges Study by Brown and Caldwell. These types of projects are water distribution improvements, storage tank upgrades, pump station upgrades and water main replacements.

The City is currently designing several water distribution improvement projects. Within the MSASP, the City of Millbrae plans to extend a waterline from Adrian Road, under U.S. Highway 101, to the Clarion Hotel site to construct a looped system for the redevelopment. This will provide supply and fire protection reliability to our customers. The water demand would increase due to the redevelopment of the MSASP. Several restaurants and light industrial businesses will occupy the MSASP.

The City also plans to conduct upgrades to the five City-owned storage tanks. The upgrades will consist of seismically retrofitting the storage tanks to protect them from failure during a seismic event. There would be no increase in water supply or demand due to this project; however, it would result in improving the reliability of supplying water for the customers and for fire protection.

Other projects the City will be conducting are the design and construction of several pressure reducing valve stations to increase water flows to various parts of the City. This would allow the affected parts of the City to receive higher flows to provide them to meet fire flow requirements.

The City has upgraded both pump stations by replacing all pumps, motors, can and barrels and controllers. The upgrades would provide water efficiently to all customers. The upgrades would not increase the demand on the water supply, but the pump stations would deliver water at very efficient rates with less energy consumption.

The most important projects that would increase the reliability and increase supply of water would be the water main replacement projects. Several portions of the water system are approximately 50 years old, with the potential of leakage. By replacing these water mains, the City would expect to have fewer leaks and provide better flow of water through new pipes. Over the course of 10 years, the City will conduct water main replacements each year, as necessary.

In addition to the City's water distribution improvements, SFPUC is implementing the WSIP program described earlier in Section 3.2.2

3.6 Development of Desalination

The California UWMP Act requires a discussion of potential opportunities for use of desalinated water (Water Code Section 10631[i]). The development of desalination by the City as an option for additional water supply is not considered feasible due to high capital and operations costs,

and siting constraints. Currently, the City does not use local fresh or brackish groundwater as a source of water supply, and future sources through groundwater or seawater desalination is not applicable as a near-term water supply for the City. In this section, potential desalination opportunities for the City are discussed as part of the regional efforts undertaken to develop desalination projects.

3.6.1 Opportunities for Groundwater and Seawater Desalination

Since the City relies solely on SFPUC to provide water to the residents, it is neither practical nor economically feasible for the City to implement a seawater desalination program on its own and the City has no current plans to pursue seawater desalination. Therefore, seawater desalinated supplies are not included in the supply summaries in this Plan. However, the City could benefit from opportunities for desalination in the region and would participate in any assessments which may develop.

The SFPUC, Santa Clara Valley Water District (SCVWD), East Bay Municipal Utility District (EBMUD), Contra Costa Water District (CCWD), and the Zone 7 Water Agency are jointly exploring the development of regional desalination facilities that could benefit the 5.4 million Bay Area residents and businesses served by these agencies. The project is called the Bay Area Regional Desalination Project and information about the project can be found at www.Regionaldesal.com. In March 2008, a consultant was selected to build a pilot desalination plant in Contra Costa County to test pretreatment options, membrane performance, and approaches for brine disposal. DWR awarded the agencies a \$1 million grant to help fund the pilot project. A site for the full-scale desalination plant has not yet been selected. While the agencies have made significant progress over the past seven years and continue to advance the planning for a regional desalination facility, consideration of desalination as a local supply for the City is only appropriate using desalinated water from a regional facility to meet a future supply need.

Recycled water is not considered as a near-term water supply for the City and not considered as part of the future water supply planning, mainly because of funding constraints at this time.

Section 4: Recycled Water

4.1 Overview

This section of the Plan describes the existing and future recycled water opportunities available to the City service area. The description includes estimates of potential supply and demand for 2010 to 2035 in five year increments, as well as the City's efforts in the development of a water recycling plan, opportunities to expand the use of recycled water, proposed incentives and optimization plan.

4.2 Recycled Water History

The City's Public Works Department has been instrumental in the development of a water recycling plan. The City's first recycled water project occurred in 1994 when a cooperative agreement with the Department of Transportation (Caltrans) was executed for the use of recycled water for landscape irrigation of Caltrans property in the vicinity of the City's WPCP and for US Highway 101 landscape medians. The WPCP recycled water system is designed to provide disinfected secondary treated "restricted" use recycled water that is suited for this purpose. From 1996 to 2006, "restricted" use recycled water included the US Highway 101 Millbrae Avenue Interchange Improvement Project. An irrigation system for "restricted" water use was incorporated into the project.

In 1996, a truck loading facility was constructed to provide recycled water for roadway dust control and construction soil compaction that was used throughout the construction of the BART station described below.

In 1997, the City adopted the MSASP for retail, commercial, and residential development in the vicinity of the Millbrae BART/Caltrain Stations. These projects are in close proximity to the WPCP, and thus facilitate distribution of recycled water to these locations. While the BART/Caltrain station construction is complete, the remaining development in the MSASP development is expected to occur over the next 10 - 20 years. Delivery of recycled water to the MSASP development would entail construction of a new "unrestricted" Title 22 tertiary recycled water system at the WPCP. Plans for construction of this system were not incorporated in the Millbrae Public Works Department Capital Improvement Program and, in addition, funding for the system has not yet been secured. Currently recycled water is used for in-house WPCP use and is described in Section 4.4 Current and Projected Recycled Water Use.

Long-range goals over the next 5 to 10 years may include branching out from the BART and MSASP development to include identified users with high demand that can be economically served.

In addition to local activities, the City participates in the regional recycled water planning, as a member of the Northern California Chapter of WaterReuse Association, which helps implement water recycling in California.

4.3 Potential Sources of Recycled Wastewater

The City is responsible for the collection and safe disposal of wastewater generated within the City's service area. The City's wastewater collection, treatment and disposal system consists of separate sewer collection system, the WPCP, and JUFM for discharge into the San Francisco Bay. The City is allowed to discharge up to an annual average of 3.0 mgd.

4.3.1 Existing and Planned Wastewater Treatment Facilities

4.3.1.1 Existing Facilities

The City owns and operates the WPCP, located on a 4.1-acre site located in the northeast cloverleaf of the Highway 101-Millbrae Avenue Interchange. The collection system and WPCP serve approximately 21,500 residents and the businesses in the City. The collection and conveyance system consists of approximately 57 miles of various sized underground sewer pipes and three sewage pumping transport facilities.

Most of the City's sanitary sewer collection system is designed to operate under gravity flow conditions. The City conducted a study to identify segments of sewer pipelines with flat and even negative slopes, from the topographic field survey of the invert elevations of the pipelines and manholes of the collection system (Kennedy/Jenks, 1999).

4.3.1.2 Water Pollution Control Plant

The WPCP facility operates year round and has a designed dry weather capacity of 3.0 mgd, with a peak wet weather flow of 9.0 mgd. The facility provides primary and secondary treatment and disinfection prior to pumping into the JUFM and then dechlorination and discharge into the San Francisco Bay. Wastewater treatment processes at the City's WPCP include grinding, primary sedimentation in rectangular tanks, biological activated sludge treatment, secondary clarification, disinfection with sodium hypochlorite, and final effluent skimming. Electricity is generated for on-site using methane gas produced by sludge digesters. A standby generator supplies power to the City's WPCP systems during power outages.

The WPCP produces a limited amount of "restricted" use disinfected secondary recycled water. Disinfected secondary effluent is re-chlorinated and pumped to a 5,000 gallon polyethylene recycled storage tank.

Table 4-1 shows current and future projected wastewater volume being treated at the WPCP. Currently, the total volume of wastewater treated is being discharged to San Francisco Bay (Table 4-2). The City's WPCP is allowed to discharge up to an annual average of 3.0 mgd under the waste discharge requirements as set forth by the San Francisco Bay Region Water Quality Control Board (RWQCB) Order No. R2-2008-0071 and National Pollutant Discharge Elimination System (NPDES) No. CA0037532. This Order was adopted by the RWQCB in August 2008, became effective in October 2008, and will expire on September 30, 2013.

Table 4-1
Wastewater Collection and Treatment

Facility Name	Existing (2010)⁽¹⁾	2015⁽²⁾	2020⁽²⁾	2025⁽²⁾	2030⁽²⁾	2035⁽²⁾
Water Pollution Control Plant (WPCP)	1,736	2,097	2,140	2,259	2,367	2,475
Total (AFY)	1,736	2,097	2,140	2,259	2,367	2,475
Total (mgd)	1.55	1.87	1.91	2.02	2.11	2.21

(1) Current wastewater flow for 2010 is based on the average of wastewater flow data provided by the City.

(2) Wastewater flow for 2035 represents anticipated wastewater flow from new development adjusted for recent reduced flows.

With conservation measures that the City is implementing and at full build-out, a wastewater flow estimates of approximately 2.21 mgd (2,475 AFY) will be treated in year 2035. This accounts for approximately 0.66 mgd (739 AFY) increase from the proposed redevelopment projects in the City, such as the MSASP, as described further in Section 4.3.2.

Table 4-2
Non-Recycled Disposal of Wastewater

Facility Name	Method of Disposal	Treatment Level	Wastewater Discharge and Use					
			2010	2015	2020	2025	2030	2035
Water Pollution Control Plant (WPCP) ⁽¹⁾	Discharge to the San Francisco Bay	Disinfected, Primary-Secondary	1,721	2,069	2,112	2,231	2,339	2,447
		Total (AFY)	1,721	2,069	2,112	2,231	2,339	2,447
		Total (mgd)	1.54	1.85	1.89	1.99	2.09	2.19

(1) With the exception of 28 AFY of projected use of recycled water as a source of supply in this Plan, the projected treated wastewater flow from the WPCP will be discharged to the San Francisco Bay.

4.3.2 Planned Improvements and Expansions Facilities

Currently, the WPCP has a designed dry weather capacity of 3.0 mgd (Table 4-3). The City's WPCP is in construction for a series of capital projects that will include improvements to the collection system, addition of treatment plant flow equalization, process facilities renovation, a new aeration system, and a new operations center. Currently, the projects do not include an increase in the treatment capacity. The improvement projects are estimated to be completed in 2012.

As mentioned earlier, the MSASP, the area surrounding the Multi-Model BART / Caltrain / SamTrans terminal, is still considered proposed development. The City previously completed a study to evaluate the ability of the existing sewer collection system facilities to convey dry weather and wet weather flows before and after the planned redevelopment of the MSASP. A hydraulic model of the City's backbone sewer collection system was developed to predict the performance of the collection system under dry and wet weather flow for both existing and future conditions. Assuming the redevelopment projects are completed, it was estimated that the dry weather flows would increase by about 0.66 mgd (739 AFY) to a total of about 2.21 mgd (2,475 AFY). Based on the evaluation of the WPCP, a wet weather capacity of 9.0 mgd (10,080 AFY) is found a reasonable cost-effective goal of expansion for the WPCP. This is mainly because of the capacity of the JUFM for effluent disposal to San Francisco Bay. Increasing the capacity of the JUFM beyond 9.0 mgd would be very expensive and not cost-effective.

The City maintenance staff performs routine flushing and cleaning of the sanitary sewer collection system. Attention is focused on the pipelines with negative slopes and areas of known overflows where grits and solids settle. Flushing and cleaning is performed prior to the beginning of each wet weather season.

Table 4-3
Summary of Available Source Water Flows

Source	Current Capacity	Projected Capacity	Projected to be Available for Non-Potable Use
Water Pollution Control Plant (WPCP) (AFY)	3,360	3.360	28 ⁽¹⁾
Water Pollution Control Plant (WPCP) (mgd)	3.0 ⁽²⁾	3.0 ⁽²⁾	0.03
Total (AFY)			28
Total (mgd)			0.03

(1) The "restricted" disinfected secondary use of recycled water for WPCP use.
(2) The WPCP has a current capacity of 3.0 mgd (dry weather capacity) with a peak wet weather flow of 9.0 mgd. The City is currently allowed to discharge to San Francisco Bay up to an annual average of 3.0 mgd. Based on the evaluation of the WPCP by the City, a capacity of 9.0 mgd is found a reasonable cost-effective goal of expansion for the WPCP. However, the City's projects do not include an increase in treatment capacity or addition of tertiary treatment at this time. Non-potable use is limited WPCP use.

4.4 Current and Projected Recycled Water Use

In this section, current recycled water use is discussed, and potential recycled water users within the City's service area are identified as determined from the City's previous analysis completed as presented in the 2005 UWMP.

4.4.1 Current Recycled Water Use

Currently, recycled water is used by the City for non-potable uses, such as for primarily in-house WPCP washdown activities (Table 4-4). Recycled water is used for the WPCP operations such as for hosing down the facility and clarifier, and cleaning out tanks and bar screens. Recycled water is used for dust control at the WPCP and was used during construction of the new Public Works Operations Facility, which was completed in 2011, and is located in the area of the WPCP. The volume of restricted secondary recycled water was 28 AF during the 2008-2009 fiscal year and 15 AF during the 2009-2010 fiscal year (Table 4-4). The irrigation demand in the City is currently supplied by potable water purchased from the SFPUC. Currently, the City has about 80 landscape customers, which consists of about 1 percent of the total customer accounts and 7 percent of the total demand. During the 2009-2010 fiscal year, total landscape irrigation demand was approximately 170 AF.

Table 4-4
Actual Recycled Water Uses

Type of Use	Treatment Level	Actual 2010 Use (AF)
Landscape	Disinfected secondary	0
WPCP Use	Disinfected secondary	15
Total		15

4.4.2 Potential Recycled Water Use

The City has been exploring the feasibility of utilizing reclaimed water for irrigation purposes for landscape, golf course, construction activities (e.g., dust control during construction and demolition projects), public open spaces, and industrial/commercial uses. The Millbrae Water Recycling Study completed by Eisenberg, Olivieri & Associates, Inc. (EOA) (1995) evaluated the possibilities of increased uses for recycled water in the City. The study included three major tasks to: 1) determine the potential recycled water demand for existing and future facilities, 2) evaluate the existing WPCP recycled water system and recycled water quality to determine needed treatment improvements to serve identified potential users, and 3) develop conceptual recycled water pipeline alignments to users, and a financial analysis to estimate the financial obligation of various sized water recycling programs for decision maker planning.

Results of this study were reported in the City's 2005 UWMP. At that time, future projections for 2010 included recycled water use ranging from 0.3 mgd to 1.0 mgd on a monthly basis. The upper range of recycled water was anticipated to occur during summer months when landscape irrigation demand increases and less recycled water use was projected to be used during winter months. Overall, the previous projections suggested increase in recycled water use over time with 2030 projections ranging from 1.0 mgd to 4.0 mgd on a monthly basis, which can exceed the average dry weather wastewater flow. It was estimated that the majority of recycled water

would be used for landscape irrigation, accounting for 50 percent to 80 percent of total recycled water. Other identified recycled water users included school and playing fields, construction activities, golf courses, public open spaces, and industrial/commercial, each with a projected use of 5 percent to 15 percent of the total recycled water.

Given the recent water demand patterns that suggest overall decreasing water demand in the City and the overall economic downturn in recent years, the City has revisited the previous projections of recycled water use as part of this Plan preparation. For the purpose of this Plan, no recycled water is projected to be delivered by the City except for use by the WPCP (Table 4-5). This is considered to be a reasonable assessment at this time, mainly because expansion of recycled water treatment and distribution facilities is not considered cost-effective and financially feasible option for the City. The City will continue to evaluate the potential future use of the recycled water as a non-potable supply. However, future implementation of cost-effective, viable recycled water projects by the City can be considered only with future grant funding availability.

Table 4-5
Projected Potential Future Use of Recycled Water

Type of Use	Treatment Level	Potential Use (AF)				
		2010⁽¹⁾	2015	2020	2025	2030
Landscape	Disinfected secondary	0	0	0	0	0
WPCP Use	Disinfected secondary	15	28	28	28	28
Landscape	Disinfected tertiary	0	0	0	0	0
Golf Course/School Fields	Disinfected tertiary	0	0	0	0	0
School Fields	Disinfected tertiary	0	0	0	0	0
Industrial/commercial	Disinfected tertiary	0	0	0	0	0
Construction	Disinfected secondary	0	0	0	0	0
Total (AFY)		15	28	28	28	28
Total (mgd)		0.01	0.03	0.03	0.03	0.03

(1) The "restricted" recycled water used for fiscal year 2009-2010 (15 AFY) was lower than normal due to construction of the new WPCP but has resumed to normal use of 28 AFY.

4.4.3 Recycled Water Comparison

The City's 2005 UWMP projected significant volume of recycled water use in the future, compared to a small amount of recycled water used that was actually used in 2010 (Table 4-6). While the 2005 projection for recycled water use in 2010 was substantially higher, the City indicated the economic constraints for the implementation in the 2005 UWMP, including the capital cost, and operations and maintenance. As explained earlier in this section, given the decreasing water use demand in the City service area and the economic downturn experienced in recent years, water supply purchased by the SFPUC was sufficient to meet the City's demand. Currently, the City's demand is within the City's ISG per its WSA with the SFPUC.

Table 4-6
Recycled Water Uses - 2005 Projection Compared with 2010 Actual

User Type	2005 Projection for 2010 ⁽¹⁾	2010 Actual Use ⁽²⁾
Landscape/ Construction Activities/Public Open Spaces/Commercial	336 -1,120	15
Total (AFY)	336 - 1,120	15
Total (mgd)	0.3 - 1.0	0.01

(1) Calculated based on the projected recycled water use ranging from 0.3 mgd to 1.0 mgd on a monthly basis, as reported in the City's 2005 UWMP, Table E.

(2) Based on the recycled water use during the fiscal year 2009-2010.

4.5 Methods to Encourage Recycled Water Use

To encourage the use of recycled water, the City is considering the establishment of the use of recycled water in the conditions of project approval within the City. The Indoor Water Conservation Ordinance (Appendix F), recently adopted by the City in 2010, applies to new developments and remodels of a certain size. Based on the ordinance, all new construction and applicable additions and remodels will have, at the minimum, fixtures that comply with the efficiency standards. Some of these standards may apply to recycled water use in the future, as summarized below:

- Automatic vehicle wash facilities to require 50 percent or more of water used from recycled on site.
- Separate meter to be installed for outdoor landscaping for area 5,000 square feet or larger. This applies to residential, multifamily, commercial or non-residential development.

The City has previously evaluated opportunities and made efforts to expand the use of recycled water, as reported in the 2005 UWMP. Among the future opportunities, the MSASP, which is still considered to be proposed development project, provides a good opportunity to market and expand recycled water use. Engineering studies completed have determined the infrastructure needed to support this development. Infrastructure improvements have been scheduled in phases to take place as development unfolds. A tertiary recycled water system can be initiated if funding is available in the future.

Currently the City distributes "restricted" disinfected secondary recycled water for use by the WPCP. Based on the economic considerations, the City's estimated capital cost for the required 1.0 mgd tertiary (unrestricted recycled water) system at the WPCP is \$3.3 million dollars (2011\$). Additional cost estimates include \$7.4 million dollars (2011\$) for the required storage and distribution system to reach identified recycled water users and annual operation and maintenance costs of about \$100,000 (2011\$). For the City, the development of recycled water (unrestricted tertiary) as a long-term water supply option is not considered a feasible, cost-effective option at this time due to funding constraints, high capital and operations costs for recycled water delivery. The City may reevaluate the potential use of recycled water use in coming years, depending on funding availability.

Table 4-7 summarizes actions taken by the City to promote recycled water use and other actions that can be taken in the future to encourage the use of recycled water as a viable water source. While the City has made efforts to promote the use of recycled water, it is not possible to determine specifically how much recycled water will result from the City's ongoing efforts. Funding availability, securing grant funding, and financial incentives are among the factors that will play a big role in the future implementation of recycled water use. State and federal funding, if available, could offset the cost imposed during project construction which typically makes the project cost-prohibitive. Obtaining funding can also help build community support for a project because it results in reduced taxpayer contribution.

Table 4-7
Methods to Encourage Recycled Water Use

Actions	Use Projected to Result From This Action (AF)				
	2010	2015	2020	2025	2030
Maintain Existing Recycled Water Use	15	28	28	28	28
Local Planning	0	0	0	0	0
Public Outreach	0	0	0	0	0
State and Federal Funding	0	0	0	0	0
Financial Incentives	0	0	0	0	0
Total (AFY)	15	28	28	28	28
Total (mgd)	0.01	0.03	0.03	0.03	0.03

4.6 Optimization Plan

Recycled water source is not anticipated to be available, mainly due to the high cost of recycled water treatment, storage and distribution facilities at this time (and the relative availability of potable water).

In a movement towards sustainability, the City has recently adopted new ordinances for indoor water conservation and green building found in Appendices F and K that include improved water use efficiency and implementation of green building concepts. Other near term plans includes:

- Developing a Citywide Water Distribution System Master Plan in the near future. This plan will review the current water distribution system, develop or upgrade the City's existing hydraulic simulation model, and make recommendations leading to short-range or long-range capital improvement projects that will improve system reliability and allow flexibility to distribute water to the entire City in case either water source is disrupted. This effort will identify the potential irrigation and other non-potable water customers.
- Evaluating the potential for private public partnership.
- Identify and pursue Federal and State grants and funding options for recycled water.

Section 5: Water Quality

5.1 Overview

This section provides a general description of the water quality of the City's water supplies. A discussion of potential water quality impacts on the reliability of these supplies is also provided.

The quality of any natural water is dynamic in nature. During periods of intense rainfall or snowmelt, routes of surface water movement are changed; new constituents are mobilized that are often dependent on local land use and enter the water while other constituents are diluted or eliminated. The quality of water changes over the course of a year. The quality of water received by individual customers may vary over the course of a day, a week, or a year.

Water quality regulations also change. This is the result of the discovery of new contaminants, changing understanding of the health effects of previously known as well as new contaminants, development of new analytical technology, and the introduction of new treatment technology. All water purveyors are subject to drinking water standards set by the Federal Environmental Protection Agency (EPA) and the California Department of Public Health (DPH).

The City is required to have available to its customers the annual Millbrae Water Quality Report, i.e., Consumer Confidence Report (CCR). An annual report is provided to all residents who receive water from the City. The 2009 report is also available at the Millbrae Public Works Department or can be viewed at the City of Millbrae website (<http://www.ci.millbrae.ca.us/Modules>ShowDocument.aspx?documentid=2223>). That report includes detailed information about the results of quality testing of the water supplied during the preceding year (City of Millbrae, 2009). Copies of the City's 2008 and 2009 Water Quality Reports are provided in Appendix G.

5.2 Water Quality

The SFPUC is the sole provider of drinking water to the City, thus the City is largely dependent on the water quality delivered to its customers from the SFPUC, as further described in the following Section 5.3. The City relies on SFPUC to conduct a watershed sanitary survey every five years to assure that watershed management practices adequately protect our water source from contamination.

In addition to SFPUC's active and continuous water quality monitoring and surveys, the City conducts a comprehensive water quality assurance program. The City collects and reports over 40 samples a month throughout the system to regularly monitor water clarity and the level of disinfectant. City staff sends samples to a state certified laboratory to test for coliform bacteria. Other samples are collected periodically to check for levels of lead and copper, disinfection by-products such as trihalomethanes (THMs) and Haloacetic acids (HAAs), and general physical components as required by state and federal regulations. The City received a waiver for asbestos sampling.

The City has installed water quality monitoring stations at all five main points of entry to the City's system. The City also monitors other key points in the distribution system such as tank

sites and pump stations. These sites are monitored by a computerized SCADA (Supervisory Control and Data Acquisition) system that provides the City's water division managers with continuous automated water quality information.

The City flushes dead-end main pipes located throughout the City on a quarterly schedule to ensure water mains remain clean. City operations crew flush mains that may develop stagnant water due to slow circulation. This program assures the water delivered meets regulatory requirements.

The City also manages a capital replacement program which progressively and continually ensures water main pipes and lines remain in top order. In 2009, the City replaced approximately 5,300 feet of water mains during the 2009 Water Main Project in the Marina Vista Neighborhood. The City has plans to construct an enclosure around the Larkspur Water Pump Station and recoat the interior and exterior of the water storage tanks. These programs assure that water is reliably delivered in the highest quality possible.

The City has ongoing water quality projects, such as installing new waterlines at dead-ends to prevent stagnant water. Other water quality improvements may be added over the next 10 years. Other yearly projects, related to water quality, are to buy additional C12/Turbidity Instruments and Hydrant Flushing Equipment. To protect water quality, the City conducted a Terrorist Vulnerability Study. The Madera Pump Station enclosure was completed in 2009 and Larkspur Pump Station enclosure is being designed with an anticipated construction completion date of summer 2012. The City is currently performing seismic analysis of Skyline Tanks 1 and 2 as well as Helen Tank. All water tanks will be coated in the next 2 years.

In the 2009 CCR, the City reported that all samples have tested negative for coliform and that the City had zero violations related to any maximum contaminant level (MCL). Results from the 2009 report tests validate that the City continues to be well within all required standards, including lead and copper (Appendix G).

5.3 SFPUC Supply Water Quality

The SFPUC actively and aggressively protects the natural water resources entrusted to its care. An annual report on watershed for the Hetch Hetchy supply is prepared to evaluate the sanitary conditions, water quality, and potential contamination sources. The report also presents performance results of watershed management activities implemented by the SFPUC and its partner agencies, such as the National Park Service, to reduce or eliminate the potential contamination sources. The 2009 Hetch Hetchy sanitary survey concludes that very low levels of contaminants associated with wildlife and human activities exist in the watersheds. The SFPUC also conducts sanitary surveys of the local Alameda and Peninsula watersheds every five years. The potential contamination sources identified in the latest survey in 2005 are similar to the upcountry watershed. These survey reports are available at the San Francisco District office of the California DPH.

The SFPUC watersheds deliver high-quality water. The majority of water supply originates in the upper Tuolumne River watershed high in the Sierra Nevada, remote from human development and pollution. This pristine water is protected in pipes and tunnels as it is conveyed to the Bay Area, requiring only primary disinfection and pH adjustments to control corrosion in the pipelines. In conjunction with the SFPUC's stringent disinfection treatment practice, extensive

bacteriological-quality monitoring, and high operational standards, the USEPA and State have approved the use of this drinking water source without requiring filtration at a treatment plant. In other words, the source is so clean and well protected that the SFPUC is not required to filter water from the Hetch Hetchy Reservoir. However, local water from the Alameda and Peninsula watershed requires filtration to meet drinking water quality requirements. The filtered and treated water from the local watersheds is blended with Hetch Hetchy water, and most customers receive water from a blended source.

The SFPUC's Water Quality Division regularly collects and tests water samples from reservoirs and designated sampling points throughout the system to ensure that the SFPUC's water meets or exceeds federal and state drinking water standards. In 2009, SFPUC staff conducted 58,595 drinking water tests in the transmission and distribution systems. This monitoring effort is in addition to the extensive treatment process control monitoring performed by certified and knowledgeable treatment plant staff. The SFPUC also has online instruments providing continuous water quality monitoring at numerous locations.

As discussed earlier, the City is completely dependent on the water quality from SFPUC. If the water quality from SFPUC does not comply with standard health regulations, the City has devised an emergency water plan to ensure the safety of its residents. In addition to the emergency water plan, the City uses the "Suburban Customer Water Supply Emergency Operations and Notification Plan" provided by the SFPUC to ensure the integrity of the water quality in the system. Depending on the scenario listed, the plan directs the City to isolate its system by closing the turnouts located on El Camino Real, Park Boulevard and Murchison Avenue and use the water in the City's storage tanks. Notification of residents to decrease water demand would also occur. The plan is very thorough and the City will comply with its provisions.

5.4 Water Quality Impacts on Reliability

The SFPUC does not anticipate that future water quality issues will alter the SFPUC's current water management strategies or reduce supply reliability, as shown in Table 5-1. The constituents of concern within these sources are either treated prior to distribution or the source is considered high quality water. SFPUC will continue to rely on these high quality water sources and no degradation of water quality is anticipated.

Table 5-1
Current and Projected Water Supply Changes Due to Water Quality-
Percentage Change

Water source	2010	2015	2020	2025	2030
SFPUC	0%	0%	0%	0%	0%

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Section 6: Reliability Planning

6.1 Overview

The Act requires urban water suppliers to assess water supply reliability that compares total projected water used with the expected water supply over the next 20 years in five year increments (the City is going beyond the requirements of the Act by developing a plan which spans 25 years). The Act also requires an assessment for a single dry year and multiple-dry years. This section presents the reliability assessment for the City's service area.

It is the stated goal of the City to deliver a reliable and high quality water supply for their customers, even during dry periods. Based on conservative water supply and demand assumptions over the next 25 years in combination with conservation of non-essential demand during certain dry years, the Plan successfully achieves this goal.

6.2 Reliability of Water Supplies

The City's water supply is dependent on the SFPUC system's ability to deliver water during droughts. Discussion of the SFPUC's water supply system reliability herein is consistent with the SFPUC's description in its 2010 UWMP. Reliability is defined by the amount and frequency of water delivery reductions (deficiencies) required to balance customer demands with available supplies in droughts. The SFPUC plans its water deliveries anticipating that a drought more severe than the worst drought ever experienced may occur (SFPUC, 2010).

The SFPUC's RWS watershed supplies have experienced infrequent, short-term outages as a result of water quality events. Because Hetch Hetchy water is not filtered, it is subject to strict water standards set by the California DPH. However, as a result of weather events, turbidity levels can exceed standards requiring the Hetch Hetchy supply to be diverted to local storage (in the case of short-term events) or shut off (in the case of longer-term events) until turbidity levels drop to within standards. During these periods, the SFPUC's entire supply comes from the Sunol Valley Water Treatment Plant and the Harry Tracy Water Treatment Plant, both of which are supplied by local reservoirs. Table 6-1 summarizes the legal, environmental, water quality, climatic, and other factors potentially resulting in inconsistency of supply.

The total amount of water the SFPUC has available to deliver to retail and wholesale customers during a defined period of time is dependent on several factors, including the amount of water that is available to San Francisco from natural runoff and reservoir storage and the amount of that water that must be released from the SFPUC's system for commitments to purposes other than customer deliveries (e.g., releases below Hetch Hetchy reservoirs to meet Raker Act and instream flow release requirements and future releases from Lower Crystal Springs and Calaveras Reservoirs for fishery purposes).

Table 6-1
Factors Resulting in Inconsistency of Supply

Water supply sources	Specific source name, if any	Legal	Environmental	Water quality	Climatic	Additional information
SFPUC⁽¹⁾	Regional Water System		✓		✓	Water is monitored per California DPH regulatory requirements and the water meets all MCLs.

(1) Consistent with the SFPUC 2010 UWMP description of the factors potentially affecting consistency of supplies.

6.3 SFPUC 2018 Interim Supply Limitation

As part of its adoption of the WSIP in October 2008, as discussed in Section 3, the SFPUC adopted a water supply element, the ISL, to limit sales from RWS watersheds to an average annual sale of 265 mgd through 2018. The Wholesale Customers' collective allocation under the ISL is 184 mgd and San Francisco's allocation is 81 mgd. Although the Wholesale Customers did not agree to the ISL, the WSA provides a framework for administering the ISL.

BAWSCA has developed a strategy to address each of its member agencies' unmet needs flowing from the ISL through its Water Conservation Implementation Plan and the Long-term Reliable Water Supply Strategy, separately discussed in Section 1.2 and Section 6.5 respectively.

6.3.1 Interim Supply Allocations

The Interim Supply Allocations (ISAs) refers to each individual Wholesale Customer's share of the ISL. On December 14, 2010, the SFPUC established each agency's ISA through 2018. In general, the SFPUC based the allocations on the lesser of the projected fiscal year 2017-18 purchase projections or ISGs. The ISAs are effective only until December 31, 2018 and do not affect the Supply Assurance or the ISGs, both discussed in Section 3. San Francisco's ISA is 81 mgd.

The City ISA is 3.13 mgd (3,506 AFY).

As stated in the WSA (Attachment D), the Wholesale Customers do not concede the legality of the SFPUC's establishment of the ISAs and Environmental Enhancement Surcharge, discussed below, and expressly retain the right to challenge either or both, if and when imposed, in a court of competent jurisdiction.

6.4 Environmental Enhancement Surcharge

The SFPUC plans to establish the Environmental Enhancement Surcharge concurrently with the budget-coordinated rate process. This surcharge will be unilaterally imposed by the SFPUC on individual Wholesale Customers, and SFPUC retail customers, when each 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.

The SFPUC is in the process of developing the methodology and amount of this volume-based charge. The Environmental Enhancement Surcharge will become effective beginning fiscal year 2011-12.

6.5 BAWSCA's Long-Term Reliable Water Supply Strategy

BAWSCA's water management objective is to ensure that a reliable, high quality supply of water is available where and when people within the BAWSCA service area need it. A reliable supply of water is required to support the health, safety, employment, and economic opportunities of the existing and expected future residents in the BAWSCA service area and to supply water to the agencies, businesses, and organizations that serve those communities. BAWSCA is developing the Long-Term Reliable Water Supply Strategy (Strategy) to meet the projected water needs of its member agencies and their customers through 2035 and to increase their water supply reliability under normal and drought conditions.

The Strategy is proceeding in three phases. Phase I was completed in 2010 and defined the magnitude of the water supply issue and the scope of work for the Strategy. Phase II of the Strategy is currently under development and will result in a refined estimate of when, where, and how much additional supply reliability and new water supplies are needed throughout the BAWSCA service area through 2035, as well as a detailed analysis of the water supply management projects, and the development of the Strategy implementation plan. Phase II will be complete by 2013. Phase III will include the implementation of specific water supply management projects. Depending on cost-effectiveness, as well as other considerations, the projects may be implemented by a single member agency, by a collection of the member agencies, or by BAWSCA in an appropriate timeframe to meet the identified needs. Project implementation may begin as early as 2013 and will continue throughout the Strategy planning horizon, in coordination with the timing and magnitude of the supply need.

The development and implementation of the Strategy will be coordinated with the BAWCSA member agencies and will be adaptively managed to ensure that the goals of the Strategy, i.e., increased normal and drought year reliability, are efficiently and cost-effectively being met.

6.6 BAWSCA's Tier One and Tier Two Drought Allocations

This section describes the Tier One and Tier Two Drought Implementation Plans developed to estimate the projected SFPUC supply to the BAWSCA member agencies, including the City, for the SFPUC system-wide shortages during droughts.

Table 6-2 summarizes the expected reduction in the SFPUC's available water supply and the City's allocations in normal, single-dry and multiple-dry years, based on the Tier One and Tier Two Drought Allocation Plans. Supplies from the SFPUC to the City are projected to be 3,530 AFY (3.15 mgd) in average years, 2,687 AFY (2.4 mgd) in single-dry years, and from 2,687 AFY to 2,333 AFY (2.08 mgd) during multi-dry years. Details of the Tier One and Tier Two Drought Allocation Plans are provided in the following sections.

Table 6-2
Supply Reliability-Current Water Sources- AFY

Water Supply Sources	Purchase Year 2010	Average/Normal Year	Single Dry Year	Multiple Dry Water Year Supply		
				Year 1 ^(4, 5)	Year 2 ^(4, 5)	Year 3 ^(4, 5)
SFPUC System-Wide Shortage %	0%	0%	10%	10%	20%	20%
BAWSCA Wholesale Allocation (mgd)	-	184	152.6	152.6	132.5	132.5
City of Millbrae Allocation Factor %⁽¹⁾	-	-	1.57	1.57	1.57	1.57
City of Millbrae Allocation (mgd)	2.24 ⁽²⁾	3.15 ⁽³⁾	2.40	2.40	2.08	2.08
City of Millbrae Allocation (AFY)	2,513 ⁽²⁾	3,530 ⁽³⁾	2,687	2,687	2,333	2,333
City of Millbrae Percent of Normal Year:	71%	100%	76%	76%	66%	66%

- (1) Based on the Tier Two Drought Implementation Plan Final Allocation for the City. Tier Two Drought Implementation Plan requires that Allocation Factor be calculated by BAWSCA each year in preparation for a potential water shortage emergency.
- (2) Based on the City's actual water purchase from the SFPUC for the fiscal year 2009-2010.
- (3) Represents the City's current ISG of 3.15 mgd from the SFPUC.
- (4) Wholesale water demands were very low relative to available supply throughout the Hetch Hetchy System in 2010. Based on information provided by the SFPUC and application of the Tier One Drought Allocation Plan and the Tier Two Drought Implementation Plan (DRIP), the City's projected drought allocations from the SFPUC in 2010 and immediately thereafter are actually greater than the 2010 purchases of 2.24 mgd (e.g., the City is projected to receive up to 2.40 mgd under a 10% system-wide rationing, and 2.08 mgd under a 20% system-wide rationing). As such, the City has shown that in 2010, even under extended drought conditions, the City is able to get 100% of its SFPUC purchase projections.
- (5) The multiple-dry years reflect years 2 through 4 of the SFPUC 8.5 year design drought. It is assumed that in year 1 of the design drought there are no delivery reductions and full deliveries are made. Year 4 of the multiple-dry years was assumed to be the same as year 3 of multiple-dry year, as a conservative assumption.

6.6.1 Tier One Drought Allocations

In July 2009, in connection with the WSA, the Wholesale Customers and San Francisco adopted a Water Shortage Allocation Plan (WSAP) to allocate water from the regional water system to retail and Wholesale Customers during system-wide shortages of 20 percent or less (the "Tier One Plan"). The Tier One Plan replaced the prior Interim Water Shortage Allocation Plan, adopted in 2000, which also allocated water for shortages up to 20 percent. The Tier One Plan also allows for voluntary transfers of shortage allocations between the SFPUC and any Wholesale Customer and between Wholesale Customers themselves. In addition, water

“banked” by a Wholesale Customer, through reductions in usage greater than required, may also be transferred.

The Tier One Plan, which allocates water between San Francisco and the Wholesale Customers collectively, distributes water based on the level of shortage, as shown in Table 6-3.

Table 6-3
Tier One Plan Allocation of Water During Shortages

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

The Tier One Plan will expire at the end of the term of the WSA, unless extended by the SFPUC and the Wholesale Customers.

6.6.2 Tier Two Drought Allocations

The Wholesale Customers have negotiated and adopted the Tier Two Drought Implementation Plan (DRIP), or “Tier Two Plan,” the second component of the WSAP which allocates the collective Wholesale Customer share among each of the 26 Wholesale Customers. This Tier Two Plan allocation is based on a formula that takes multiple factors for each Wholesale Customer into account, 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 mgd, which in turn is the weighted average of two components. The first component is the Wholesale Customer’s ISG, as stated in the WSA, and is fixed. The second component, the Base/Seasonal Component, is variable and is calculated using the monthly water use for three consecutive years prior to the onset of the drought for each of the Wholesale Customers for all available water supplies. The second component is accorded twice the weight of the first, fixed component in calculating the Allocation Basis. Minor adjustments to the Allocation Basis are then made to ensure a minimum cutback level, a maximum cutback level, and a sufficient supply for certain Wholesale Customers.

The Allocation Basis is used in a fraction, as numerator, over the sum of all Wholesale Customers’ Allocation Bases to determine each Wholesale Customer’s Allocation Factor. The final shortage allocation for each Wholesale Customer is determined by multiplying the amount

of water available to the Wholesale Customers' collectively under the Tier One Plan, by the Wholesale Customer's Allocation Factor.

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

The Tier Two Plan will expire in 2018 unless extended by the Wholesale Customers.

6.7 Reliability of Regional Water System

The SFPUC's WSIP provides goals and objectives to improve the delivery reliability of the RWS including water supply reliability. The goals and objectives of the WSIP related to water supply are:

Program Goal	System Performance Objective
Water Supply – <i>meet customer water needs in non-drought and drought periods</i>	<ul style="list-style-type: none">• Meet average annual water demand of 265 mgd from the SFPUC watersheds for Retail and Wholesale Customers during non-drought years for system demands through 2018.• Meet dry-year delivery needs through 2018 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.

6.7.1 Water Supply – All Year Types

The SFPUC historically has met demand in its service area in all year types from its watersheds. They are the:

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

In general, 85 percent of the supply comes from the Tuolumne River through Hetch Hetchy Reservoir and the remaining 15 percent comes from the local watersheds through the San

Antonio, Calaveras, Crystal Springs, Pilarcitos and San Andreas Reservoirs. The adopted WSIP retains this mix of water supply for all year types.

6.7.2 Water Supply – Dry-Year Types

The adopted WSIP includes the following water supply projects to meet dry-year demands with no greater than 20 percent system-wide rationing in any one year:

- Restoration of Calaveras Reservoir capacity
- Restoration of Crystal Springs Reservoir capacity
- Westside Basin Groundwater Conjunctive Use
- Water Transfer with Modesto Irrigation District / Turlock Irrigation District

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

6.7.3 Projected SFPUC System Supply Reliability

The SFPUC has provided information presenting the projected RWS supply reliability (Table 3 in Appendix H). This table assumes that the Wholesale Customers purchase 184 mgd from the RWS through 2035 and the implementation of the dry-water year supply projects included in the WSIP. The numbers represent the wholesale share of available supply during historical year types per the Tier One Plan. This table does not reflect any potential impact to RWS yield from the additional fishery flows required as part of the Calaveras Dam Replacement Project and the Lower Crystal Springs Dam Improvements Project.

6.7.4 Impact of Recent SFPUC Actions on Dry Year Reliability of SFPUC Supplies

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 3.9 mgd and 3.5 mgd, respectively with a total of 7.4 mgd average annually. These fishery flows could potentially create a shortfall in meeting the SFPUC demands of 265 mgd and slightly increase the SFPUC's dry-year water supply needs. If a shortfall occurs, it is anticipated at the completion of construction of both the Calaveras Dam Replacement Project and the Lower Crystal Springs Dam Improvements Project in approximately 2015 and 2013, respectively, when the SFPUC will be required to provide the fishery flows.

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. As a result of the fishery flows, the SFPUC may not be able to meet these objectives between 2013 and 2018 without (1) a reduction in demand, (2) an increase in rationing, or (3) a supplemental supply. Following is a description of these actions.

6.7.4.1 Reduction in Demand

The current projections for purchase requests through 2018 remain at 265 mgd. However, in the last few years, SFPUC deliveries have been below this level, as illustrated in Table 6-4. If this trend continues, the SFPUC may not need 265 mgd from its watersheds to meet purchase requests through 2018. As a result, the need for supplemental supplies of 3.5 mgd starting in 2013 and increasing to 7.4 mgd in 2015 to offset the water supply loss associated with fish releases may be less than anticipated.

Table 6-4
Water Deliveries in SFPUC Service Area ⁽¹⁾

	FY2006	FY 2007	FY 2008	FY 2009	FY 2010
Total Deliveries (mgd)	247.5	257	254.1	243.4	225.2

(1) Reference: SFPUC FY09-10 J-Table Line 9 "Total System Usage" plus 0.7 mgd for Lawrence Livermore National Laboratory use and 0.4 mgd for Groveland. No groundwater use is included in this number. Unaccounted for Water is included.

6.7.4.2 Increase in Rationing

The adopted WSIP provides for a dry-year water supply program that, when implemented, would result in system-wide rationing of no more than 20 percent. The PEIR identified the following drought shortages during the design drought: 3.5 out of 8.5 years at 10 percent rationing and 3 out of 8.5 years at 20 percent. If the SFPUC did not develop a supplemental water supply in dry years to offset the effects of the fishery flows on water supply, rationing would increase during dry years. If the SFPUC experiences a drought between 2013 and 2018 in which rationing would need to be imposed, rationing would increase by approximately 1 percent in shortage years. Rationing during the design drought would increase by approximately 1 percent in rationing years.

6.7.4.3 Supplemental Supply

The SFPUC may be able to manage the water supply loss associated with the fishery flows through the following actions and considerations:

- Development of additional conservation and recycling
- Development of additional groundwater supply
- Water transfer from Modesto Irrigation District and/or Turlock Irrigation District
- Increase in Tuolumne River supply
- Revising the Upper Alameda Creek Filter Gallery Project capacity¹
- Development of a desalination project

¹ The adopted WSIP included the Alameda Creek Fishery Enhancement project, since renamed the Upper Alameda Creek Filter Gallery (UACFG) project, which had the stated purpose of recapturing downstream flows released under a 1997 California Department of Fish and Game MOU. Implementation of the UACFG project was intended to provide for no net loss of water supply as a result of the fishery flows bypassed from the Alameda Creek Diversion Dam and/or released from Calaveras Dam. At the time the PEIR was prepared, the UACFG was described in the context of recapturing up to 6,300 AFY. The UACFG will undergo a separate CEQA process in which all impacts associated with the project will be analyzed fully.

6.7.4.4 Meeting the Level of Service Goal for Delivery Reliability

The SFPUC has stated a commitment to meeting its contractual obligation to its Wholesale Customers of 184 mgd and its delivery reliability goal of 265 mgd with no greater than 20 percent rationing in any one year of a drought. In Resolution No. 10-0175 adopted by the SFPUC on October 15, 2010, the SFPUC directed staff to provide information to the SFPUC and the public by March 31, 2011 on how the SFPUC has the capability to attain its water supply levels of service and contractual obligations. This directive was in response to concerns expressed by the SFPUC and the Wholesale Customers regarding the effect on water supply of the instream flow releases required as a result of the Lower Crystal Springs Dam Improvement Project and the Calaveras Dam Replacement Project. In summary, the SFPUC has a projected shortfall of available water supply to meet its Level of Service (LOS) goals and contractual obligations. The SFPUC has stated that current decreased levels of demand keep this from being an immediate problem, but that in the near future, the SFPUC must resolve these issues. Various activities are underway by the SFPUC to resolve the shortfall problem. SFPUC staff will report back to the SFPUC by August 31, 2011 to provide further information on actions to resolve the shortfall problem.

6.8 Normal, Single-Dry, And Multiple-Dry Years Supply

The City relies solely on the SFPUC to meet demands during normal, single-dry, and multiple-dry years. The section elaborates on this supply available to the City.

For planning purposes, the SFPUC "normal year" is based on historical hydrology under conditions that allow the reservoirs to be filled over the course of the snowmelt season, allowing full deliveries to customers.

The 1987-1992 drought profoundly highlighted the deficit between the SFPUC's water supplies and its demands. Other than the 1976-1977 drought, drought sequences in the past did not seriously affect the ability of the SFPUC to sustain full deliveries to its customers. Based on the 1987-1992 drought experience, the SFPUC assumes its "firm" capability to be the amount the system can be expected to deliver during historically experienced drought periods. In estimating this firm capability, the SFPUC assumes the potential recurrence of a drought such as occurred during 1987-1992, plus an additional 2-year period of limited water availability. This drought sequence is referred to as the "design drought" and serves as the basis for planning and modeling of future drought scenarios. The SFPUC design drought is an 8.5 year drought period, which is more severe than what the SFPUC RWS has historically experienced. For the purpose of the three-year drought sequence, the second through the fourth years of the SFPUC design drought are used, representing the worst three-year period based on historical conditions. (SFPUC, 2010). For the single-dry year, the 1977 drought is considered to be worst single-dry year.

Table 6-2 summarizes the expected reduction in the SFPUC's available water supply and the City's allocations in normal, single-dry and multiple-dry years. The system-wide projection numbers by the SFPUC are based on the application of the Tier One Plan that divides available supplies between the SFPUC retail and the BAWSCA member agencies, as included in the adopted WSA and as described in Section 6.6. As part of the regional water supply reliability, the SFPUC estimated the frequency and severity of anticipated shortages for the period 2010 through 2035. For this analysis, SFPUC assumed that the historical hydrologic period is indicative of future events and evaluated the supply reliability assuming a repeat of the actual

historical hydrologic period from 1920 through 2002. For the purposes of the SFPUC analysis, in average/normal year types, the SFPUC assumed a delivery goal of 265 mgd from the RWS with the wholesale RWS allocation of 184 mgd, as shown in Table 6-2. System-wide shortages are projected as 10 percent during a single-dry year and from 10 percent to 20 percent during multiple-dry years. These shortages were applied to a demand of 265 mgd and the subsequent allocations between retail and wholesale collectively.

Supplies from the SFPUC to the City are projected to be 3,530 AFY (3.15 mgd) in average years, 2,687 AFY (2.4 mgd) in single-dry years, and from 2,687 AFY to 2,333 AFY (2.08 mgd) during multiple-dry years (Table 6-2). Projection of these normal, single-dry, and multiple-dry year water supply for the City is based on the information provided by the SFPUC on March 31, 2011 on the RWS reliability (Appendix H) and based on the results of the Tier Two Plan (DRIP) that was provided to the City by BAWSCA. As described in Section 6.6, based on the DRIP adopted by the Wholesale Customers, the City's allocation was determined by multiplying the amount of water available to the Wholesale Customers' collectively by the City's final allocation factor of 1.57 percent from the DRIP.

Based on this information, the SFPUC supply is projected to remain at the City's current allocation of 3,530 AFY (3.15 mgd) in average/normal year types (Tables 6-2 and 6-5). In a single dry-year, a 10 percent system-wide cutback would lead to a 24 percent cutback from the City's water supply assurance level of 3,530 AFY (3.15 mgd), resulting in water supply of 2,687 AFY (2.4 mgd) (Table 6-2). A 20 percent system-wide cutback would lead to a more severe cutback for the City, resulting in a cutback of approximately 33 percent or delivery of 2,333 AFY (2.08 mgd) of the City's current ISG of 3,530 AFY (Table 6-2).

Table 6-5
Supply Reliability for a Single Dry Year -Current and Future Supplies- AFY

	2010	2015	2020	2025	2030	2035
SFPUC Potable Water Purchases ⁽¹⁾	2,513	2,687	2,687	2,687	2,687	2,687
City of Millbrae Groundwater ⁽²⁾	0	0	0	0	0	0
Transfers/Exchanges In or Out ⁽²⁾	0	0	0	0	0	0
Desalination ⁽²⁾	0	0	0	0	0	0
City of Millbrae Recycled Water ⁽³⁾	15	28	28	28	28	28
Total Water Supply (AFY)	2,528	2,715	2,715	2,715	2,715	2,715
Total Water Supply (mgd)	2.26	2.42	2.42	2.42	2.42	2.42

(1) Future supply projections 2015 through 2035 represent a 10 percent SFPUC system-wide shortage, based on the Tier One and Tier Two Drought Allocation Plans. Under this, the City's single-dry year allocation of 2,687 AFY would be higher than the 2009-2010 allocation of 2,513 AFY (2.24 mgd).

(2) The City currently does not have water supply through groundwater pumping, transfers/ exchanges, or desalination.

(3) The "restricted" recycled water use for WPCP use.

6.9 Supply and Demand Comparisons

The available supplies and water demands for the City were analyzed to evaluate the overall impact of the SFPUC supply cutback and to access the City's ability to satisfy demands during three scenarios: a normal water year, a worst-case single-dry year, and multiple-dry years. The tables in this section present the supplies and demands for the various drought scenarios for the

projected planning period of 2010-2035 in five year increments. Table 6-6 presents the base years assumed for the development of water year data. As described earlier in this section, the City's water supply is dependent on the SFPUC system's ability to deliver water during droughts. In the SFPUC's reliability analysis and projected deliveries to its Wholesale Customers in average/normal year types, the SFPUC assumed a delivery goal of 265 mgd from the RWS with the Wholesale RWS allocation of 184 mgd in average/normal year types. For the purposes of this 2010 planning, the SFPUC can meet the demands of its retail and Wholesale Customers in years of average/normal and above average year types. Tables 6-7, 6-8, and 6-9 at the end of this section summarize, respectively, normal year, single-dry year, and multiple-dry year supplies for the City.

Table 6-6
Basis of Water Year Data

Water Year Type	Base Years
Normal Water Year	2011
Single-Dry Water Year	1977 ⁽¹⁾
Multiple-Dry Water Years	1987-1990 ⁽²⁾

(1) Assumed that single-dry year can be represented by the hydrological year 1977, as a conservative assumption.

(2) The multiple dry years reflect Year 2 through Year 4 of the SFPUC 8.5 year design drought. It is assumed that in Year 1 of the design drought there are no delivery reductions and full deliveries are made.

6.9.1 Normal Water Year

Table 6-7 summarizes the City's water supplies available to meet demands over the 25-year planning period during an average/normal year. Currently, the City relies on the SFPUC as a sole source of water supplier. The SFPUC water supply is projected to meet the future demand during normal year types. The City's future demand through 2035 is projected to be below the City's current ISG of 3,530 AFY (3.15 mgd).

6.9.2 Single-Dry Year

The water supplies and demands for the City's service area over the 25-year planning period were analyzed in the event that a single-dry year occurs, similar to the drought that occurred in California in 1977. Table 6-8 summarizes the existing and planned supplies available to meet demands during a single-dry year. Total supply in single-dry years would be 2,715 AFY, including the SFPUC supply, which is the sole source of potable water supply that is projected to be available at 2,687 AFY, and 28 AFY of restricted use of recycled water for WPCP use. It should be noted that the projected single-dry year supply of 2,687 AFY from the SFPUC is higher than the City's current demand of 2,513 AFY (2.24 mgd) during the fiscal year 2009-2010. The table assumes that the demand is consistent with normal year demands to demonstrate the level of water use efficiency that is required to meet the available supply. Given the decline in water demand that the City has been experiencing the last several years and the conservation measures that the City would be implementing during droughts, the City anticipates meeting projected demand with the SFPUC supply during single-dry years.

6.9.3 Multiple-Dry Year

The water supplies and demands for the City's service area over the 25-year planning period were analyzed in the event that a multiple-dry year (three-year) event occurs, similar to the drought that occurred during the years 1987-1990. Table 6-9 summarizes the existing and planned supplies available to meet demands during multiple-dry years. The SFPUC supply is the sole source of potable water supply that is projected to be available at 2,687 AFY (2.4 mgd) during the first year supply. It should be noted that the projected first year supply of 2,687 AFY is higher than the City's current demand of 2,513 AFY (2.24 mgd) during the fiscal year 2009-2010. The second and third year supply is projected to be at 2,333 AFY (2.08 mgd). Future projections include 28 AFY of restricted use of recycled water for WPCP use. Therefore, total supply is the sum of the SFPUC potable supply and the projected use of recycled water. The table assumes that the demand is consistent with normal year demand to demonstrate the level of water use efficiency that is required to meet the available supply. Given the decline in water demand that the City has been experiencing last several years and the conservation measures that the City would be implementing during multi-year droughts, the City anticipates meeting projected demand with the SFPUC supply during multiple-dry years.

Table 6-7
Supply and Demand Comparison-Normal Year- AFY

	2010	2015	2020	2025	2030	2035
Supply totals*	2,528	2,936	2,987	3,126	3,253	3,379
Demand totals	2,528	2,936	2,987	3,126	3,253	3,379
Difference	0	0	0	0	0	0
Difference as % of supply	0%	0%	0%	0%	0%	0%
Difference as % of demand	0%	0%	0%	0%	0%	0%

*Maximum available supply per SFPUC Water Supply Agreement ISG is 3,530 AFY/3.15 mgd

Table 6-8
Supply And Demand Comparison-Single Dry Year- AFY

	2010	2015	2020	2025	2030	2035
Supply totals	2,528	2,715	2,715	2,715	2,715	2,715
Normal Demand totals	2,528	2,936	2,987	3,126	3,253	3,379
Difference	0	221	271	411	537	664
Difference as % of supply	0%	8.1%	10.0%	15%	20%	24%
Difference as % of normal demand	0%	7.5%	9.1%	13%	17%	20%

Table 6-9
Supply and Demand Comparison-Multiple Dry Year- AFY

		2010	2015	2020	2025	2030	2035
Multiple-dry year first year supply	Supply totals	2,528	2,715	2,715	2,715	2,715	2,715
	Normal Demand totals	2,528	2,936	2,987	3,126	3,253	3,379
	Difference	15	221	271	411	537	664
	Difference as % of supply	1%	8%	10%	15%	20%	24%
	Difference as % of normal demand	1%	8%	9%	13%	17%	20%
Multiple-dry year second year supply	Supply totals	2,361	2,361	2,361	2,361	2,361	2,361
	Normal Demand totals	2,610	2,946	3,015	3,151	3,278	3,404
	Difference	249	585	654	791	917	1,044
	Difference as % of supply	11%	25%	28%	33%	39%	44%
	Difference as % of normal demand	10%	20%	22%	25%	28%	31%
Multiple-dry year third year supply	Supply totals	2,361	2,361	2,361	2,361	2,361	2,361
	Normal Demand totals	2,691	2,956	3,043	3,177	3,303	3,430
	Difference	331	596	682	816	942	1,069
	Difference as % of supply	14%	25%	29%	35%	40%	45%
	Difference as % of normal demand	12%	20%	22%	26%	29%	31%

6.9.4 Summary of Comparisons

Using the measures in the Water Shortage Contingency Plan described in Section 8 to reduce the demands to the required supply availability, the City anticipates having adequate supplies to meet demands during normal, single-dry, and multiple-dry years throughout the 25-year planning period. Although not included in this supply and demand comparison analysis, the City will continue to consider the potential use of recycled water in the future if necessary to meet future demand.

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Section 7: Water Demand Management Measures

This section describes the City water demand management measures (DMMs). The City continues to implement all of the DMMs described in the Act and, in addition, implements other water conservation programs. The City does a considerable amount of outreach and provides many resources for our community to conserve water. These programs are described below.

7.1 Background

The City is signatory to the Memorandum of Understanding (MOU) Regarding Urban Water Conservation in California dated September 1991, and is a member of the California Urban Water Conservation Council (CUWCC). The City has submitted its 2008-2009 and 2009-2010 reports to CUWCC, which includes compliance with the various Best Management Practices (BMPs). The recent reports as well as those for 2005 – 2006, 2006- 2007, and 2007-2008 are attached as Appendix I. In compliance with the BMPs, and in accordance with applicable State law(s), 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 amending the Code to update the City's program in 1993 is attached as Appendix J. Recently adopted water conservation measures by the City will increase water savings along with the implementation of additional programs with BAWSCA. The Indoor Water Ordinance was adopted in 2010 and the Green Building Ordinance in 2011. These new Ordinances are also included in Appendix F and K respectively. In addition, the CalGreen Building Codes will reduce water consumption through the increased plumbing code requirements.

7.2 Regional Coordination on Demand Management

The City participates in a number of regional programs in coordination with BAWSCA and its member agencies and looks for opportunities to work with other water agencies, including the SFPUC and the SCVWD that leverage available resources to implement water use efficiency projects. For example, in 2005, BAWSCA and the SFPUC entered into a MOU regarding the administration of a Prerinse Spray Valve Installation Program. Through this MOU, BAWSCA and the SFPUC worked cooperatively to offer and coordinate the installation of water conserving Prerinse Spray Valves to food service providers throughout the BAWSCA service area. In 2007 and 2009, the City participated in another BAWSCA program to provide Prerinse Spray Valves to food service providers who did not receive them previously or were new businesses. Other cooperative programs with BAWSCA include school education, landscape budgets, high efficiency toilet rebates, and medium and long term planning.

In addition, BAWSCA participates in the Bay Area HEW Rebate Program, which is a residential rebate program offered by all of the major Bay Area water utilities. Through participation in this program, BAWSCA and its participating member agencies were the recipients of \$187,500 in Proposition 50 grant funds, which became available in fiscal year 2006-2007. More recently, as part of the Bay Area Integrated Regional Water Management Plan, BAWSCA and the other major Bay Area water utilities submitted a Proposition 84 Implementation Grant Proposal in January 2011 to support regional water conservation efforts that offer drought relief and long-term water savings. The proposed 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 water users: residential, commercial, industrial and institutional. Four specific programs were selected for the project because they were determined to provide the most quantifiable and sustainable water savings, including: 1) Water-Efficient Landscape Rebates, Training and Irrigation Calculator; 2) HET/Urinal Direct Install and/or Rebates; 3) HEW Rebates; and 4) Efficient Irrigation Equipment Rebates. At this point, it is likely that the City will continue participation in the HEW Rebates and for the near term will not participate in the other programs listed due to funding constraints.

The Water Conservation Implementation Plan (WCIP) done in coordination with BAWSCA and its member agencies will also help the City meet ever increasing goals for additional water conservation and water allocations. This plan includes five new measures of which some are being implemented as noted: (1) increase goals for HEW rebates; (2) increase goals for HET rebates; (3) hold workshops for residents and landscapers for water efficient landscaping; (4) develop an indoor water efficiency ordinance for new buildings and remodels (implemented); and (5) develop an ordinance for outdoor/landscaping water efficiency (implemented).

The City will continue to partner with BAWSCA and its member agencies and the other Bay Area water utilities, as appropriate, to develop regional water conservation efforts that extend beyond local interests to examine costs, benefits and other related issues on a system-wide level. The goal is to maximize the efficient use of water regionally by capitalizing on variations in local conditions and economies of scale.

7.3 Implementation Levels of DMMS/BMPS

This section describes the implementation of the City's DMMS/ BMPs. The City, in conjunction with BAWSCA, will continue to offer support to implement the DMMS to comply with the UWMP Act and SBX7-7 requirements.

7.4 Foundational BMPs

7.4.1 Utility Operations- Operations Practices

7.4.1.1 Conservation Coordinator (formerly BMP 12)

A Water Conservation Coordinator has been on staff since 1991. In addition, there are other staff members who work part-time on water conservation programs. This position oversees the Water Resources & Conservation Program which includes implementing the various programs and complying with reporting requirements. The City will continue to staff water conservation positions.

7.4.1.2 Water Waste Prevention (formerly BMP 13)

The City's Water Conservation Ordinance, Title 8, Chapter 8.45, has been in place since 1976 and prohibits water waste and includes a number of restrictions, such as requiring the prompt repair of broken or defective plumbing, sprinkler, watering or irrigation systems which permit the escape or leakage of water; shut-off valves for hoses; disallowing flooding or runoff in gutters, driveways or streets; use of recycled water for all cooling purposes and for commercial car washes; all water service connections to the City water system must be metered with the City approved meters; and includes other measures.

The Indoor Water Conservation Ordinance, Title 8, Chapter 8.45 was adopted in 2010 and applies to new developments and remodels of a specified size (Appendix F). This ordinance requires that water fixtures meet minimum standards for toilets, urinals, faucets, clothes washers, dish washers, ice machines, pre-rinse spray valves and other items. Another newly adopted ordinance, the Green Building Regulations Ordinance, Title 9, Chapter 9.50, also requires water saving measures (Appendix K).

City staff will continue to assist customers with implementation of the actions required in these ordinances.

7.4.1.3 Water Loss Control (formerly BMP 3)

The City's UAW rate for calendar year 2010 was approximately 152 AF, or 6 percent of total demand, which is below the ten percent limit set forth by the California Urban Water Conservation Council (CUWCC) in its *MOE Regarding Urban Water Conservation Best Management Practices* (MOU) in 1992. The City monitors the unaccounted for water and repairs system leaks upon detection. UAW is estimated based on the difference between the total water supply purchase from the SFPUC and the total metered water deliveries to customers plus additional uses of accounted water in the system including system flushing through hydrants, water main breaks, water used at turnouts and monitoring sites. UAW for the last five years (fiscal years 2005-2006 through 2009-2010) was approximately 3 percent. The City has implemented the AWWA M36 Water Audit Methodology spreadsheet which is found in Appendix I.

7.4.1.4 Metering with Commodity Rates for All New Connections and Retrofit of Existing Connections (formerly BMP 4)

The City meters water use for all of its customers, including for new customers. The water rates are uniform. The Green Building regulations include outdoor meters as a measure. The City has a program to test, repair and replace meters.

7.4.1.5 Retail Conservation Pricing (formerly BMP 11)

The City's water rates, as found in Appendix E, are uniform, therefore the more water customers use, the more they pay. The City's water rates are average in comparison to county wide rates; however, they are increasing every year over a five year period ending in 2013 and are mostly attributed to SFPUC rate increases (Table 7-1). As rates increase each year, it has encouraged conservation by more customers. The City is evaluating tiered water rates for future implementation to encourage even greater water savings.

Based on the current pricing rate and the 2009-2010 BMP report in Appendix I, 80 percent of the City's revenue comes from volumetric charges.

Table 7-1
City of Millbrae Water Rates (per HCF)

Water Quantity Charge		July 2010	July 2011	July 2012	July 2013
Basic	Per Unit (HCF)	\$4.53	\$4.85	\$5.14	\$5.45

Key: HCF - Hundred Cubic Feet

7.4.2 Education

7.4.2.1 Public Information Programs (formerly BMP 7)

Public information programs are the cornerstone of the Water Resources & Conservation Program. Water conservation is promoted through a variety of outreach efforts to inform residential and commercial customers on measures for conserving water and to promote the City's available resources. Outreach is conducted in the following ways: displays, printed media, electronically, presentations, and staffing events as described in the BMP reports found in Appendix I.

Displays are set up on a regular basis in the Library and in the lobby of City Hall to promote workshops, Water Awareness Month, Water Education Month, and on the program resources including water saving devices and rebates. Outreach is also conducted at a number of city wide annual events such as the Art & Wine Festival, Health and Wellness Fair, Lunar New Year and the Japanese Culture Festival. Education tables are also staffed in the Downtown area and in front of the Library during Earth Week and Pollution Prevention Week. All of these events provide an opportunity to have interactive conversations with the community and provide informational handouts.

Other outreach is accomplished through regular postings on the City's website, placing messages on utility bills, and airing public service announcements and showing environmental movies on the local cable station, MCTV Channel 27. Topics include information on workshops, devices, rebates and water saving tips. The City also has a devoted water conservation hotline to help customers.

The outreach conducted through printed media includes articles in the City, utility and Chamber of Commerce newsletters, and distribution of brochures. Newsletter articles focus on timely issues and available resources. The City develops and distributes a variety of brochures and literature on water conserving topics and water efficient landscaping and also distributes a Water Wise garden CD which includes Millbrae homes. Brochures and flyers are distributed to our community and also include resources and water saving tips.

Additional outreach includes having water conserving tips in the annual CCR, an example of which is found in Appendix G that is mailed to each household, and sending packets with water conservation information to new residents and businesses. Each year, the City recognizes and does additional outreach for Water Awareness Month. These efforts include table displays at City Hall and the Library which feature the rebate programs, water saving devices,

preventing/stopping leaks, and educational handouts. During this month the City also hangs a street banner in the Downtown area and utilizes the previously mentioned outreach measures.

Presentations are conducted with community groups to highlight the many programs and resources available. Attendees receive program handouts.

Public information programs and handouts can be viewed at www.ci.millbrae.ca.us/waterconservation.

7.4.2.2 School Education Programs (formerly BMP 8)

The City provides a number of resources for the schools, including conducting presentations to classrooms and summer camp programs on where our water comes from and on conserving water, distributing program handouts for students and their families, and providing educational activity booklets for kindergarteners through fifth graders for Water Education Month in October. The Environmental Programs' semi-annual newsletter, Elements, is e-mailed to teachers and school staff and includes water conservation articles and information on available resources. Students are also reached through a cooperative program with the Library, which includes providing water saving handouts to students at their after school programs and periodically showing them environmental movies. Twice a year, City staff has an education table in front of the Library that reaches many students. Throughout the year, teacher requests are filled for educational handouts.

The City participated in the BAWSCA Water-Wise School Education Kits Program up until the 2010-2011 school year. For the 2010-2011 school year, the City ran a similar program utilizing the same concepts and handouts. This program is typically implemented in coordination with teachers in fifth grade when they are teaching their units on water. Through this program, kits are distributed to fifth grade students that enable them to install water saving devices and perform a water audit in their home. Included with the kit is a curriculum for the teacher. The audit includes methods to quantify the water savings as a result of taking the actions in the curriculum. Students take kits home to share their water conservation learning experience with their family members. The energy and water saving devices contained in the kits are installed in the home and the family is able to calculate the water savings resulting from each device.

The new 2010-2011 BAWSCA program includes providing school assemblies that the City participated in and provided to five schools. The school assemblies combine age appropriate state science standards with circus skills, juggling, music, storytelling, comedy, and audience participation to teach environmental awareness, water science and conservation. The assemblies are designed to include local water source and watershed education.

More detailed information regarding this BMP is found in the BMP reports in Appendix I.

7.5 Programmatic BMPS

As described earlier in Section 2, the City has chosen the gpcd approach for complying with the MOU. DMM status is described in the following sections.

7.5.1 Residential Programs

The largest customer class in the City service area is residential (including single family, duplex, and multi-family) , accounting for approximately 92 percent of connections and 72 percent of total demand, based on the current data for the fiscal year 2009-2010. Based on the last five years of data, the number of the residential customer accounts changed slightly and their portion of the demand and water usage remained at approximately 71 to 74 percent of total demand. The City has approximately 5,716 single family (SF) and 263 multi-family (MF) residential accounts. The City has focused the majority of its conservation efforts on residential use. Summaries of the residential programs are found in the following sections.

7.5.1.1 Residential Assistance Program and Landscape Water Surveys (formerly BMPs 1 and 2)

In the City service area, residential retrofit plumbing devices are distributed that include water efficient showerheads, kitchen and bathroom sink aerators, flow meter/water displacement bags and toilet tank leak detection tablets. The flow meter/water displacement bags can be used to test how much water is flowing from a showerhead per minute and can also be sealed and used as a water displacement bag in toilets to save water per each flush. The City distributes some of the lowest flow devices (faucet aerators and showerheads) on the market. Toilet tank leak detection tablets are widely distributed and test for leaks that are neither seen nor heard. The devices are also distributed to customers at various community events and fairs along with educational handouts and program information. The devices are also a part of the Water Wise School Education Program.

The City distributes and mails out surveys to residential customers. The surveys are distributed with the Program's newsletter and are also mailed to new residents. Customized water usage reports are provided 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, the gallons per minute (gpm) of the kitchen and bathroom faucets, and the gpm of the showerheads. For outdoor water use, the survey asks about how lawns and landscapes are watered (irrigation or hose), how often and how long landscaping is watered, and the types of plants. The survey asks about 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 newsletter which is distributed with the survey includes a number of water saving tips, information on water efficient landscaping and other useful water saving tips. In addition, water audits are performed for businesses as a part of the Green Business Certification process.

7.5.1.2 High-Efficiency Clothes Washers (formerly BMP 6)

The City participates in a regional program administered by BAWSCA to provide rebates to residential customers that purchase qualifying HEWs. The rebates offered by the City are combined with rebates provided by the utility company, Pacific Gas & Electric (PG&E). In addition, the City has participated in a commercial rebate program with BAWSCA for coin operated clothes washers.

7.5.1.3 WaterSense Specification (WSS) Toilets (formerly BMP 14)

The City participates in BAWSCA's residential and commercial HET rebate program. Rebates are offered for the replacement of high-flow toilets (older than 1992 that use 3.5 gpf or greater) with qualifying efficient water sense models.

7.5.1.4 Water Sense Specification (WSS) for New Residential Development

The City adopted a California Green Building Standard in 2011 (Chapter 9.50 in Appendix K). The Indoor Water Use Efficiency Ordinance that was adopted in 2010, combined with the Green Building Standards will reduce water consumption through the increased plumbing code requirements.

The 2010 California Green Building Standards Code (CAL Green Code) that went into effect in January 2011 sets mandatory green building measures, including a 20 percent reduction in indoor water use, as well as dedicated meter requirements and regulations addressing landscape irrigation and design. Local jurisdictions, at a minimum, must adopt the mandatory measures; CAL Green Code also identifies voluntary measures that set a higher standard of efficiency, which can also be adopted.

The City's adopted Green Building Standard sets forth minimum green building requirements within the City of Millbrae for all construction projects requiring a building permit. This ordinance incorporates all of the Mandatory Measures of the 2010 California Green Building Code and adds additional requirements for additions and remodel projects. The Green Building Standard also includes green building compliance for non-residential projects.

In addition to the Green Building Standard, Title 9, Chapter 9.50, a new ordinance, the Indoor Water Use Efficiency Ordinance, Title 8, Chapter 8.45, was adopted by the City in 2010. This ordinance also requires water saving measures and applies to new developments and remodels of a specified size and requires that water fixtures meet minimum standards for toilets, urinals, faucets, clothes washers, dish washers, ice machines, pre-rinse spray valves and other items. In light of the limited water supply available to the City through the Hetch Hetchy System administered by the SFPUC, the water use efficiency practices required in this ordinance are intended to achieve the following goals:

- To encourage the conservation of natural resources;
- To increase water efficiency and lower water costs;
- To reduce the operating and maintenance costs for buildings;
- To promote a healthier indoor environment;
- To give clearer guidance to ensure compliance with State and Federal law.

7.5.1.5 Commercial, Industrial, and Institutional (CII) (formerly BMP 9)

The City provides water audits, HET rebates, water saving devices and other resources for commercial accounts. City staff continues to work with the 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.

Based on the 2009-2010 fiscal year water delivery data, the number of CII customers in the City service area is 352, accounting for approximately 5 percent of connections and 21 percent of total 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, bars, and churches. The City's facilities and schools are classified as "institutional/government" use.

7.5.1.6 Large Landscape Conservation Program (formerly BMP 5)

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 visit 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 holds irrigation workshops for the community.

In the 2009-2010 fiscal year, the City delivered about 170 AF of potable water to irrigation accounts. Currently, there are 80 irrigation customers (parks, golf courses, and other irrigation accounts), accounting for approximately 12 percent of connections and 7 percent of total demand.

7.6 Additional Water Conservation Demand Measurement Measures

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

7.6.1 Residential Landscape Education

Water-Wise workshops are held every spring and fall on water-wise landscape design, efficient irrigation systems, native and low-water use plants, and sustainable gardening. The workshops are widely advertised and well attended. Participants are provided with water conservation handouts and water saving devices. Water-wise landscaping brochures are distributed to the public at various locations and at events and are posted on the City's website.

7.6.2 Water-Wise Landscape Award Program

The City's Community Preservation Commission 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.

7.6.3 Bay Area Green Gardener Program

The Bay Area Green Gardener Program was piloted in the County in 2010 and held in Redwood City. The program was promoted through the San Mateo Countywide Water Pollution Prevention Program, which the City participates in, and through BAWSCA. The program educates and certifies residential landscapers in resource efficient and pollution prevention landscape practices. Certified Green Gardeners utilize practical, sustainable landscaping skills to reduce water use, to select the most appropriate plants including California natives, to build nutrient rich soils by promoting a plant's natural cycles, and to prune selectively and properly to compliment the natural form and needs of the plant. Participants are also trained in integrated pest management and the use of alternatives to pesticides and herbicides. The certification level training consists of a ten week series and is offered in both English and Spanish.

7.6.4 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. In 2009, a water audit was done for City facilities to assess water use and the flow of the various fixtures. Water saving devices were installed, including showerheads and faucet aerators, at all City facilities. Water Conservation posters were placed in most City facility bathrooms reminding employees and the public to conserve water. City facilities will continue to be monitored. In addition, some of the City parks are a part of the Large Landscape Water Budget Program.

7.6.5 Evaluation of DMM Effectiveness and Estimate of Conservation Savings

In addition to the gallons per capita per day (GPCD) metric described in Section 7.7 below, the City evaluates the effectiveness of its BMPs and estimates their conservation savings by dividing annual potable water demand by total number of service connections. Since the fiscal year 2005-2006, the City has reduced potable water consumption by 15 percent, from 2,965 AFY (2.65 mgd) to 2,513 AFY (2.24 mgd) (see Figure 2-1), while the total number of customers slightly increased from 6,411 to 6,504 since the fiscal year 2005-2006. It should be noted that the City's gpcd declined significantly, from 126 gpcd for the fiscal year 2005-2006 to 104 gpcd for the fiscal year 2009-2010.

7.7 City of Millbrae SBX7-7 Compliance

As shown in Table 7-2, the gpcd option for MOU compliance and SBX7-7 targets are consistent with one another. The City's 2020 SBX7-7 compliance goal is 113 gpcd (Table 7-2). As of 2010 (based on the fiscal year 2009-2010), the City's total demand is at 104 gpcd, which is below the MOU target of 115 gpcd by 2018. However, as shown in Figure 2-1 in Section 2, the City has seen some decline in demands in recent years and the current water use in 2010 was lower than the last four years. This lower demand is most likely linked to water conservation programs, a rate increase, the recent economic downturn, and a cooler than normal wet season. However, the City continues to see some development activity in the near-term and water demand is anticipated to increase as the City population and economic activity increases in the City service area.

As described in Section 2.4, baseline per capita water use was estimated using the guidelines stated by the MOU and Appendix A of DWR's report *"Methodologies for Calculating Baseline and Compliance Urban per Capita Water Use"*. The baseline gpcd basis for the City is based on the 10-year period since the City's recycled water use in 2008 was less than 10 percent of total water use. In order to maintain consistency with the SBX7-7 planning process, the City has chosen the gpcd alternative for complying with the MOU and Method 3. However, the City's target of 124 gpcd from Method 3 is greater than 95 percent of the 5-year base. Therefore, the City's gpcd target is adjusted to be 95 percent of the 5-year base daily gpcd of 119 gpcd or 113 gpcd per DWR guidelines and to comply with SBX7-7.

Table 7-2
City of Millbrae Compliance Targets

	Baseline (gpcd)	Target Year		
		2015	2018	2020
MOU/AB 1420	119		115	
SBX7-7	119	116		113

The City recognizes the need to continue conservation efforts and programs in order to continue to meet both its SBX7-7 and gpcd requirements in the future. Included in the programs considered for implementation are the following:

1. The Green Building Standards and the Indoor Water Use Efficiency Ordinance, recently adopted by the City in 2010 and 2011, respectively, is anticipated to reduce water consumption through the increased plumbing code requirements.
2. Pricing: The City is evaluating tiered water rates for future implementation to encourage even greater water savings. The rate increase enacted in 2009 has already had impact on water consumption.
3. Landscape: The City will continue to provide residential and landscape audits to its customers and promote water efficient landscape.
4. The City will continue to evaluate the use of recycled water to supplement the water supply from the SFPUC.

Section 8: Water Shortage Contingency Planning

8.1 Overview

The City's detailed Water Shortage Contingency Plan (WSCP), updated in 2011 (City of Millbrae, 2011), is found in Appendix L and includes 4 major sections:

1. Introduction,
2. Assessing Water Supply and Demand,
3. Demand Reduction Program, and
4. Implementation

The overarching goals of the City's WSCP are as follows and address water shortages of varying magnitudes:

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

The sections that follow summarize the relevant content of the City's updated WSCP.

8.2 Coordinated Planning

As previously mentioned, the City is a member of BAWSCA, an association of 26 member agencies that purchase water from the SFPUC for distribution and resale to member agency customers. As noted earlier, the City is 100 percent dependent on imported water from the SFPUC and 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, described in Section 6.6, 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.

The annual allocation between the SFPUC and the collective Wholesale Customers is as shown in Table 8-1:

Table 8-1
Water Shortage Allocations Between SFPUC and Wholesale Customers
(Annual Basis)

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 percent or less. The SFPUC and Wholesale Customers recognize the possibility of a drought or other emergency 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 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 allocations set forth in Table 8-1 in order to mitigate undue hardships that might otherwise be experienced by individual Wholesale Customers or Direct City and County of San Francisco Water 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 percent, 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.

8.3 Stages of Action to Respond to Water Shortages

As described in Section 3 of the WSCP, the City has identified a five stage approach for dealing with water shortages, which are summarized in Table 8-2.

Table 8-2
Water Shortage Stage and Magnitude of Water Shortage

Condition	Stage	Magnitude of Water Shortage	Type of Program
Water Shortage Alert	1	0-5%	Voluntary with Minimal Usage Restrictions
Water Shortage Warning	2	6-15%	Mandatory
Water Shortage Emergency	3	16-25%	Mandatory
Severe Water Shortage Emergency	4	26-35%	Mandatory
Critical Water Shortage Emergency	5	36-50%	Mandatory

Each stage of water shortage and the actions necessary to achieve the associated demand reduction are detailed in Section 3 of the WSCP (Appendix L).

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 described in greater detail in Section 3.2 of the City's WSCP found in Appendix L.

As described in Section 3.3 of the City's WSCP, the recommended allocation system is based on the premise that, when water is in short supply, certain end users 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, as follows:

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

Based on the above usage priorities, the City has estimated the allocation to each type of priority as summarized in Table 8-3.

Table 8-3 Reduction in Water Delivery by Usage Priority
 (percent of normal deliveries)

Stage	Overall System Shortfall:	Health/Safety	Business	Irrigation
2	15%	95%	95%	64%
3	25%	95%	90%	34%
4	39%	90%	85%	12%
5	50%	75%	67%	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 usage 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 cutback 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.

A prime concern of any WSCP is maintaining sufficient water for public health and sanitation. Table 8-4 below presents the health and safety allocation for residential customers in terms of gallons per person per day under the four deficit conditions. Current indoor water use averages 58 gallons per person per day for single residential accounts and about 62 gallons per person per day for multi-family accounts. In all but the most extreme case, 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, assuming they have been fitted with water conserving fixtures and leakage is minimized. At a 50 percent deficiency, even highly water-efficient households would have to take additional actions to get their usage down to the upper 30 or low 40 gallons per person per day.

Table 8-4 Health & Safety Indoor Residential Use

Deficiency Condition	Health / Safety Allocation	Single Family (gal/person/day)	Multiple Family (gal/person/day)
No deficiency	100%	58	50
15%, 25%	95%	55	47
39%	90%	52	45
50%	75%	43	37

The estimates in Table 8-4 are broken down in accordance with the per capita Health and Safety Interior Water Quantity Calculations found in Table 8-5 as found in Section 3.3 of the City's WSCP. Table 8-6 shows potential reduction of the per capita Health and Safety Interior Water Quantity Calculation with habit changes incorporated.

Table 8-5
Per Capita Health and Safety Interior Water Quantity Calculations

	Non-Conserving Fixtures		Conserving Fixtures	
Toilets	5 flushes x 3.6 gpf =	18.0	5 flushes x 1.6 gpf =	8.0
Showers	12.7 shower/2.6 bath	15.3	9.2 shower/2.6 bath	11.8
Washers	1/3 load	14.7	1/3 load	7.8
Kitchens	Faucets & dishwasher	10.0	Faucets & dishwasher	6.7
	Total gpcd	58.0		34.3

Table 8-6
Per Capita Health and Safety Interior Water Quantity Calculations With Habit Changes

	Non-Conserving Fixtures		Conserving Fixtures	
Toilets	4 flushes x 3.6 gpf =	14.4	4 flushes x 1.6 gpf =	6.4
Showers	9.2 shower/2.4 bath	11.6	9.2 shower/2.4 bath	11.6
Washers	1/4 load	11.0	1/4 load	6.0
Kitchens	Faucets & dishwasher	8.0	Faucets & dishwasher	6.0
	Total gpcd	45.0		30.0

Note: Standard toilets that may be purchased use 1.6 gpf; however the City provides rebates for and promotes HETs that use 1.28 gpf.

Applying the values found in Table 8-5, the household water demand per day for Health and Safety with non-conserving fixtures is 174 gpd for a single-family residence (3 persons per household) and 116 gallons per day for a multi-family unit (2 persons per household). This is 87 percent of current average usage for a single-family residence and 96 percent of current average usage for a multi-family unit.

8.4 Minimum Water Supply Available During Next Three Years

The minimum water supply available during the next three years would occur during a three-year multiple-dry year event between 2012 and 2014. As shown in Table 8-7, the total supplies range from approximately 2,528 AFY to 2,348 AFY during the next three years. When comparing these supplies to the demand projections (2,936 AFY in 2015) provided in Sections 2 and 6 of this Plan, the City has adequate supplies available to meet projected demands should a multiple-dry year period occur during the next three years.

Table 8-7
Three-Year Estimated Minimum Water Supply (AFY)

Water Supply Sources	2011	2012	2013
Water purchased from:			
SFPUC	2,513	2,333	2,333
Groundwater	0	0	0
Desalination	0	0	0
Supplier surface diversions	0	0	0
Transfers/Exchanges In or Out	0	0	0
City of Millbrae Recycled Water	15	28	28
Total Potable (AFY)	2,528	2,361	2,361
Total Potable (MGD)	2.26	2.11	2.11

8.5 Actions to Prepare for Catastrophic Interruption

8.5.1 General

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 occur as a result of drought conditions that may extend several months or span several years in duration. For shorter 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 shorter term water supply interruptions and outages. The flow chart showing the immediate actions the City will perform during a catastrophic event is included in Appendix E of the WSCP.

Sections 350-359 of the California Water Code provides the authority for the governing body of a water agency to declare a water shortage emergency, especially after a catastrophic event. Once having done so, the local agency is provided with 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.

As described in Section 3.4.5 of the WSCP, a Critical Water Shortage Emergency (Stage 5) is a situation where an imminent and extraordinary crisis threatening health, safety, and security of the entire community has occurred such as after an extreme seismic event and/or regional power outage. Under this dire situation, extreme measures are necessary to cut back water use by up to half the normal amount, or more, depending on the supply availability. 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 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.

From a regional perspective, emergency response for the SFPUC RWS has been planned for by the SFPUC through the SFPUC RWS Emergency Response and Recovery Plan (ERRP), completed in 2003 and updated in 2006. The purpose of the EERP is to describe the SFPUC RWS emergency management organizations, roles and responsibilities within those organizations, and emergency management procedures. This WSCP addresses how to respond to and to recover from a major RWS seismic event, or other major disaster. The EERP complements the other SFPUC emergency operations plans at the department, division and bureau levels for major system emergencies.

The SFPUC has also prepared the SFPUC RWS Notification and Communications Plan. This plan, which has been updated several times since it was first prepared in 1996 (most recently in July of 2010), provides contact information, procedures and guidelines to be implemented by the following entities when a potential or actual water quality problem arises. The SFPUC Water Supply and Treatment Division, Water Quality Division, SFPUC Wholesale Customers, BAWSCA, and City Distribution Division are considered to be a customer for the purposes of this plan. The plan treats water quality issues as potential or actual supply problems, which fall under the emergency response structure of the EERP.

8.5.2 Water Sources

The City is reliant on SFPUC for its potable water supplies. As such, SFPUC's preparation for a catastrophic event is critical to the City. As described in the 2010 Public Review Draft UWMP for SFPUC, the WSIP projects include several projects located in San Francisco to improve the seismic reliability of the in-City distribution system, as well as many projects related to the SFPUC RWS to address both seismic reliability and overall system reliability. All WSIP projects are expected to be completed by December 2015.

In addition to the improvements that will come from the WSIP, San Francisco has already constructed the following system interties for use during catastrophic emergencies, short-term facility maintenance and upgrade activities, and in times of water shortages:

- A 40 mgd system intertie between the SFPUC and SCVWD (Milpitas Intertie);
- A 35 mgd intertie with EBMUD allowing EBMUD to serve the City of Hayward's demand and/or supply the SFPUC directly (and vice versa); and,

- One permanent and one temporary intertie to the South Bay Aqueduct, which would enable the SFPUC to receive State Water Project water.

The WSIP intertie projects include the EBMUD-Hayward-SFPUC Intertie. The WSIP also includes projects related to standby power facilities at various locations. These projects will provide for standby electrical power at 6 critical facilities to allow these facilities to remain in operation during power outages and other emergency situations. Permanent engine generators will be provided at four locations (San Pedro Valve Lot, Millbrae Facility, Alameda West, and Harry Tracy Water Treatment Plant), while hookups for portable engine generators will be provided at two locations (San Antonio Reservoir and Calaveras Reservoir). SFPUC's existing and future local groundwater and surface supplies provide redundancy to the Hetch Hetchy supplies. (SFPUC, 2010)

In addition to the SFPUC interties, the Table 8-8 summarizes the actions the City has discussed in preparation for a water supply catastrophe. Coordination with SFPUC is a key element to the preparative actions that the City has undertaken.

Table 8-8
Preparative Actions for Catastrophic Interruption

Action	Actions Taken
Determined what constitutes a proclamation of a water shortage	✓
Stretch existing water storage	✓
Develop emergency storage facilities	✓
Obtain additional water supplies	✓
Develop alternative water supplies.	✓
Determine funding sources	✓
Contact and coordinate with other agencies	✓
Created an Emergency Response Team/Coordinator	✓
Created a catastrophe preparedness plan	✓
Put employees/contractors on-call	✓
Developed methods to communicate with the public.	✓
Developed methods to prepare for water quality interruptions	✓

8.6 Mandatory Prohibitions During Shortages

As summarized in Table ES-2 of the WSCP in Appendix L, each stage of water shortage includes a range of prohibitions such as prohibitions on exterior washing of structures, on turf irrigation, connection of new development, outdoor irrigation, and water rationing in Stages 4 and 5, the severe and critical water shortages. These prohibitions are implemented through adoption of this UWMP and the WSCP incorporated herein and are summarized in Table 8-9. Table 8-10 presents proposed excess water use charge schedule.

Table 8-9
Drought Shortage Plan Action Levels

Prohibition	Stage When Prohibition is Mandatory				
	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
No washing down of paved surfaces	X	X	X	X	X
Adjust sprinklers and irrigation systems to avoid overspray, runoff, and waste.	X	X	X	X	X
Irrigate residential and commercial landscape before dawn	X	X	X	X	X
Residential and Commercial landscape irrigation only at designated days/times		X	X	X	X
Residential and Commercial landscape irrigation budgets		X	X	X	X
Use water efficient landscaping	X	X	X	X	X
Residential and Commercial landscape irrigation of only most valuable plant and trees for survival				X	
Encourage appropriate use of gray water	X	X	X	X	X
Use water efficient indoor devices	X	X	X	X	X
Use re-circulated water to operate decorative fountains, ponds, lakes		X	X	X	X
Water served upon request at restaurants	X	X	X	X	X
No operation of ornamental fountains			X	X	X
No filling of pools or aesthetic water features	X	X	X	X	X
Use bucket and a hand-held hose with a positive shut-off nozzle, mobile high-pressure/low-volume wash system, or at a commercial site that re-circulates (reclaims) water onsite to wash vehicles		X	X	X	X
No car washing except at commercial car washes				X	X
No new meters (exceptions in ordinance)			X	X	X
No new landscaping in new development				X	X
No turf/lawn irrigation				X	X
No outdoor irrigation					X
Repair leaks within 72 hours			X	X	X
Repair leaks within 48 hours				X	X
Repair leaks repair within 24 hours					X

Table 8-10
Proposed Excess Water Use Charge Schedule

% Over Allocation	Excess Use Charge Per HCF
0 - 10%	\$5.0
10.1% - 20%	\$13.0
20.1% - greater	\$25.0

8.7 Consumptive Reduction Methods During Restrictions

8.7.1 Supply Shortage Triggering Levels

As described earlier, the City will manage water supplies to minimize the social and economic impact of water shortages. The WSCP is designed to provide a minimum 50 percent of normal supply during a severe or extended water shortage as in a Stage 5 situation. As the water purveyor, the City must provide the minimum health and safety water needs of the community at all times. The rationing program triggering levels shown below were established to ensure that this goal is met.

Rationing levels may be triggered by a shortage in one water source or a combination of sources if more become available. Although an actual shortage may occur at any time during the year, a drought shortage (if one occurs) is usually forecasted by the SFPUC on or about April 1 each year.

The City's potable water sources are limited to purchases from SFPUC. Rationing levels may be triggered by a supply shortage or by high turbidity or other water quality event in the SFPUC RWS. Triggers automatically implement the more restrictive level. Specific criteria for triggering the City's rationing levels are shown in Table 8-11.

Table 8-11
Water Deficiency Triggering Levels

Stage	Percent Shortage
1	0% - 5% water deficiency
2	6% - 15% water deficiency
3	16% - 55% water deficiency
4	26% - 35% water deficiency
5	36% - 50% water deficiency

The City's supply is reliable because of the SFPUC's diverse supply portfolio and due to the various sources of supply available through intertie, The City has prepared contingencies for the various supply reductions as shown in Table 8-12. For example, a Level 1 can be triggered by the criteria in Table 8-11 and one of the additional criteria in Table 8-12.

Table 8-12
Water Deficiency Stages and Additional Triggering Criteria

Level	Percent Shortage	Current Supply	Future Supply	Water Quality	Disaster
1	0 to 5 % water deficiency	Declaration of below normal year OR	Projected supply is insufficient to provide 90% of "normal" deliveries for the next two years OR	Contamination of 10% of water supply exceeding the primary drinking water standards	
2	6 to 15 % water deficiency	Declaration of below normal year OR	Projected supply is insufficient to provide 80% of "normal" deliveries for the next two years OR	Contamination of 20% of water supply exceeding the primary drinking water standards	
3	16 to 25 % water deficiency	Third consecutive below normal year is declared	Projected supply is insufficient to provide 80% or less of "normal" deliveries for the next two years OR	Contamination of 30% of water supply exceeding the primary drinking water standards	Disastrous Loss of System Functionality
4	26 to 35 % water deficiency	Fourth consecutive below normal year is declared	Projected supply is insufficient to provide less than 80% of "normal" deliveries for the next two years OR	Contamination of 40% of water supply exceeding the primary drinking water standards	Disastrous Loss of System Functionality
5	36 to 50 % water deficiency	Fifth consecutive below normal year is declared	Projected supply is insufficient to provide less than 80% of "normal" deliveries for the next two years OR	Contamination of 50% of water supply exceeding the primary drinking water standards	Disastrous Loss of System Functionality

8.7.2 Consumption Limits

As described in Sections 3.4.4 and 3.4.5 of the WSCP, the City has established the following allocation method for each customer type (Table 8-13).

Table 8-13
Rationing Allocation Method

User Type	Allocation Method
Single Family	Modified Per-capita Goleta Water District Method
Multi-family	Dwelling units per water service account or appropriate alternative
Commercial	Percentage Reduction of Prior Use in a Normal Year
Industrial	Percentage Reduction of Prior Use in a Normal Year
Governmental/Institutional	Percentage Reduction of Prior Use in a Normal Year
Agricultural/Landscape-Permanent	Percentage Reduction - vary by efficiency
Agricultural/Landscape-Annual	Percentage Reduction - vary by efficiency
Recreational Percentage	Percentage Reduction - vary by efficiency
New Customers	Modified Per-capita Goleta Water District Method

Table 8-14
Water Rationing Schedule: Single Family Residential Account

	<u>ccf/month</u>	<u>Gallons per day:</u>
Up to four persons:	11	265
Each additional person:	2	50
<i>Example monthly allocation for a 6-person household:</i>		
Base allocation:	11 ccf	
2 additional persons x 2 ccf per person	+ 4 ccf	
Monthly Allocation	= 15 ccf	= 374 or 62 GPCD

Key: ccf – hundred cubic feet

Based on current and projected customer demand, water will be allocated to each customer type by priority and rationing level during a declared water shortage. This gives the City a more accurate view of the usual water needs of each customer and provides additional flexibility in determining allotments and reviewing appeals.

City staff shall classify each customer and calculate each customer's allotment according to the Water Rationing Allocation Method seen in the above table and described in the WSCP. Customers shall be notified of their classification and allotment by mail before the effective date of the Water Shortage Emergency. New customers will be notified at the time the application for service is made. In a disaster, prior notice of allotment may not be possible; notice will be provided by other means. Any customer may appeal City staff's classification on the basis of use or the allotment on the basis of incorrect calculation.

8.7.3 New Demand

During any declared water shortage emergency requiring mandatory rationing, the City recommends that the Building and Public Works Departments continue to process applications

for grading and building permits, but not issue the actual permits until mandatory rationing is rescinded.

8.8 Penalties for Excessive Use

Section 3.5.1 of the WSCP describes the penalties for excessive use which are summarized in Table 8-9. It is recommended that a three tier excess use penalty structure be implemented to avoid very large penalties for households that make a good faith effort to stay within their allocation.

8.9 Financial Impacts of Actions During Shortages

The City estimates that the financial impact of a short-term demand reduction to range from \$190,975 in a Stage 1 shortage alert situation to \$1,909,752 in a Stage 5 critical water shortage emergency. Options to lessen or overcome the revenue shortfall that may be considered include deferring planned capital improvements and/or considering possible rate adjustments or surcharges. Section 4.5 of the WSCP describes the financial impact in greater detail.

8.10 Mechanism to Determine Reductions in Water Use

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 frequent basis. In severe stages of a water shortage, consumption data would be evaluated daily and the status reported to the Public Works Director.

Production

If the trend in consumption is such that the rate of drawdown at Hetch Hetchy is greater than anticipated, the City Manager and Council are notified so that corrective action (such as increased publicity and enforcement or consideration of declaring the next higher stage) can be taken.

Disaster Shortage

Mechanisms to determine reductions in water use during a disaster shortage are discussed in the City's Emergency Response Plan (Appendix L).

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Appendices

- A. DWR Checklist
- B. Public Notification
- C. Resolution to Adopt the 2010 UWMP
- D. Water Supply Agreement and Water Sales Contract
- E. Water Rates
- F. Indoor Water Conservation Ordinance
- G. Water Quality Reports - 2008 and 2009
- H. SFPUC's Regional Water System Supply Reliability
- I. CUWCC Reporting
- J. Water Conservation Ordinance
- K. Green Building Ordinance
- L. 2011 Water Shortage Contingency Plan and Emergency Plan

The appendices on the enclosed disk are presented with the Urban Water Management Plan and are included herein.

Appendix C – City of Millbrae Water Supply Contracts

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

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- B Wholesale Customer Regional Water System Purchases 2007-2008 (Section 1.03)
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- D Procedure for Pro Rata Reduction of Individual Supply Guarantees if Total Use Exceeds 184 MGD (Section 3.02)
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- N-1 Balancing Account/Rate Setting Calculation Table (Section 6.03.A.3.a)

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- N-3 Schedule of Projected Water Sales, Wholesale Revenue Requirement and Wholesale Rates (Section 6.03.A.3.c)
- O Statement of Wholesale Revenue Requirement/Changes in Balancing Account (Section 7.02.B.1)
- P Management Representation Letter (Section 7.02.B.5)
- Q San Jose and Santa Clara Service Areas (Section 9.06)

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:

<u>Attachment</u>	<u>Name</u>
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 EERP. The SFPUC shall periodically review, and the Commission may amend, the EERP 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 EERP 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 San Francisco Decisions in 2018 Regarding Future Water Supply

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. Transmission and Distribution

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. Revenues Not Credited to Payment of Wholesale Revenue Requirement.

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 ensuing 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 Hatch Hatchy Enterprises. Wholesale working capital shall be calculated separately for the Water and Hatch Hatchy Enterprises.

C. Each month, the sum of the Water Enterprise and Hatch Hatchy 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 Hatch Hatchy 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 Hatch Hatchy 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 City of Hayward

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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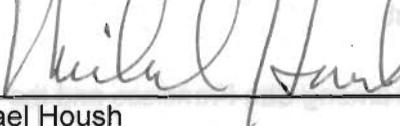
IN WITNESS WHEREOF the parties have executed this Agreement by their duly authorized officers.

CITY AND COUNTY OF SAN FRANCISCO
Acting by and through its Public Utilities
Commission

By: 
Edward Harrington
General Manager

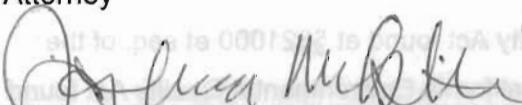
Date: June 24, 2009

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

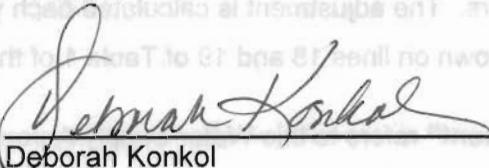
By: 
Joshua D. Milstein
Deputy City Attorney

CITY OF MILLBRAE,
a municipal corporation

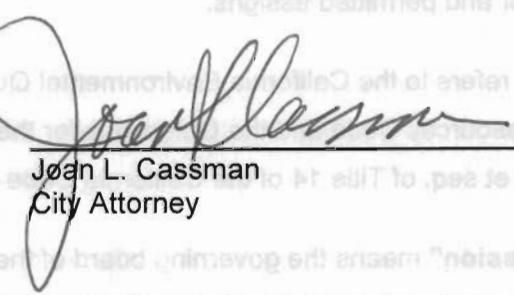
By: 
Robert G. Gottschalk
Mayor

Date: May 26, 2009

ATTEST:


Deborah Konkol
City Clerk

Approved as to form:


Joan L. Cassman
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.

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.

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“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 Hatch Hatchy 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. Hatch Hatchy Water Only Assets
4. Water-Related portion (45 percent) of Hatch Hatchy Joint Assets

“Power-Only,” when used with reference to Hatch Hatchy 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 Hatch Hatchy 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
Esterio 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

WHOLESALE CUSTOMER	100 Cubic Feet *	(1)	(2)
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:

$$12 \text{ MGD} - 0.22 \text{ MGD} = 11.78 \text{ MGD}$$

* * * * *

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.]

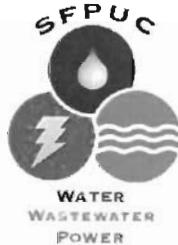
IN WITNESS WHEREOF, the parties hereto have executed this Contract, to become effective upon the effectiveness of the WSA, by their duly authorized representatives.

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

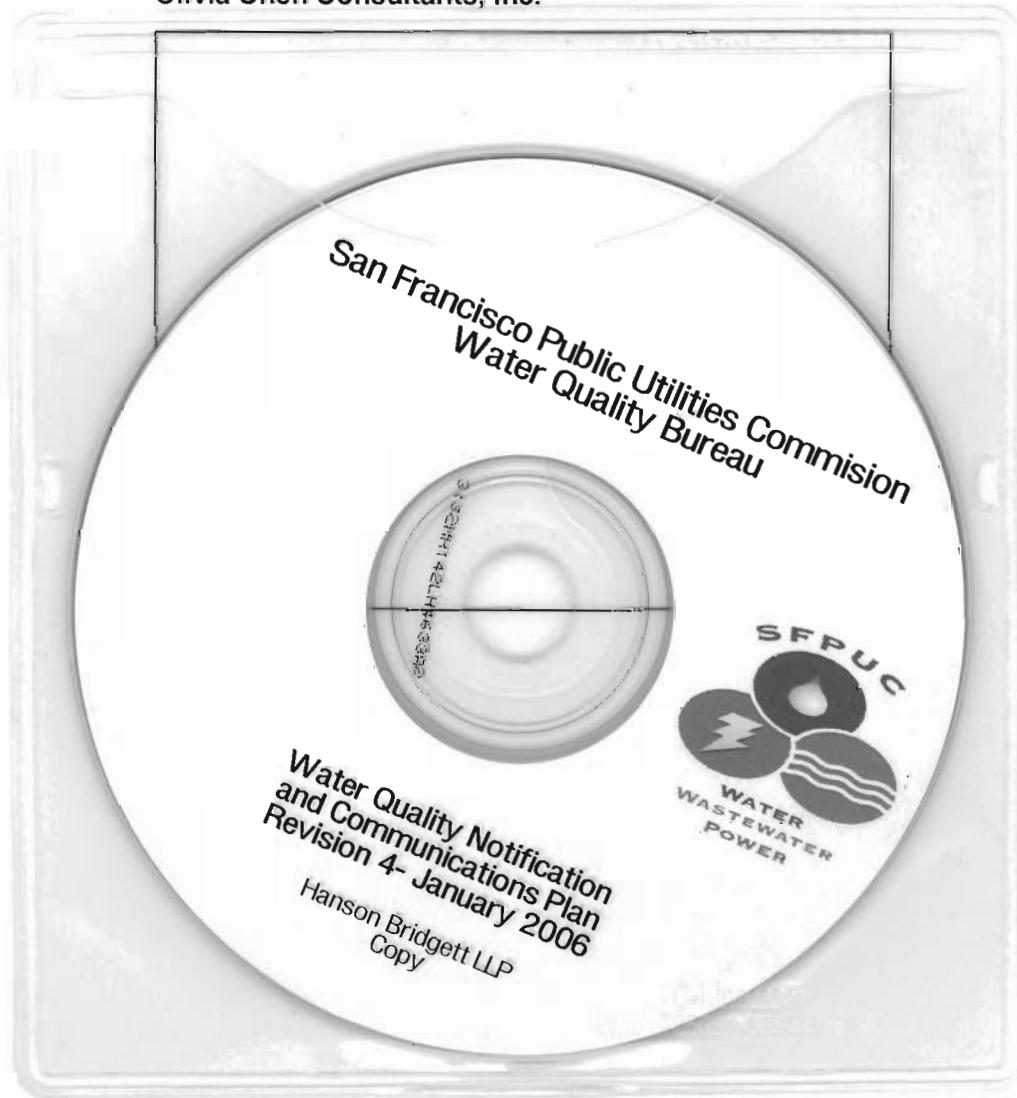
Note: This attachment is provided for the convenience of the prospective parties to the Water Supply Agreement and associated individual contracts. The format may be modified as desired by San Francisco and Wholesale Customer, subject to Section 9.01 of the WSA.

ATTACHMENT G

WATER QUALITY NOTIFICATION AND COMMUNICATIONS PLAN REVISION 4- JANUARY 2009



Updated by:
Water Quality Engineering
Olivia Chen Consultants, Inc.



1914841.1

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.

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 effect 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 15 th 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 15 th 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

ATTACHMENT I

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

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)

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

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

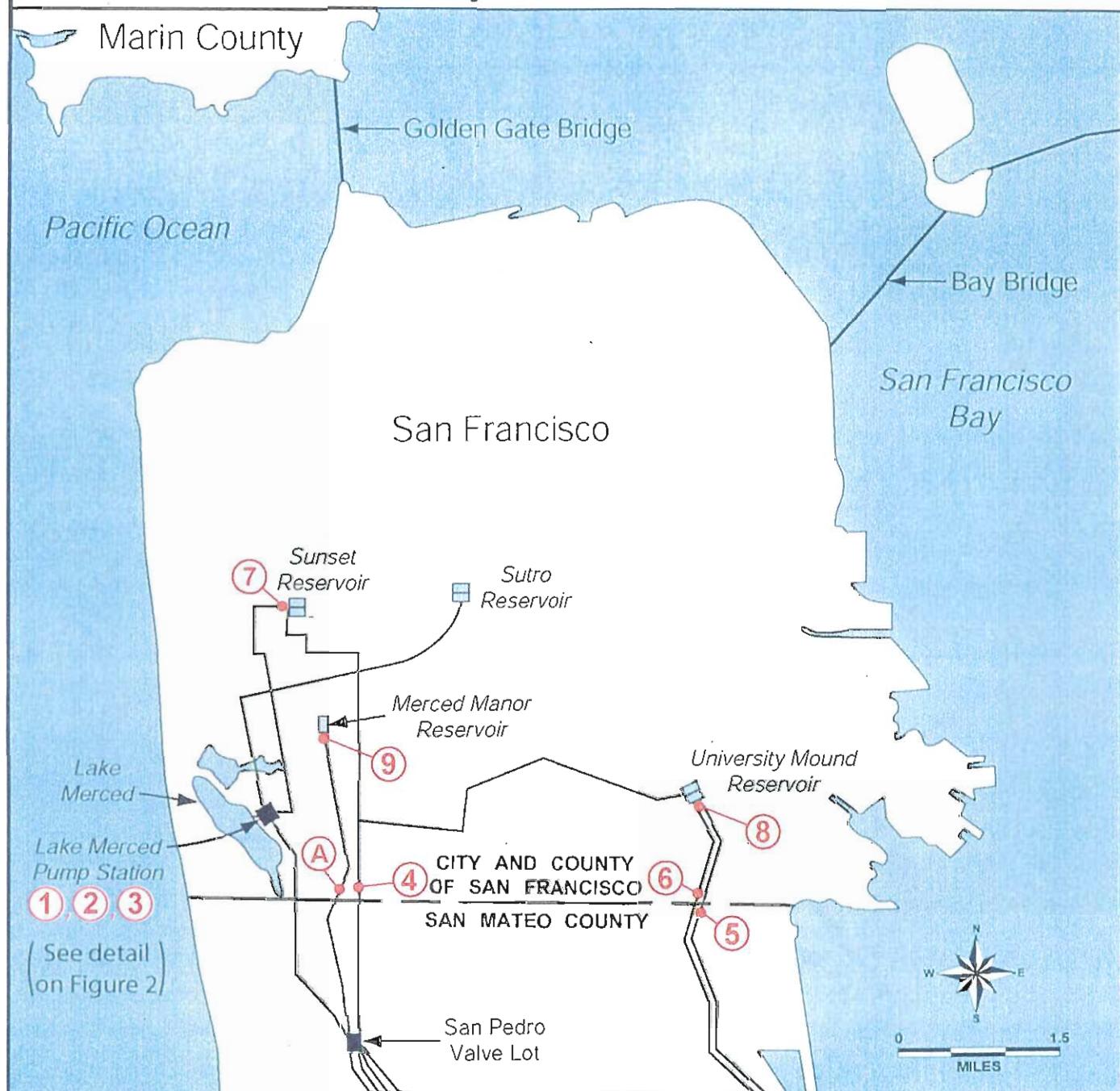
Within fourteen (14) working days after the beginning of each quarter, the metering consultant shall submit a written progress report of the work performed during the previous quarter. Each quarterly report will describe the results of the meter calibrations and any other tasks performed. The report 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.

FIGURE 1

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

FIGURE 2

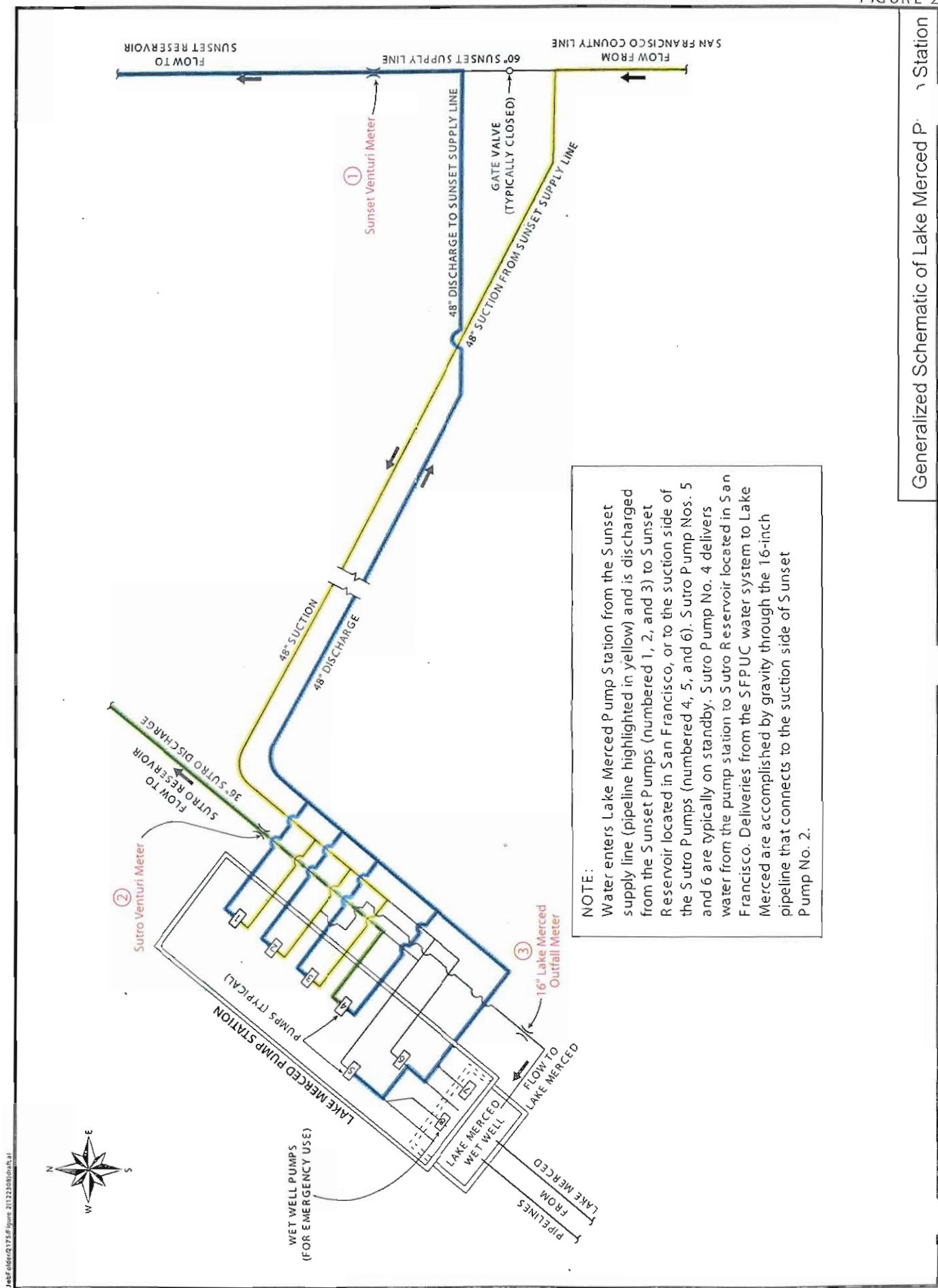


FIGURE 3

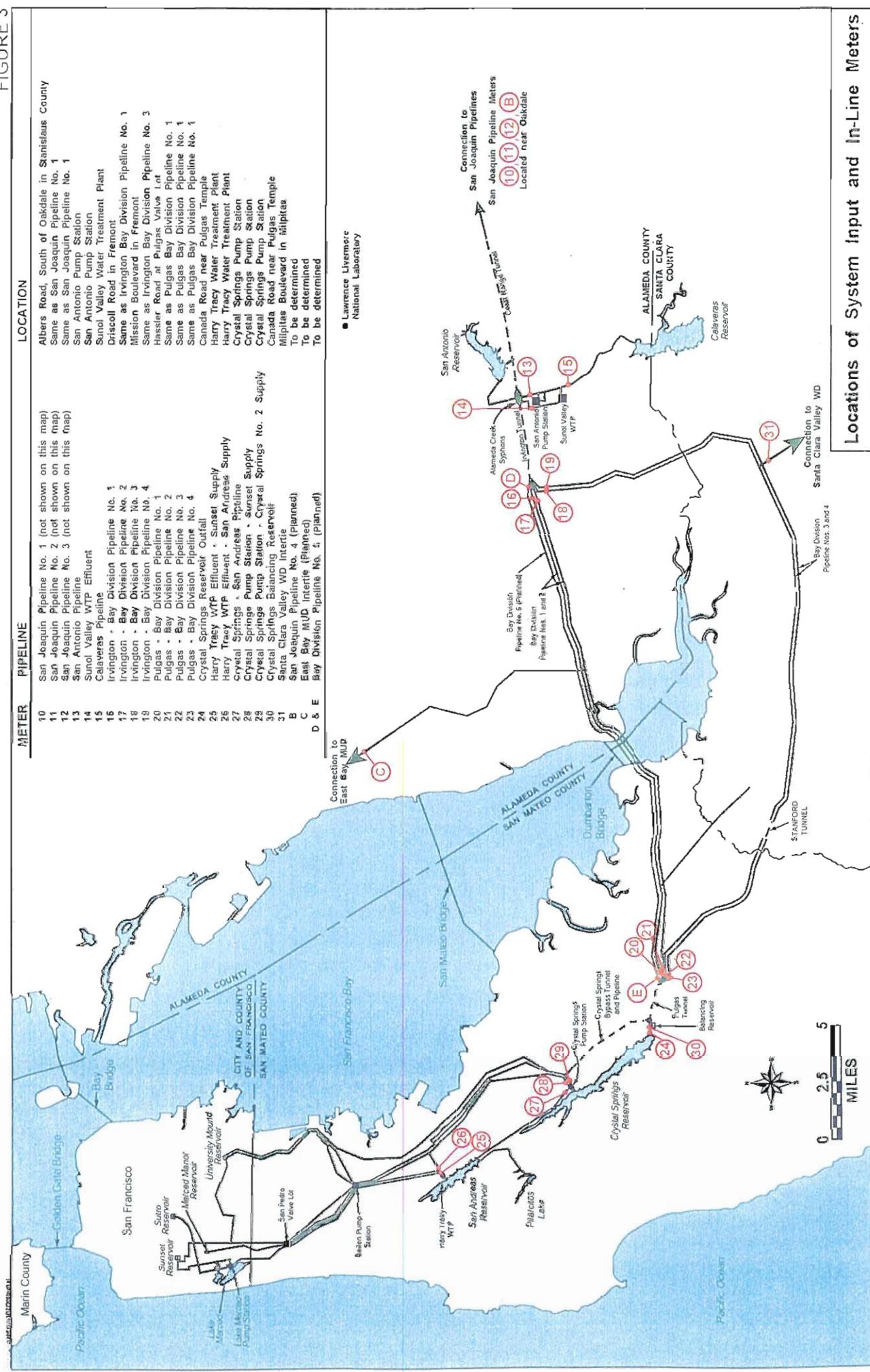


Table 1
Base Usage (mgd) and Allocation Rates

(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

<u>County-Line Meters</u>	
<u>Meter</u>	<u>Pipeline</u>
1	Sunset
2	Sutro
3	Lake Merced Outfall
4	San Andreas No. 2
5	Crystal Springs No. 1
6	Crystal Springs No. 2
A	San Andreas No. 3 (Planned)

<u>In-City Terminal Reservoirs</u>	
<u>Meter</u>	<u>Reservoir</u>
7	Sunset Reservoir
8	University Mound Reservoir
9	Merced Manor Reservoir

<u>Location</u>
Lake Merced Pump Station
Lake Merced Pump Station
Lake Merced Pump Station
Junipero Serra (Hwy. 280) South of Belle Ave.
PG&E Martin Service Center Yard
Tamasco Ct. South of Sunnydale Ave.
To be determined

Table 3
Locations of SFPUC System Input and In-Line Meters

<u>Meter</u>	<u>Pipeline</u>	<u>Location</u>
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:	<ul style="list-style-type: none"> • Rosemount D/P transmitter • Honeywell recorder • SCADA 	
2. Sutro	36" Venturi	Lake Merced Pump Station
Associated Metering Equipment:	<ul style="list-style-type: none"> • Rosemount D/P transmitter • Honeywell recorder • SCADA 	
3. Lake Merced Outfall	16" Mag. Meter	Lake Merced Pump Station
Associated Metering Equipment:	<ul style="list-style-type: none"> • Honeywell recorder • SCADA 	
4. San Andreas No. 2	36" Venturi	Junipero Serra (Hwy. 280) south of Belle Avenue
Associated Metering Equipment:	<ul style="list-style-type: none"> • 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:	<ul style="list-style-type: none"> • 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:	<ul style="list-style-type: none"> • Yokogawa D/P transmitter • NLS display • AGM electronics • SCADA 	
In-City Terminal Reservoirs		
1. Sunset	Pressure Transducer	26 th Avenue and Ortega
Associated Metering Equipment:	<ul style="list-style-type: none"> • Honeywell recorder • SCADA 	
2. Merced-Manor	Pressure Transducer	23 rd Avenue and Ocean
Associated Metering Equipment:	<ul style="list-style-type: none"> • Honeywell recorder • SCADA 	
3. University Mound	Pressure Transducer	University Avenue and Bacon
Associated Metering Equipment:	<ul style="list-style-type: none"> • 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 Hatchy	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)
CUW 365 Cross Connection Controls
CUW 394 Watershed Land Acquisition
Total Additions
\$ 57,382,744
\$ 3,679,415
\$ 1,708,994
\$ 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	\$	\$	\$ -
CUW361		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		Joint	\$ 1,062,050	\$ -	\$ 1,062,050	\$	\$	\$ -
CUW365 Cross Connection Control		Joint	\$ 3,635,172	\$ 547,801	\$ 4,182,973	\$	\$	\$ -
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 CPS 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 S+PL		Joint	\$ 19,479,341	\$ 6,023,849	\$ 25,503,190	\$	\$	\$ -
CUW373		Joint	\$ 7,199,051	\$ -	\$ 7,199,051	\$	\$	\$ -
CUW374 Calaveras Dam		Joint	\$ 31,171,669	\$ 4,314,430	\$ 35,486,099	\$	\$	\$ -
CUW374		Joint	\$ 2,366,343	\$ -	\$ 2,366,343	\$	\$	\$ -
CUW378 CSP #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 Expansión		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		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 Environment Improvement		Joint	\$ 142,924	\$ 96,027	\$ 238,951	\$	\$	\$ -
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 Replace PCCP		Joint	\$ 50,808	\$ -	\$ 50,808	\$	\$ 35,616	\$ -
CUW202		Joint	\$ 285,003	\$ 64,256	\$ 349,259	\$	\$ 244,831	\$ -
CUW127 SCADA		Joint	\$ 2,365	\$ -	\$ 2,365	\$	\$ 1,658	\$ -
CUW356 New Crystal Springs Bypass Tunnel		Joint	\$ 50,029	\$ 2,481,274	\$ 2,531,303	\$	\$ 1,774,443	\$ -
CUW358 Sunset (N)		Joint	\$ 13,992,264	\$ 5,560,862	\$ 16,028,397	\$	\$ 2,470,835	\$ -
CUW387 Tesla Portal Disinfection		Joint	\$ 52,494,764	\$ 4,887,980	\$ 55,806,081	\$	\$ 1,105,241	Capitalized in FY 2008-09
CUW135		Joint	\$ 2,377,262	\$ (1,996)	\$ 1,223,945	\$	\$ 807,076	\$ -
CUW135 New Lines and Bypass Valves		Joint	\$ 45,413	\$ -	\$ 45,413	\$	\$ 31,835	\$ -
CUW143 HH Water Treatment Plan		Joint	\$ 153,983	\$ 620,156	\$ 774,139	\$	\$ 542,671	\$ -
CUW143		Joint	\$ 8,860	\$ -	\$ 8,860	\$	\$ 6,211	\$ -
CUW143		Joint	\$ 5,656	\$ -	\$ 5,656	\$	\$ 3,965	\$ -
CUW186 SVWTP IMPROVEMENT PROJECT-CPB-SFWD		Joint	\$ 709,972	\$ 8,817	\$ 718,789	\$	\$ 503,871	\$ -
CUW206		Joint	\$ 96,292	\$ -	\$ 96,292	\$	\$ 67,501	\$ -
CUW206 Tesla Portal/Thomas Shaft Emergency Disinfection		Joint	\$ 3,604	\$ -	\$ 3,604	\$	\$ 2,526	\$ -
CUW206		Joint	\$ 4,365	\$ -	\$ 4,365	\$	\$ 3,060	\$ -
CUW206		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 HTWTP ST Improvements		Joint	\$ 16,523	\$ -	\$ 16,523	\$	\$ 11,583	\$ -
CUW366		Joint	\$ 1,398,798	\$ 5,732,626	\$ 7,131,424	\$	\$	\$ -
CUW120 WATER QUALITY PLANNING STUDY		Joint	\$ 1,452,901	\$ -	\$ 1,452,901	\$	\$	\$ -
CUW164 WATER VULNERABILITY STUDY-UEB		Joint	\$ 577	\$ -	\$ 577	\$	\$ 404	\$ -
CUW181 STANDBY POWER FACILITIES		Joint	\$ 479	\$ -	\$ 479	\$	\$ 336	\$ -
CUW210 Millbrae Administrative Bldg Remodel		Joint	\$ 5,905	\$ -	\$ 5,905	\$	\$ 4,139	\$ -
CUW220 Calaveras Dam Evaluation		Joint	\$ 7,803	\$ 321,553	\$ 329,356	\$	\$ 230,879	\$ -
CUW227 Watershed Facilities and Fencing		Joint	\$ 308,971	\$ -	\$ 308,971	\$	\$ 216,589	\$ -
CUW228 Watershed Roads		Joint	\$ 190,552	\$ 206,448	\$ 397,000	\$	\$ 278,297	\$ -
CUW232 Crystal Springs Dam Discharge		Joint	\$ 358,434	\$ 85,337	\$ 443,771	\$	\$ 311,083	\$ -
CUW242 Demolition of Unsafe Structures		Joint	\$ 363,823	\$ -	\$ 363,823	\$	\$ 255,040	\$ -
CUW242		Joint	\$ 311,548	\$ 22,741	\$ 334,289	\$	\$ 234,337	\$ -
CUW261 Regional R&R - Storage		Joint	\$ 315	\$ -	\$ 315	\$	\$ 221	\$ -
CUW262 Regional R&R - Treatment		Joint	\$ 275,694	\$ 277,958	\$ 553,652	\$	\$ 388,110	\$ -
CUW262		Joint	\$ 1,236,895	\$ 409,282	\$ 1,646,177	\$	\$ 1,153,970	\$ -
CUW262		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	Planning - WSTD Sunol Quarry Reservoirs	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							
8.	Hetch Hetchy Water & Power							
CUH703	Priest Reservoir By-pass	Joint		47,164	\$ 47,164	\$ 21,224	\$ 13,626	
CUH762	SJPL Repairs	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	\$ -	\$ -	
CUH858	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 Corridor 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 Transmission 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	S25 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)

			<u>Water Assets</u>
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)
Jun-10	6,848,259	17,203,067	24,051,326
Jun-11	7,207,954	16,843,372	24,051,326
Jun-12	7,586,541	16,464,785	24,051,326
Jun-13	7,985,013	16,066,313	24,051,326
Jun-14	8,404,415	15,646,911	24,051,326
Jun-15	8,845,844	15,205,482	24,051,326
Jun-16	9,310,459	14,740,867	24,051,326
Jun-17	9,799,478	14,251,848	24,051,326
Jun-18	10,314,181	13,737,145	24,051,326
Jun-19	10,855,919	13,195,407	24,051,326
Jun-20	11,426,110	12,625,216	24,051,326
Jun-21	12,026,250	12,025,076	24,051,326
Jun-22	12,657,911	11,393,415	24,051,326
Jun-23	13,322,749	10,728,577	24,051,326
Jun-24	14,022,507	10,028,819	24,051,326
Jun-25	14,759,019	9,292,307	24,051,326
Jun-26	15,534,215	8,517,111	24,051,326
Jun-27	16,350,127	7,701,199	24,051,326
Jun-28	17,208,894	6,842,432	24,051,326
Jun-29	18,112,766	5,938,560	24,051,326
Jun-30	19,064,113	4,987,213	24,051,326
Jun-31	20,065,428	3,985,898	24,051,326
Jun-32	21,119,335	2,931,991	24,051,326
Jun-33	22,228,597	1,822,729	24,051,326
Jun-34	23,396,122	655,204	24,051,326
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)

	<u>Hetch Hetchy</u>
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	PTD	Available Balances	Notes
				Water / Assets	Expenditures	Expenditures	Encumbrances		
CUW257	WATERSHED PROTECTION	5W	AAAAACP	REGIONAL	1,448,720	29,653	413,529	141,643	893,548
CUW250	WATERSHED TRAILS&RECREATION IMPROV	5W	AAAAACP	REGIONAL	387,639	9,431	112,689	6,675	268,275
CUW261	REGIONAL WATER STORAGE RNR - BUDGET	5W	AAAAACP	REGIONAL	1,750,000	250,970	526,664	26,687	1,196,648
CUW242	DEMOLITION/UNSAFE STRUCTURES	5W	AAAAACP	REGIONAL	1,000,000	22,647	407,820	21,524	570,656
CUW263	CONVEYANCE TRANSMISSION - BUDGET	5W	AAAAACP	REGIONAL	7,825,000	763,603	3,378,543	125,990	4,320,466
CUW264	WATERSHED ROADS - BUDGET	5W	AAAAACP	REGIONAL	3,000,000	77,074	1,391,500	162,401	1,446,099
CUW262	TREATMENT FACSIM IMPROVE-BUDGET	5W	AAAAACP	REGIONAL	4,801,000	399,073	2,704,204	349,016	1,747,780
CUW168	ALAMEDA CREEK FISH RELEASE	5W	AAAAACP	REGIONAL	1,537,398	46,624	1,040,919	152,647	343,832
CUW231	MILLBRAE LAB CAPITAL IMPROVEMENTS	5W	AAAAACP	REGIONAL	770,398	19,119	532,135	0	237,865
CUW227	WATERSHED FENCE/S/FACILITIES	5W	AAAAACP	REGIONAL	3,000,000	206,222	2,223,776	581,926	194,298
CUW253	FACILITIES SECURITY PROJECT	5W	AAAAACP	REGIONAL	5,300,000	73,048	4,146,944	113,124	1,039,931
CUW210	MILLBRAE ADMIN BLDG INTERM REMODEL	5W	AAAAACP	REGIONAL	2,407,700	284,902	1,935,204	160	472,337
CUW228	WATERSHED ROADS RECONSTRUCTION	5W	AAAAACP	REGIONAL	5,170,000	82,992	4,413,061	18,598	738,340
CUW202	SAN ANTONIO PIPELINE EMERGENCY REPA	5W	AAAAACP	REGIONAL	1,400,000	6,012	1,289,190	61,727	69,083
CUW148	ENVIRONMENTAL & REGULATORY COMP	5W	AAAAACP	REGIONAL	3,241,279	0	3,014,995	184,774	41,510
CUW135	NEW LINE & BYPASS VALVES	5W	AAAAACP	REGIONAL	4,689,680	2,103	4,689,067	0	140,613
CUW143	HETCH HETCHY WATER TREATMENT PLAN	5W	AAAAACP	REGIONAL	18,821,529	0	18,452,053	47,947	321,529
CUW161	TREATMENT FACILITIES IMPROVEMENTS	5W	AAAAACP	REGIONAL	15,028,319	334	14,747,873	0	280,446
CUW241	FACILITIES MAINT SUPPORT STRUCTURES	5W	AAAAACP	REGIONAL	5,000,000	8,390	4,988,882	0	11,118
CUW392	PROGRAM MANAGEMENT SERVICES - WSIF	5W	AAAAACP	LOCAL/REGIONAL	751,000	(98,519)	71,973	1,013,368	
CUW127	INST SCADA SYSTEM	5W	AAAAACP	LOCAL/REGIONAL	13,156,681	2,411,274	8,653,641	0	4,503,040
CUW110	OCIP PROJECT CONTROL	5W	AAAAACP	LOCAL/REGIONAL	2,497,381	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				0	0	0	0	
	JOINT LOCAL AND REGIONAL PROJECTS				17,491,562	2,618,462	11,902,259	71,973	5,517,330
	REGIONAL PROJECTS				86,718,264	2,282,199	70,339,048	1,934,840	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	AAAAACP	WATER	9,000,000	1,534,488	2,806,592	3,565,023	2,628,385
CUH984	WATERSHED PROPERTY PURCHASES	5T	AAAAACP	WATER	800,000	75,756	454,756	0	345,244
CUH987	FAC MAINTENANCE-WATER TRANSPORTAT	5T	AAAAACP	WATER	3,400,000	110,986	2,885,394	209,138	305,469
CUH703	PRIEST RESERVOIR DIVERSION CHANNEL	5T	AAAAACP	WATER	21,210,344	47,164	20,186,993	0	1,043,351
CUH926	Pipeline PURCHASE/REPLACEMENT PIPE	5T	AAAAACP	WATER	159,860	13,667	157,489	0	2,371
CUH782	SAN JOAQUIN PIPELINE REPAIRS	5T	AAAAACP	WATER	41,469,206	255,011	41,215,761	134,652	118,792
CUW687	S25 GOLDEN GATE	5T	AAAAACP	JOINT	280,600	4,105	26,437	0	254,163
CUH977	FACILITIES MAINTENANCE - BUDGET	5T	AAAAACP	JOINT	9,300,000	1,049,878	3,578,478	803,231	4,918,290
CUH931	HH MICROWAVE REPLACEMENT	5T	AAAAACP	JOINT	4,767,000	3,313,761	1,227,242	225,997	
CUH941	HH SCADA SECURITY & CONTROL, EAST	5T	AAAAACP	JOINT	2,068,180	246,948	1,680,922	256,198	131,060
CUH804	HETCH HETCHY ROADS REBUILDING	5T	AAAAACP	JOINT	4,175,027	341,240	3,544,483	113,314	517,230
CUH766	HETCHY FACILITIES SECURITY IMPROV.	5T	AAAAACP	JOINT	2,086,692	261,601	1,960,386	62,470	63,836
CUH876	MOCCASIN PHONE SYSTEM	5T	AAAAACP	JOINT	1,610,000	15,677	1,528,780	0	81,220
CUH878	O'SHAUGNESSY DIS.REPAIRS	5T	AAAAACP	JOINT	7,179,009	33,750	7,101,644	9,297	68,068
CUH810	VARIOUS OLD JOB	5T	AAAAACP	JOINT	7,613,638	18,690	7,538,034	1,561	74,044
CUH946	FAC MAINTENANCE-SUPPORT STRUCTURE	5T	AAAAACP	JOINT	2,281,454	239	2,273,485	0	7,969
CUH949	RIGHT OF WAY MAINTENANCE	5T	AAAAACP	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	
	WATER				76,039,410	2,037,072	67,686,985	3,908,812	4,443,613
	JOINT				42,176,600	2,128,397	33,350,617	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
<i>REGIONAL</i>	
	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 Improvemets
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 Rehabilitation
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 Hill 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.

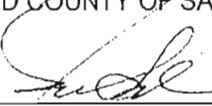
(xi) Set forth on Exhibit D is the Commission's methodology for determining governmental use and private use with respect to the water enterprise.

(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	<u>(1,973,563.58)</u>
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
Series A Project Fund	<u>338,600,816.86</u>
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	<u>4,737,937.28</u>	<u>17,784,667.72</u>	<u>22,522,605.00</u>
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	<u>1,548,036.76</u>	<u>11,316,958.24</u>	<u>12,864,995.00</u>
Total SF Regional	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	<u>25,378.75</u>	<u>3,474,585.25</u>	<u>3,499,964.00</u>
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	<u>22,522,605</u>				
	Total San Joaquin Region	<u>29,962,439</u>				
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	<u>1,961,558</u>				
	Total Sunol Valley Region	<u>73,347,563</u>				
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 Siphine	<u>1,219,251</u>				
	Total Bay Division Region	<u>100,986,791</u>				
Peninsula Region						
CUW354	Regional Lower Crystal Springs Dam Improvement	4,210,520				
CUW356	Regional Crystal Springs Bypass Tunnel	18,406,050				
CUW361	Regional Adit Leak Repairs	<u>1,965,703</u>				
CUW365	Regional Pulgas Balancing Reservoir Rehabilitation and Improvements	3,324,826				
CUW367	Regional Cross Connection Control	1,475,109				
CUW366	Regional HTWTP Short Term Improvements	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 Pipeline 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	<u>3,023,744</u>				
	Total Peninsula Region	<u>60,090,650</u>				
San Francisco Region						
CUW358	Regional Sunset Reservoir Upgrades - North Basin	6,020,008				
CUW372	Regional University Mound Reservoir Upgrades - North Basin	<u>36,307,991</u>				
	Total San Francisco Region	<u>42,327,999</u>				
System-Wide						
CUW388	Regional PEIR	8,308,050				
CUW392	Regional Program Management Services	13,323,598				
CUW394	Regional Watershed Land Acquisition	<u>502,660</u>				
	Total System-Wide	<u>22,134,308</u>				
	Total Regional Program	<u>328,849,750</u>				
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 Hill 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					

**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	Nos Valley Transmission Main, Phase 2					
CUW315 Local	East/West Transmission Main					
CUW316 Local	Fulton @ Sixth Ave Main Replacement					
Total Pipelines/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 Proceeds⁴						
Percent of Net Proceeds and Earnings⁴						

¹Net financing proceeds available on date of issue (i.e. deposit to project fund)

²Cumulative net of arbitrage rebate liability

³Cumulative

⁴If financing sources Substantially Expended, proceed allocations are then fixed

REVENUE-FUNDED CAPITAL 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
Based on Proportionate Annual Water Deliveries of ...								
66.1%								
FY 2009-10 Approved Budget - Total Regional	Approved Budget - WHOLESALE SHARE	Total Appropriation - All Years^	All Years Actual Expenditures^	Fiscal Year 2009-10 Actual Expenditures^	Encumbered But Not Expended^	Apropriated, Unencumbered Balance^	Projected Expended & Encumbered through 6/30/2010	Projected Surplus / (Shortfall)
\$ 4,000,000 J	\$ 1,224,900	\$ 1,224,900	\$ 1,071,788	\$ -	\$ -	\$ 1,224,900	\$ 408,000	\$ 816,900
CUH931 HH Microwave Replacement								
CUH977 HH Water R&R - Facilities Maintenance								
CUH947 SEA - Go Solar Incentive Project								
CUH971 Alternative Transmission Studies								
CUH976 HH Water R&R - Power Infrastructure								
CUH979 Hunter Point Municipal Power								
CUH983 Civic Center Sustainability District								
CUH986 General Fund Dept - Energy Efficiency Renewable/Generation	\$ 7,385,158 P S							
Treasure Island Improvement Project	\$ 3,501,307 P S							
Enterprise Fund Dept - Energy Efficiency	\$ 2,700,000 P S							
Toulumne River Watershed Protection	\$ 325,722 P S							
CUH975 HH Water R&R - Water Infrastructure	\$ 6,000,000 W S	\$ 4,083,000	\$ 4,083,000	\$ -			\$ 1,361,000	
	\$ 2,000,000 W S	\$ 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: *SFPU Commission Approved Budget, February 2009, Same Format
^FAMIS - City's Official Financial System of Record

Based on Proportionate Annual Water Deliveries of ...
68.1%
Ties to Budget Hearing Materials

REVENUE-FUNDED CAPITAL 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)

A	B	C	D	E	F	G=C-D-F	H	I=G-H
Based on Proportionate Annual Water Deliveries of ...								
68.1%								
FY 2009-10 Approved Budget - Total Regional	Approved Budget - WHOLESALE SHARE	Total Appropriation - All Years^	All Years Actual Expenditures^	Fiscal Year 2009-10 Actual Expenditures^	Encumbered But Not Expended^	Apropriated, Unencumbered Balance^	Projected Expended & Encumbered through 6/30/2011	Projected Surplus / (Shortfall)
\$ 4,000,000 J	\$ 1,224,900	\$ 1,224,900	\$ 1,071,788	\$ 1,224,900	\$ 1,071,788	\$ -	\$ -	\$ -
CUH931 HH Microwave Replacement								
CUH977 HH Water R&R - Facilities Maintenance	\$ 3,500,000 J	\$ 1,071,788	\$ 1,071,788	\$ 1,071,788	\$ -	\$ -	\$ -	\$ -
CUH947 SEA - Go Solar Incentive Project	\$ 4,000,000 P S							
CUH971 Alternative Transmission Studies	\$ 1,000,000 P S							
CUH976 HH Water R&R - Power Infrastructure	\$ 16,700,000 P S							
CUH979 Hunter Point Municipal Power								
CUH983 Civic Center Sustainability District								
CUH986 General Fund Dept - Energy Efficiency Renewable/Generation	\$ 7,385,158 P S							
Treasure Island Improvement Project	\$ 3,501,307 P S							
Enterprise Fund Dept - Energy Efficiency	\$ 2,700,000 P S							
CUH975 HH Water R&R - Water Infrastructure	\$ 325,722 P S							
Toulumne River Watershed Protection	\$ 6,000,000 W S	\$ 4,083,000	\$ 4,083,000	\$ 4,083,000	\$ -	\$ -	\$ -	\$ -
	\$ 2,000,000 W S	\$ 1,361,000	\$ 1,361,000	\$ 1,361,000	\$ -	\$ -	\$ -	\$ -
Regional Total	\$ 52,182,187	\$ 7,740,688	\$ 7,740,688	\$ 7,740,688	\$ -	\$ -	\$ -	\$ -

Source: *SFPU 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
Revenue Capital - Actual Expenditures
Shown on Attachment N-2, Schedule 6

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 appropriations 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)
c. Budgeted appropriation	\$8,381,400						\$10,697,026				\$13,652,417
d. Encumbrance/Expenditure	(\$2,793,800)						(\$3,565,675)				(\$4,550,806)
e. Budgeted appropriation		\$8,800,470									
f. Encumbrance/Expenditure		(\$2,933,490)									
Year 1											
g. Budgeted appropriation		\$9,240,494									
h. Encumbrance/Expenditure		(\$3,080,165)									
Year 2											
i. Budgeted appropriation		\$9,702,518									
j. Encumbrance/Expenditure		(\$3,234,173)									
Year 3											
k. Budgeted appropriation		\$10,187,644									
l. Encumbrance/Expenditure		(\$3,395,881)									
Year 4											
m. Subtotal	\$5,587,600	\$8,744,594	\$9,393,873	\$10,123,885	\$10,888,206	\$5,251,755	\$6,025,163	\$6,750,702	\$7,525,246	\$8,351,628	\$6,657,838
n. Interest earnings (e.g., 3%)	\$33,814	\$216,240	\$275,321	\$296,896	\$319,785	\$247,046	\$172,859	\$194,231	\$217,053	\$241,409	\$228,733
o. Ending fund balance (unencumbered, unexpended)	\$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											
q. 10% of Cumulative Appropriations w/ interest											
r. Ending fund balance											
s. Excess balance transferred to Balancing Account*											

*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
DRAFT			
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		
K. Deficiency or (Surplus) \$/Ccf	83,205,600		
L. Deficiency or (Surplus) Ccf as a Percentage of Revenues	\$0.23		
			15.7%

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	\$ 13,692,891	ANNUAL USE ¹	\$ 9,364,568
PUMPING	5.05 (B)	SCH 8.1	\$ 4,342,682	\$ 3,854,000	\$ 498,682	\$ 498,682	ANNUAL USE ¹	\$ 334,210
TREATMENT	5.05 (C)	SCH 8.1	\$ 30,445,053	\$ 30,445,053	\$ 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	\$ 23,252,936	\$ 23,252,936	ANNUAL USE ¹	\$ 15,902,690
CUSTOMER ACCOUNTS ²	5.05 (E)	SCH 8.1	\$ 7,552,213	\$ 7,401,169	\$ 151,044	\$ 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)								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	\$ 14,286,867	ANNUAL USE ¹	\$ 9,770,788
OTHER A&G	5.06 (C)	SCH 8.1	\$ 12,271,477	\$ 4,000,891	\$ 8,962,586	\$ 8,962,586	COMPOSITE O&M	\$ 3,770,749
COMPLIANCE AUDIT	5.06 (D)	SCH 8.1	\$ 200,000	\$ -	\$ 200,000	\$ 200,000	50%	\$ 100,000
TOTAL A&G			\$ 36,875,777	\$ 12,188,315	\$ 24,687,462	\$ 24,687,462		\$ 14,162,394
PROPERTY TAXES	5.07	SCH 8.1	\$ 1,417,283	\$ -	\$ -	\$ 1,417,283	ANNUAL USE ¹	\$ 969,287
CAPITAL COST RECOVERY								
PRE-2009 ASSETS	5.08	SCH 4 ATT	\$ -	\$ -	\$ -	\$ -		\$ 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								\$ 28,903,512
WHOLESALE REVENUE REQUIREMENT								\$ 140,984,733
WHOLESALE REVENUE COVERAGE³								\$ 4,488,233

¹Proportional Annual Use (68.39%)

²Water Enterprise Share of Customer Accounts Expenses (62% of Total Customer Accounts Expenses)

³25% 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

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	FY 2009-10 ACTUAL EXPENDITURES	ALL YEARS ACTUAL EXPENDITURES	ENCUMBERED NOT EXPENDED	APPORIATED UNENCUMBERED BALANCE
CUH980	Treasure Island Improvement Project	3,800,000 RETAIL	0.0%	\$ 0.0%	\$ 0.0%	\$ 0.0%	\$ 0.0%	\$ 0.0%	\$ 0.0%
CUW253	Facilities Security	500,000 RETAIL	0.0%	\$ 0.0%	\$ 0.0%	\$ 0.0%	\$ 0.0%	\$ 0.0%	\$ 0.0%
CUW260	Local Water R&R	22,347,520 RETAIL	0.0%	\$ 0.0%	\$ 0.0%	\$ 0.0%	\$ 0.0%	\$ 0.0%	\$ 0.0%
CUW666	Automated Meter Reading System	36,001,000 RETAIL	0.0%	\$ 0.0%	\$ 0.0%	\$ 0.0%	\$ 0.0%	\$ 0.0%	\$ 0.0%
	Total Local	62,648,520							
CUW202	Replace Prestressed Concrete Cyl Pipe	REGIONAL	68.7%	\$ 68.7%	\$ 68.7%	\$ 68.7%	\$ 68.7%	\$ 68.7%	\$ 68.7%
CUW261	Regional Water R&R - Storage	1,000,000 REGIONAL	68.7%	\$ 687,000	\$ 687,000	\$ 235,000	\$ 235,000	\$ 235,000	\$ 452,000
CUW262	Regional Water R&R - Treatment Facilities	7,000,000 REGIONAL	68.7%	\$ 4,809,000	\$ 4,809,000	\$ 1,395,000	\$ 1,395,000	\$ 25,000	\$ 3,389,000
CUW263	Regional Water R&R Conveyance/Transmission	500,000 REGIONAL	68.7%	\$ 343,500	\$ 343,500	\$ 115,000	\$ 115,000	\$ 50,000	\$ 178,500
CUW264	Regional Watersheds/ROW Management	3,700,000 REGIONAL	68.7%	\$ 2,541,900	\$ 2,541,900	\$ 850,000	\$ 850,000	\$ 123,000	\$ 1,568,900
FUW100	Regional Facilities Maintenance	12,200,000		\$ 8,381,400	\$ 8,381,400	\$ 2,595,000	\$ 2,595,000	\$ 198,000	\$ 5,588,400
	Total Regional			\$ 381,400	\$ 8,381,400	\$ 2,595,000	\$ 2,595,000	\$ 198,000	\$ 5,588,400
	TOTAL ALL PROJECTS			\$ 381,400	\$ 8,381,400	\$ 2,595,000	\$ 2,595,000	\$ 198,000	\$ 5,588,400
									(TO SCHEDULE 1)

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

WHOLESALE REVENUE COVERAGE¹

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Adjusted Proportion Annual Use (88.39%)
22.5% of Wholesale Share of Debi Sacco

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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	TOTAL ALL OUTSTANDING BONDS				
USE OF BOND PROCEEDS						
POWER PROJECTS	XX.XX%	XX.XX%	XX.XX%	XX.XX%	XX.XX%	XX.XX%
WATER PROJECTS	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%
PRINCIPAL PAYMENT						
POWER SHARE						
WATER SHARE						
JOINT SHARE						
INTEREST PAYMENT (NET)						
POWER SHARE						
WATER SHARE						
JOINT SHARE						
TOTAL PRINCIPAL AND INTEREST PAYMENT ¹						
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%
WHOLESALE SHARE						

¹Water Related = 100% of Water Share + 45% of Joint Share

(TO SCHEDULE 4)

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	SHARE	ALLOCATION FACTOR	WHOLESALE SHARE	TOTAL APPROPRIATION ALL YEARS	ACTUAL EXPENDITURES	FY 2009-10 ACTUAL EXPENDITURES	ALL YEARS FY 2009-10 ACTUAL EXPENDITURES	NOT APPROPRIATED, UNENCUMBERED BALANCE
CUH931	HH Microwave Replacement	\$ 4,000,000	JOINT	4.5%	\$ 1,800,000	ADJUSTED PROPORTIONAL, ANNUAL USE	\$ 1,224,900	\$ 1,224,900	\$ 1,224,900	\$ 1,224,900	\$ 1,224,900	\$ -
CUH977	HH Water R&R - Facilities Maintenance	\$ 3,500,000	JOINT	4.5%	\$ 1,575,000	ADJUSTED PROPORTIONAL, ANNUAL USE	\$ 1,071,788	\$ 1,071,788	\$ 1,071,788	\$ 1,071,788	\$ 1,071,788	\$ -
	Total Joint	\$ 7,500,000			\$ 3,375,000		\$ 2,286,688	\$ 2,286,688	\$ 2,286,688	\$ 2,286,688	\$ 2,286,688	\$ -
CUH947	SEA - Go Solar Incentive Project	\$ 4,000,000	POWER	0%	\$ 0	ADJUSTED PROPORTIONAL, ANNUAL USE	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ -
CUH971	Alternative Transmission Studies	\$ 1,000,000	POWER	0%	\$ 0	ADJUSTED PROPORTIONAL, ANNUAL USE	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ -
CUH976	HH Water R&R - Power Infrastructure	\$ 16,700,000	POWER	0%	\$ 0	ADJUSTED PROPORTIONAL, ANNUAL USE	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ -
CUH979	Hunters Point Municipal Power	\$ -	POWER	0%	\$ 0	ADJUSTED PROPORTIONAL, ANNUAL USE	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ -
CUH983	Civic Center Sustainability District	\$ 1,090,000	POWER	0%	\$ 0	ADJUSTED PROPORTIONAL, ANNUAL USE	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ -
CUH986	General Fund Dept - Energy Efficiency Renewable/Generation	\$ 7,365,158	POWER	0%	\$ 0	ADJUSTED PROPORTIONAL, ANNUAL USE	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ -
	Treasure Island Improvement Project	\$ 3,501,307	POWER	0%	\$ 0	ADJUSTED PROPORTIONAL, ANNUAL USE	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ -
	Enterprise Fund Dept - Energy Efficiency Total Power	\$ 2,700,000	POWER	0%	\$ 0	ADJUSTED PROPORTIONAL, ANNUAL USE	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ -
		\$ 325,722	POWER	0%	\$ 0	ADJUSTED PROPORTIONAL, ANNUAL USE	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ -
		\$ 36,682,187			\$ 0	ADJUSTED PROPORTIONAL, ANNUAL USE	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ -
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	\$ 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	\$ 1,361,000	\$ -
	Total Water	\$ 8,000,000			\$ 8,000,000		\$ 5,444,000	\$ 5,444,000	\$ 5,444,000	\$ 5,444,000	\$ 5,444,000	\$ -
	TOTAL ALL WATER RELATED PROJECTS	\$ 96,354,374			\$ 11,375,000		\$ 7,740,688	\$ 7,740,688	\$ 7,740,688	\$ 7,740,688	\$ 7,740,688	(TO SCHEDULE 4) (TO SCHEDULE 4) (TO SCHEDULE 4) (TO SCHEDULE 4)

WHOLESALE REVENUE REQUIREMENT SCHEDULES
 SERVICES OF SFPPUC BUREAUS - ALLOCATION TO ENTERPRISES
 FISCAL YEAR 2009-10
 REFERENCE SECTION 5.05.B

ATTACHMENT N-2
 SCHEDULE 7

		EXPENDITURE S	ADJUSTMENTS S	ADJUSTED EXPENDITURE S	HETCH HETCHY POWER	HETCH HETCHY WATER	WATER RETAIL	WATER REGIONAL	WASTEWATER	TOTAL
ALLOCATION FACTORS (SCHEDULE N-7.1)										
PUC01	General Manager	\$ 7,609,114	\$ 7,609,114	\$ 7,609,114	\$ 847,180	\$ 453,820	\$ 2,761,548	\$ 2,767,682	\$ 7,609,114	
PUC1101	BizServ-Administration	\$ 4,081,981	\$ -	\$ 4,081,981	\$ 454,478	\$ 243,456	\$ 1,207,864	\$ 1,484,749	\$ 4,081,981	
PUC1102	Finance	\$ 8,817,687	\$ -	\$ 8,817,687	\$ 981,739	\$ 525,902	\$ 2,609,166	\$ 3,207,280	\$ 8,817,687	
PUC1103	IT'S	\$ 18,048,158	\$ (1,835,357)	\$ 16,212,801	\$ 1,805,093	\$ 966,959	\$ 4,746,235	\$ 4,797,391	\$ 16,212,801	
PUC1106	Human Resources	\$ 7,678,483	\$ -	\$ 7,678,483	\$ 854,903	\$ 457,356	\$ 1,300,634	\$ 2,272,074	\$ 2,792,914	\$ 7,678,483
PUC1108	Customer Services	\$ 12,262,428	\$ (12,262,428)	\$ -	\$ 3,882,455	\$ 432,263	\$ 231,556	\$ 657,637	\$ 1,148,824	\$ 1,412,175
PUC12	External Affairs	\$ 3,882,455	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,882,455
TOTAL		\$ 34,752,000	\$ (12,731,000)	\$ 48,282,521	\$ 5,375,656	\$ 2,819,651	\$ 8,178,424	\$ 14,286,867	\$ 17,561,923	\$ 48,282,521

¹Adjustment for Transfer of SCADA Expenditures to T&D Joint (\$1,730,000)

(TO SCHEDULE 1)

(TO SCHEDULE 4)

(TO SCHEDULE 1)

(TO SCHEDULE 1)

(TO SCHEDULE 1)

(TO SCHEDULE 1)

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)			\$ 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	\$ 355,703	0.33%
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%

WHOLESALE REVENUE REQUIREMENT SCHEDULES
 CALCULATION OF THE WHOLESALE REVENUE REQUIREMENT
 FISCAL YEAR 2009-10
 WATER ENTERPRISE SUMMARY OF OPERATING EXPENSES

ATTACHMENT N-2
 SCHEDULE 8.1

	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

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	\$ 6,048,039	\$ 3,238,622	\$ 8,581,952	\$ 16,868,613
 Total Adjusted Operating Expense	\$ 30,902,006	\$ 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				
Customer Accounts	\$ 347,403	\$ -	\$ -	\$ 347,403
Adjustments to Customer Accounts	\$ -	\$ -	\$ -	\$ -
Adjusted Customer Accounts	\$ 347,403	\$ -	\$ -	\$ 347,403
 Other General & Administrative				
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

Source: FAMIS/EIS

Note: All adjustments to be separately identified above

SCHEDULE OF PROJECTED WATER SALES, WHOLESALE REVENUE REQUIREMENTS, AND WHOLESALE RATES
CONTRACT REFERENCE: ARTICLE 6.03.A.3

ATTACHMENT N-3

	N	N+1	N+2	FISCAL YEAR N+3	N+4
OPERATION AND MAINTENANCE EXPENSES	\$ 9,354,568	\$ -	\$ -	\$ -	\$ -
SOURCE OF SUPPLY	\$ 334,210	\$ -	\$ -	\$ -	\$ -
PUMPING	\$ 20,821,372	\$ -	\$ -	\$ -	\$ -
TREATMENT	\$ 15,902,690	\$ -	\$ -	\$ -	\$ -
TRANSMISSION & DISTRIBUTION	\$ 151,044	\$ -	\$ -	\$ -	\$ -
CUSTOMER ACCOUNTS	\$ 46,573,884	\$ -	\$ -	\$ -	\$ -
TOTAL OPERATION AND MAINTENANCE EXPENSES	\$ 141,370,092	\$ -	\$ -	\$ -	\$ -
ADMINISTRATIVE AND GENERAL EXPENSES	\$ 520,857	\$ -	\$ -	\$ -	\$ -
COWCAP	\$ 9,770,788	\$ -	\$ -	\$ -	\$ -
SF PUBLIC UTILITIES COMMISSION	\$ 3,770,749	\$ -	\$ -	\$ -	\$ -
OTHER A&G	\$ 100,000	\$ -	\$ -	\$ -	\$ -
COMPLIANCE AUDIT	\$ 14,162,394	\$ -	\$ -	\$ -	\$ -
TOTAL ADMINISTRATIVE AND GENERAL EXPENSES	\$ 969,281	\$ -	\$ -	\$ -	\$ -
PROPERTY TAXES	\$ 24,051,326	\$ -	\$ -	\$ -	\$ -
CAPITAL COST RECOVERY	\$ 17,962,431	\$ -	\$ -	\$ -	\$ -
PRE 2009 ASSETS	\$ 18,381,400	\$ -	\$ -	\$ -	\$ -
DEBT SERVICE ON NEW ASSETS	\$ 50,385,657	\$ -	\$ -	\$ -	\$ -
REVENUE FUNDED CAPITAL	\$ 28,903,512	\$ -	\$ -	\$ -	\$ -
TOTAL CAPITAL COST RECOVERY	\$ 140,994,734	\$ -	\$ -	\$ -	\$ -
WHOLESALE SHARE HHV&P	\$ -	\$ -	\$ -	\$ -	\$ -
WHOLESALE REVENUE REQUIREMENT	\$ -	\$ -	\$ -	\$ -	\$ -
BALANCING ACCOUNT AS OF JUNE 30	\$ -	\$ -	\$ -	\$ -	\$ -
INTEREST ON BALANCING ACCOUNT	\$ (127,485,900)	\$ -	\$ -	\$ -	\$ -
WHOLESALE REVENUES AT EXISTING RATE	\$ -	\$ -	\$ -	\$ -	\$ -
WHOLESALE EXCESS USE CHARGES	\$ 21,000	\$ -	\$ -	\$ -	\$ -
SETTLEMENT CREDITS AND OTHER ADJUSTMENTS	\$ 1,997,220	\$ -	\$ -	\$ -	\$ -
1984 AGREEMENT BALANCING ACCOUNT CREDITS	\$ 4,458,233	\$ -	\$ -	\$ -	\$ -
WHOLESALE DEBIT SERVICE COVERAGE RESERVE	\$ 20,015,287	\$ -	\$ -	\$ -	\$ -
WHOLESALE DEFICIENCY OR CREDIT	15.7%				
PERCENT WHOLESALE DEFICIENCY OR CREDIT OF REVENUES AND EXCESS USE CHARGES					
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				

ATTACHMENT O
STATEMENT OF WHOLESALE REVENUE REQUIREMENT/ CHANGES IN BALANCING ACCOUNT
YEAR ENDED JUNE 30
(Section 7.02.B)

	FY 2008-09	FY 2009-10	
	Allocation to Wholesale Customers	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	<u>\$ 39,470,965</u>	<u>\$ 46,573,884</u>	<u>\$ 7,102,919</u>
Hetch Hetchy Water and Power (HHWP):			
Operating expenses	\$ 10,359,786	\$ 7,484,165	\$ (2,875,621)
Maintenance expenses	<u>\$ 4,526,240</u>	<u>\$ 4,831,890</u>	<u>\$ 305,650</u>
Total HHWP operating and maintenance	<u>\$ 14,886,026</u>	<u>\$ 12,316,055</u>	<u>\$ (2,569,971)</u>
Administrative and general (A&G) expenses:			
COWCAP			
SFWE	\$ 512,438	\$ 520,852	\$ 8,419
HHWP	<u>\$ 162,364</u>	<u>\$ 348,968</u>	<u>\$ 186,604</u>
SF Public Utilities Commission:			
SFWE	\$ 7,461,835	\$ 9,770,788	\$ 2,308,953
HHWP	<u>\$ 2,357,622</u>	<u>\$ 1,959,603</u>	<u>\$ (398,019)</u>
Other A&G – SFWE	\$ 8,234,799	\$ 3,770,749	\$ (4,464,050)
Other A&G – HHWP	<u>\$ -</u>	<u>\$ 3,280,434</u>	<u>\$ 3,280,434</u>
Compliance audit	<u>\$ 95,338</u>	<u>\$ 100,000</u>	<u>\$ 4,662</u>
Total administrative and general expenses	<u>\$ 18,824,396</u>	<u>\$ 19,751,399</u>	<u>\$ 927,003</u>
Property taxes (outside city only):			
SFWE	\$ 964,040	\$ 969,287	\$ 5,247
HHWP	<u>\$ 120,923</u>	<u>\$ 139,732</u>	<u>\$ 18,809</u>
Total property taxes	<u>\$ 1,084,963</u>	<u>\$ 1,109,019</u>	<u>\$ 24,056</u>
Capital Cost Recovery			
Pre-2009 Assets			
SFWE	\$ 24,051,326		
HHWP	<u>\$ 3,118,033</u>		
Debt Service on New Assets			
SFWE	\$ 17,952,931		
HHWP	<u>\$ -</u>		
Revenue Funded Assets			
SFWE	\$ 8,381,400		
HHWP	<u>\$ 7,740,688</u>		
Total Capital Cost Recovery	<u>\$ 46,378,941</u>	<u>\$ 61,244,378</u>	<u>\$ 14,865,437</u>
Total Wholesale Revenue Requirement	<u>\$ 120,645,291</u>	<u>\$ 140,994,735</u>	<u>\$ 20,349,444</u>
Balancing Account July 1	\$ 21,176,614	\$ -	
Interest on adjusted beginning balance	\$ 529,415	\$ -	
Wholesale revenues billed	<u>\$ (123,604,000)</u>	<u>\$ (147,247,500)</u>	
Excess use charges billed	\$ -	\$ -	
Wholesale Revenue Coverage Reserve	\$ -	\$ 4,488,233	
Other adjustments	\$ -	\$ -	
Settlement adjustments	<u>\$ 21,006</u>	<u>\$ 21,006</u>	
1984 Agreement Balancing Account Credits	<u>\$ -</u>	<u>\$ 1,997,220</u>	
Balancing Account June 30	<u><u>\$ 18,768,326</u></u>	<u><u>\$ 253,694</u></u>	

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

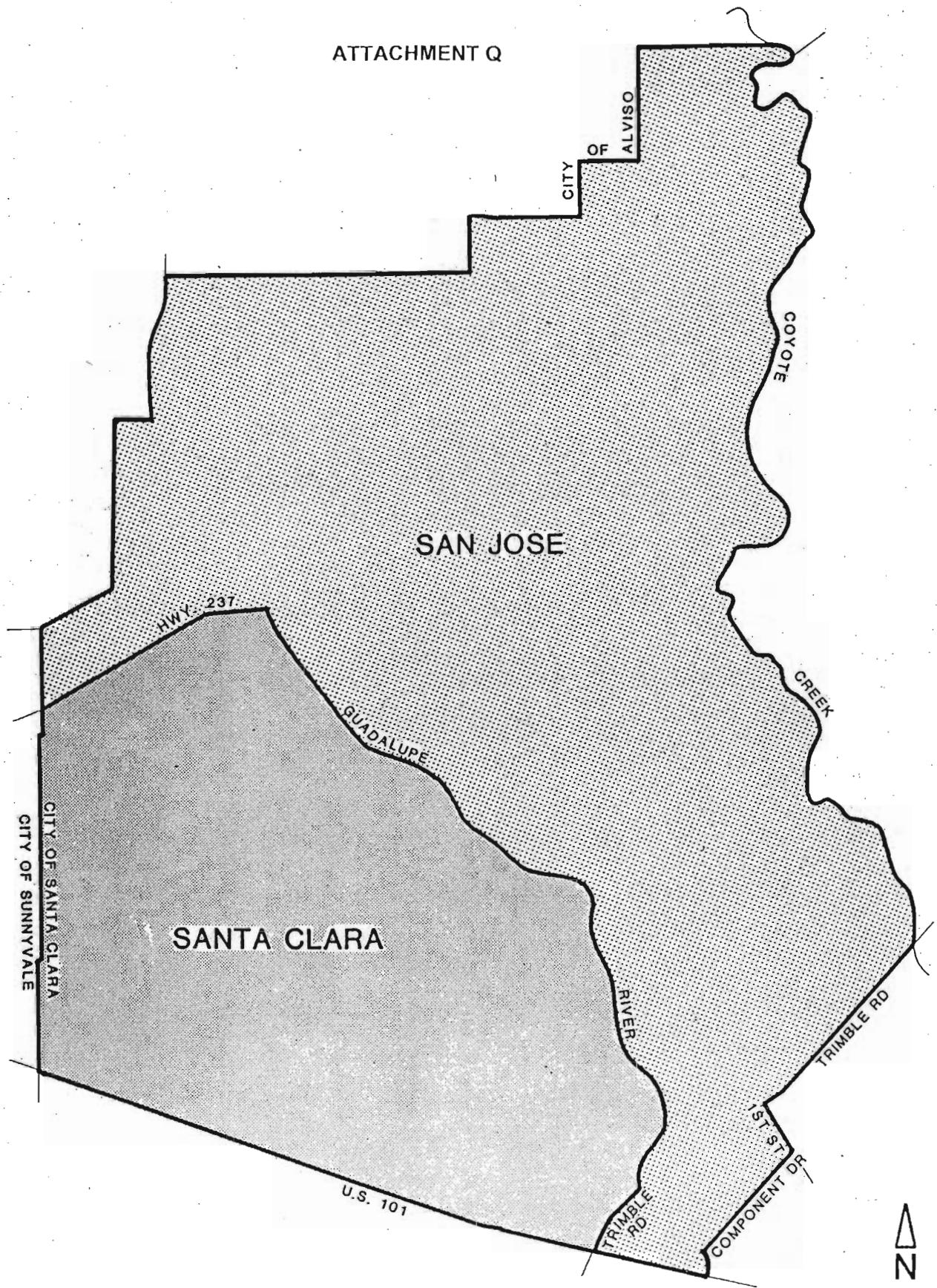
Finance Director, SFPUC Date

Accounting Manager, SFPUC Date

Financial Planning Manager, SFPUC Date

Senior Rates Administrator, SFPUC Date

ATTACHMENT Q



MAXIMUM
SERVICE AREAS

WATER SALES CONTRACT

This Contract, dated as of July 1, 2009, is entered into by and between the City and County of San Francisco ("San Francisco") and the City of Millbrae ("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 2.01 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 3.03 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 listed, with the applicable present account number, service location, service 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 and with the connection size(s) as shown on Exhibit C attached hereto.

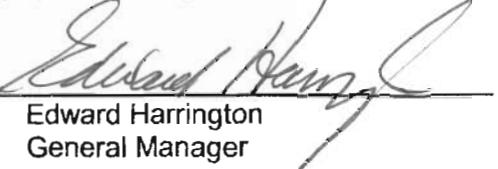
6. Billing and Payment

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.

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

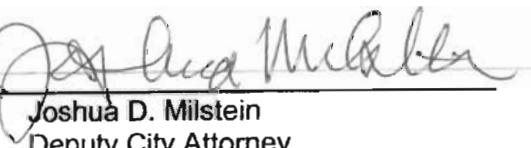
Date: June 24, 2009

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

CITY OF MILLBRAE

By: 
Name: Robert Gottschalk
Title: Mayor

Date: May 26, 2009

Approved as to form:

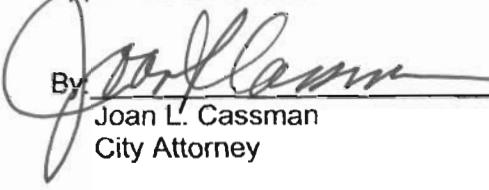
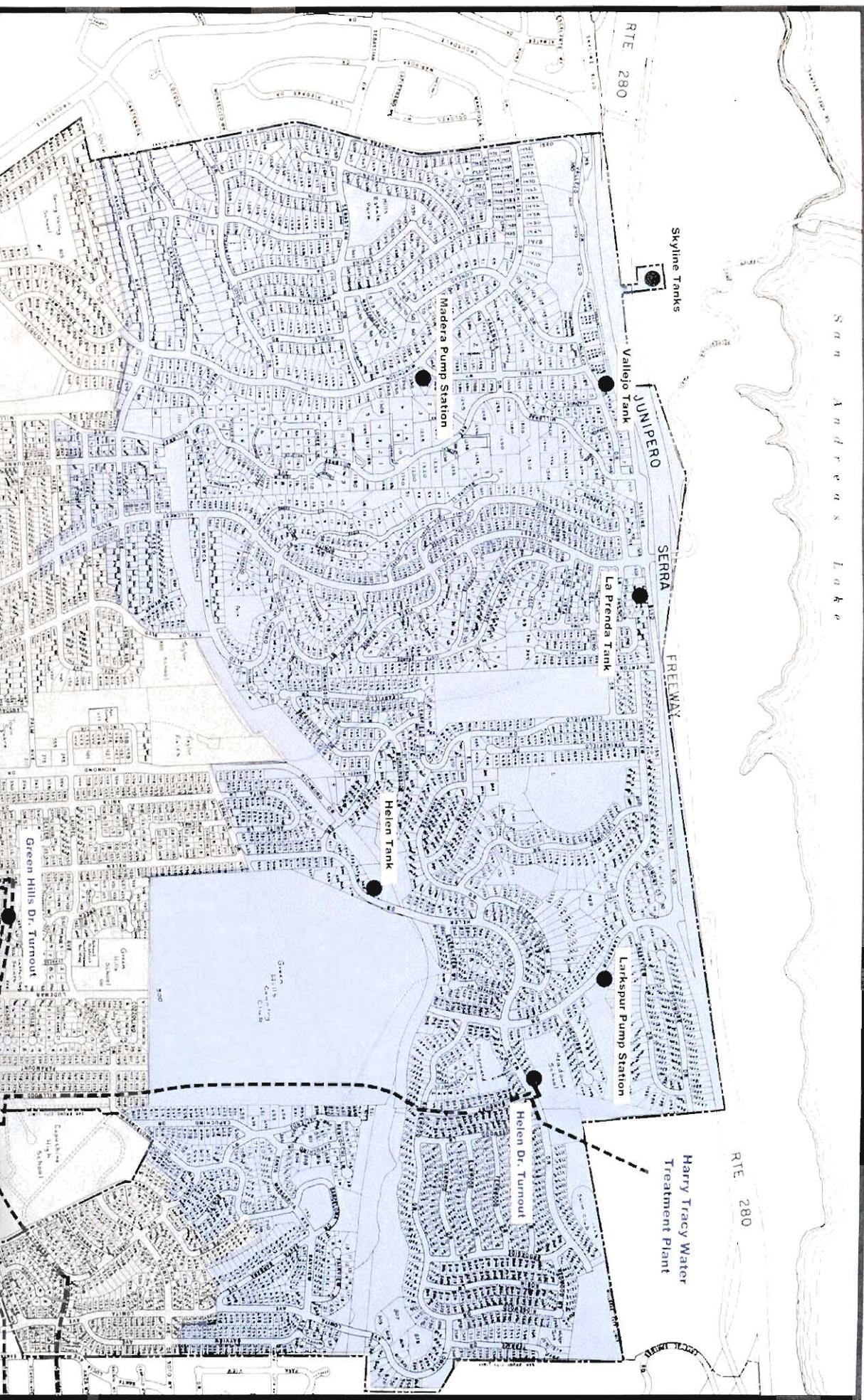

Joan L. Cassman
City Attorney

Exhibit A

Service Area Map

San Andreas Lake



City of Millbrae



LEGEND

Zone Served by Heisch Hatch & Bay Division Pipelines

Exhibit B

Location and Description of Service Connections to the SFPUC Regional Water System

Account	Meter Connection	Service		Service Street Suffix	Service City	Size	Service Meter Size
		Address	Service Street				
010033017	1	301	GREEN HILLS	DR	Millbrae	12	010033017
010033017	2	301	GREEN HILLS	DR	Millbrae		010033017
010033017	1	1800	MURCHISON	DR	Millbrae	12	010033017
010033017	1	1599	MAGNOLIA	AV	Millbrae	8	010033017
010034015	1	1027	HELEN	DR	Millbrae	8	010034015
010034015	1	1029	HELEN	DR	Millbrae	8	010034015
010034015	2	1029	HELEN	DR	Millbrae		010034015
010035012	1	195	EL CAMINO	RL	Millbrae	12	010035012

Exhibit C

Emergency Connections with Other Water Systems

Connection With	Number	Size
Burlingame	5	8", 10", 12"

Appendix D – City of Millbrae Recommended Water Efficiency Measures



Water Resources & Conservation Program

The Water Resources & Conservation Program began in 1990 in response to the drought and water rationing measures. Since this time the City has continued and expanded on programs and opportunities for residents, businesses and City facilities to conserve water. Drought Regulations are currently in effect and a voluntary 10% water use reduction has continued to be requested of our community.

Outreach and Education

School Programs

Presentations are conducted for classrooms on where our water comes from and on conserving water. School assemblies are performed by EarthCapades at the grade schools. The Tuolumne River Trust is conducting classroom presentations and activities with the 4th and 5th grade classes. Program handouts are provided to students to share with their families. Educational activity booklets are provided to kindergarteners through 5th graders for Water Education Month in October. The Environmental Programs' semi-annual newsletter, Elements, is e-mailed to teachers and school staff. Throughout the year resources are provided to the schools, including educational handouts.

Newsletters/Brochures

Articles that focus on timely issues and available resources are placed in the City's residential e-newsletter and periodically in the Chamber of Commerce newsletter. Brochures and flyers are distributed to our community that outlines the City's resources and includes water saving tips.

Displays

Displays are set up in the Library and in the lobby of City Hall to promote workshops, Water Awareness Month, Water Education Month and on the Program's resources, including on the water saving devices and rebates.

Events

Tables are staffed at City events throughout the year to answer questions and provide informational handouts, including at the Health and Wellness Faire, Lunar New Year and the Japanese Culture Festival. Tables are also staffed in the Downtown area and Library during Earth Week and Pollution Prevention Week.

Website

Information is updated regularly informing our community of the latest in workshops, devices, rebates and other conservation topics.

Utility Bill Messages

Messages on conserving water and on the available resources are placed on utility bills.

MCTV Public Service Announcements

Public service announcements are aired that include water saving tips and rebate information.

Audits and Surveys

A self-audit is included in the Water-Wise Resources brochure which is to single-family and multi-family homes to help conserve indoor and outdoor water. Commercial audits are conducted and water saving devices and recommendations are provided as needed. An audit is performed as a part of the Green Business Certification process.

Workshops

Water-Wise workshops are held every spring and fall. The topics include water-wise landscape design, irrigation systems and planting native and low-water use plants. Attendees are provided with program information and handouts.

Free Residential and Commercial Water Saving Devices

Low Flow Bathroom and Kitchen Aerators

The City provides bathroom aerators that use 0.5 GPM (gallons per minute) and kitchen aerators that use 1.5 GPM and swivel and have spray, stream and pause functions.

Low Flow Showerheads

Water guzzling showerheads are exchanged for 1.5 GPM water conserving showerheads.

Toilet Leak Detection Dye Tablets

The tablets are used to test toilets for leaks that are neither seen nor heard but can waste up to 300 gallons a day.

Additional Free Residential Water Saving Devices

Five Minute Shower Timers

The five minute shower timers are a great way to encourage family members who take long showers to take shorter ones.

Flow Meter/Water Displacement Bags

These bags can be used to test how much water is flowing from a showerhead per minute and can also be sealed and used as a water displacement bag in toilets to save 1 gallon of water per flush.

Rebates

Residential High Efficiency Clothes Washer Rebates (BAWSCA Program)

A total rebate of up to \$150 is offered for the purchase and installation of an Energy Star Most Efficient clothes washer. The City of Millbrae pays \$100 and PG&E pays \$50 for a total combined rebate of up to \$150. These clothes washers represent the leading edge in energy efficient products.

Residential and Commercial High Efficiency Toilets (HETs) (BAWSCA Program)

Up to a \$100.00 toilet rebate is offered for the replacement of high-flow toilets (older than 1992 that use 3.5 gallons or greater per flush) with qualifying efficient WaterSense models.

Rainwater Harvesting Rebates

Rainwater Harvesting Rebates are available for the purchase and installation of rain barrels and cisterns. A \$100.00 rebate is offered for a maximum of two rebates and a \$250 rebate is offered for one cistern.

Landscaping

Large Landscape Water Budgets

Thirty-two of the commercial irrigation accounts and one residential account are allocated with water budgets and provided with reports that show how much water should be used on their landscaping, how much they are using and how much money they are wasting by watering too much.

Water-Wise Garden Awards

The Community Preservation Commission provides a quarterly award to a homeowner that has a water-wise landscape.

Literature

Outreach is conducted to encourage water wise yards and gardens, including by distributing water wise garden CDs, brochures, and providing information through media sources.

Regional Activities

Staff works with BAWSCA on regional planning and implementation of programs for short and long term water conservation and supply.



City of Millbrae Water Use Regulations

The Indoor Water Use Efficiency Ordinance was adopted in 2010 and was based on BAWSCA's template ordinance. Excerpts from Millbrae's code are included below. The Millbrae City Council adopted the California Green Building Code (CalGreen) in 2013 and on January 1, 2014, the Water Efficiency and Conservation regulations of the new CalGreen Code became effective. The Building Department follows the CalGreen Code for water use efficiency, Chapter 9.35, California Green Building Code.

MMC Chapter 9.60 Indoor Water Use Efficiency Regulations

9.60.010 Title – Purpose.

This chapter shall be known as the city of Millbrae indoor water use efficiency ordinance. The purpose of the indoor water use efficiency regulations 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 chapter are intended to achieve the following goals:

- A. 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;

9.60.030 Applicability

- A. The provisions of this chapter 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 fifty thousand dollars in construction valuation.
 - d. Remodeling involving fifty percent or more of the building interior.
 - e. Expanded water service (except for fire sprinkler systems).

Outdoor Water Use Regulations

The City follows the State Model Water Efficient Landscape Ordinance.

Drought Regulations

On September 9, 2014, the City of Millbrae adopted the State adopted Drought Emergency Regulations and enacted Stage 1 of the Water Shortage Contingency Plan (WSCP). These regulations apply to all water users and warning notices and fines may apply for violating these regulations.

The following water conservation regulations in effect:

- ◆ Irrigation of ornamental landscapes or turf with potable water is restricted to between the hours of 6 p.m. and 10 a.m.
- ◆ Hoses used for any purpose must be fitted with shut-off nozzles.

- ◆ Use of water is not allowed which results in flooding or runoff in gutters, driveways or streets.
- ◆ Washing of hard surfaces with potable water is prohibited, including but not limited to, driveways, patios, parking lots or other paved surfaces, and buildings.
- ◆ Use of potable water in a fountain or decorative water feature is prohibited, unless the water is recirculated.

The following regulations are also in effect: (additional WSCP regulations)

- ◆ Draining and refilling of swimming pools is prohibited.
- ◆ Water efficient indoor fixtures should be used, including, but not limited to, faucet aerators and showerheads.
- ◆ Restaurant or food service establishments should serve drinking water only upon request.
- ◆ Hotels and motels should offer guests the option of not laundering towels and linens daily.
- ◆ Use of drip and other low volume irrigation systems are encouraged.
- ◆ Appropriate use of graywater is encouraged.

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Document Status

Rev No.	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date

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