Water Supply Assessment for Jefferson Union High School District Master Plan Project

Prepared for
City of Daly City
Daly City, California
December 2021

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List of Abbreviations

ABAG	Association of Bay Area Governments
amsl	above mean sea level
BARWRP	Bay Area Regional Water Recycling Program
BAWSCA	Bay Area Water Supply and Conservation Agency
BC	Brown and Caldwell
BDP	Bay-Delta Plan
CASGEM	California Statewide Groundwater Elevation Monitoring
CIMIS	California Irrigation Management Information System
CWS	California Water Service Company
Daly City	City of Daly City
DSS	Decision Support System
DWR	Department of Water Resources
ETo	evapotranspiration
ft^2	square foot/feet
°F	degrees Fahrenheit
gpm	gallons per minute
GWMP	Groundwater Management Plan
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
GSR	groundwater storage and recovery
I-280	Interstate 280
ISG	Individual Supply Guarantee
ISL	Interim Supply Limitation
JUHSD	Jefferson Union High School District
LOS	level of service
MG	million gallons
mgd	million gallons per day
MGY	million gallons per year
MP	Master Plan
NSMCSD	North San Mateo County Sanitation District
RWS	Regional Water System
SCADA	supervisory control and data acquisition system
sf	square foot/feet
SFPUC	San Francisco Public Utilities Commission
SGMA	Sustainable Groundwater Management Act
Strategy	BAWSCA's Long-term Reliable Water Supply Strategy
SWRCB	State Water Resources Control Board
USEPA	United States Environmental Protection Agency
UWMP	Urban Water Management Plan
WSA	Water Supply Assessment
WSAg	Water Supply Agreement
WSAP	Water Shortage Allocation Plan
WSIP	Water System Improvement Program
WWTP	wastewater treatment plant

Executive Summary

On behalf of the City of Daly City (Daly City), Brown and Caldwell (BC) prepared this Water Supply Assessment (WSA) for the proposed Jefferson Union High School District (JUHSD) Master Plan (MP) Project. BC has prepared the WSA in accordance with California Water Code sections 10910 through 10915.

The projected available annual potable water supplies under non-drought periods (normal conditions) for the Daly City water system in 2045 are 2,819 million gallons (MG), and the estimated potable demand is 2,206 million gallon per year (MGY), where 86 MG is from the proposed project demand. Thus, BC has determined that Daly City would have access to sufficient water supplies to serve the proposed JUHSD MP Project in normal water supply conditions, but our analyses projects shortages if State of California Department of Water Resources (DWR) implements the Bay-Delta Plan Amendment.

However, due to the proposed Bay-Delta Plan Amendment, this report identifies some projected shortages and uncertainties regarding future dry-year supplies. BC based this determination on the following information:

- Both groundwater and surface water would supply the water needed to serve the proposed project. Currently, Daly City purchases treated surface water from the San Francisco Public Utilities Commission (SFPUC). Historically, SFPUC has delivered sufficient surface water supplies. This analysis incorporates reductions in surface water supplies from SFPUC of up to 20 percent of average in dry years per the 2020 Daly City UWMP; however, according to the SFPUC Common Language letter (Appendix A), SFPUC faces potential for further reductions of its supply due to scenarios associated with the Bay-Delta Plan Amendment that could affect water available to Daly City from the Regional Water Supply adversely.
- Daly City has limited ability to increase groundwater pumping from the Westside Basin to enhance water supply reliability and address added demands. Daly City currently has a sustainable yield of 1,252 MGY anticipated through 2045. However, Daly City has identified other undeveloped groundwater resources outside the Westside Basin that it currently considers developing. If such resources come to fruition, they could substantially overcome shortfalls in its dependence on the Regional Water Supply during droughts with the Bay-Delta Plan Amendment in place.
- Recycled water currently serves irrigation demands within Daly City and to nearby golf courses, which lowers the estimated demands for potable water and further enhances overall water supply reliability. City's recycled water expansion project (to be completed by 2035) would expand recycled water use and further enhance the groundwater availability.

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Section 1

Introduction

This section discusses the purpose and scope of the Water Supply Assessment (WSA) and describes both the proposed Jefferson Union High School District (JUHSD) Master Plan (MP) Project and the existing City of Daly City (Daly City) water system.

1.1 Purpose and Scope of Water Supply Assessment

Brown and Caldwell prepared this WSA to document the availability of water supplies to serve Daly City and the proposed JUHSD project. Senate Bill 610, now codified as California Water Code sections 10910 and 10911, requires land use planning entities that are evaluating certain large development projects to request an assessment with an affirmative written verification of sufficient water supplies from the water supply entity that will provide water for the project. Applicable developments are those that would have a water demand that would be equivalent or greater than the amount of water used by a 500-dwelling unit project or would increase the number of service connections by at least 10 percent. A water supplier prepares such a WSA in conjunction with a project's land-use approval process and must evaluate the sufficiency of the water supplies available to the water supplier to meet existing and anticipated future demands including the demand associated with the proposed development. The WSA must include the project's demand over a 20-year horizon that recognizes normal years, single and multiple dry years. For supply and demand information, BC used supply and demand information from the Daly City 2020 Urban Water Management Plan (UWMP), which has a 25-year horizon.

The WSA must identify any existing water supply entitlements, water rights, or water service contracts held by the water supplier or that are relevant to the identified water supply for the proposed project. The WSA also must document water quantities received in prior years by the public water system.

If the public water supplier relies on groundwater supplies, the WSA must describe all groundwater basins that will supply the proposed project. For each unadjudicated basin, the WSA should indicate whether DWR has identified the basin as overdrafted or has projected that the basin will become overdrafted if present management conditions continue. Furthermore, the WSA should provide a detailed description of the efforts undertaken in the basin to eliminate the long-term overdraft condition.

1.2 Proposed Jefferson Union High School District MP Project

JUHSD is developing a master plan for the expansion of the Workforce Housing District located at 699 Serramonte Boulevard in Daly City. The project improvements include five new high-density residential buildings, a mixed-use building, pedestrian pathways, landscaping, surface parking, and utilities. The project will include removing an existing school building, four modular buildings, parking lots, and roadways.

The proposed JUHSD MP Project will modify an existing 20-acre institutional site as indicated on Figure LUE-1, Existing Land Use, in the Daly City 2030 General Plan https://www.dalycity.org/363/General-Plan (Appendix B). As shown on Figure 1-1, the site is bounded by Serramonte Boulevard to the north, St. Francis Boulevard to the west, Campus Drive to the south, and Callan Boulevard to the east. As shown on Figure 1-2, prepared by BKF Engineers, and provided to Brown and Caldwell (BC) on April 28, 2021 (Appendix C), JUHSD will build out the proposed project in three phases over 8 to 15 years. It will remove 168,816 square feet (sf) of school and construct up to 1,240 new residential units, up to 1,854 parking units, and 24,427 sf of mixed retail/restaurant space. Per Figure LUE-3, Future Land Use, the Daly City 2030 General Plan shows land use

on the site as Commercial Office (C-O); therefore, Daly City may need to rezone the site to be consistent with the proposed project.

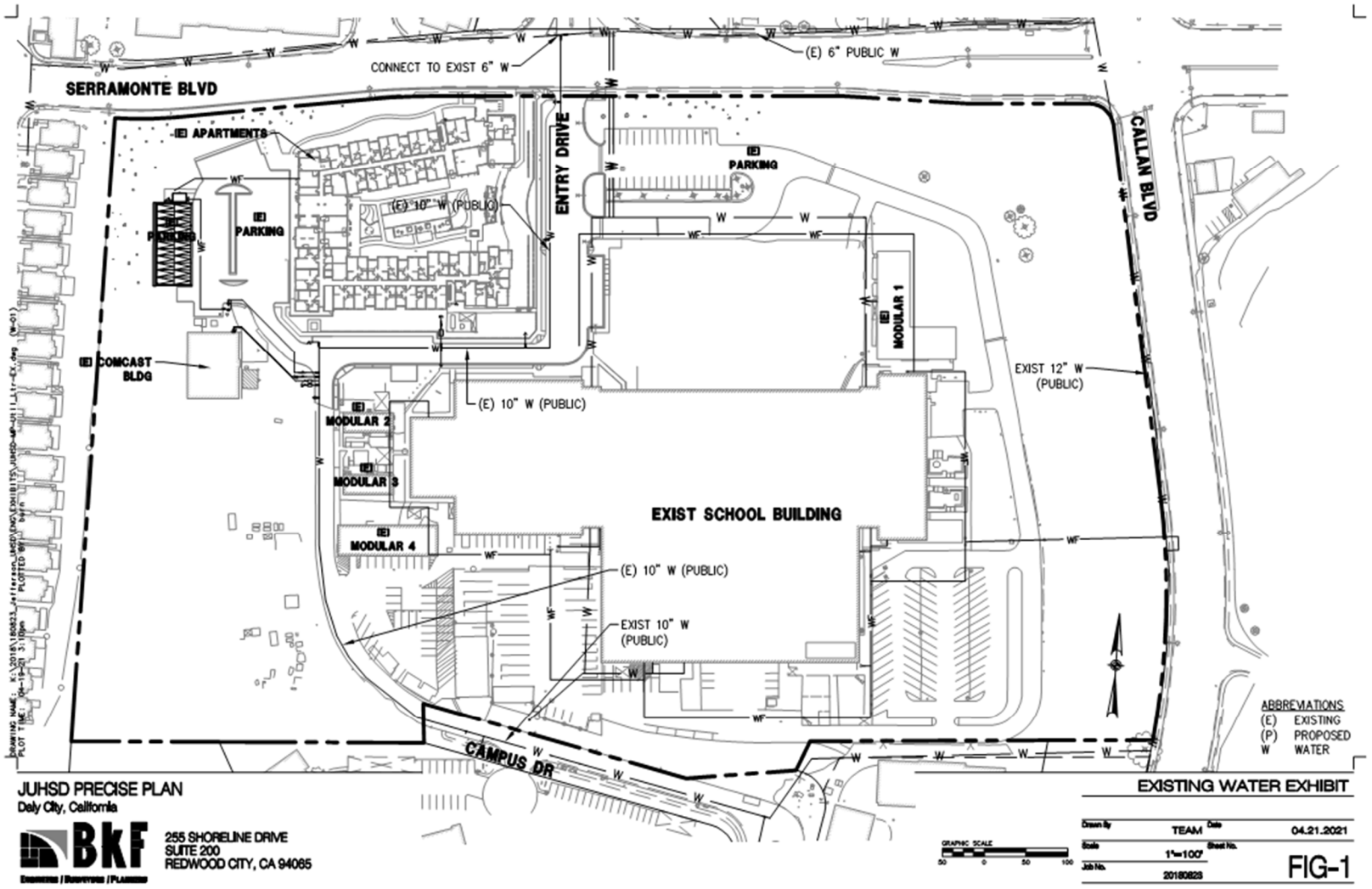

Figure 1-1. Jefferson Union High School District MP project site - existing

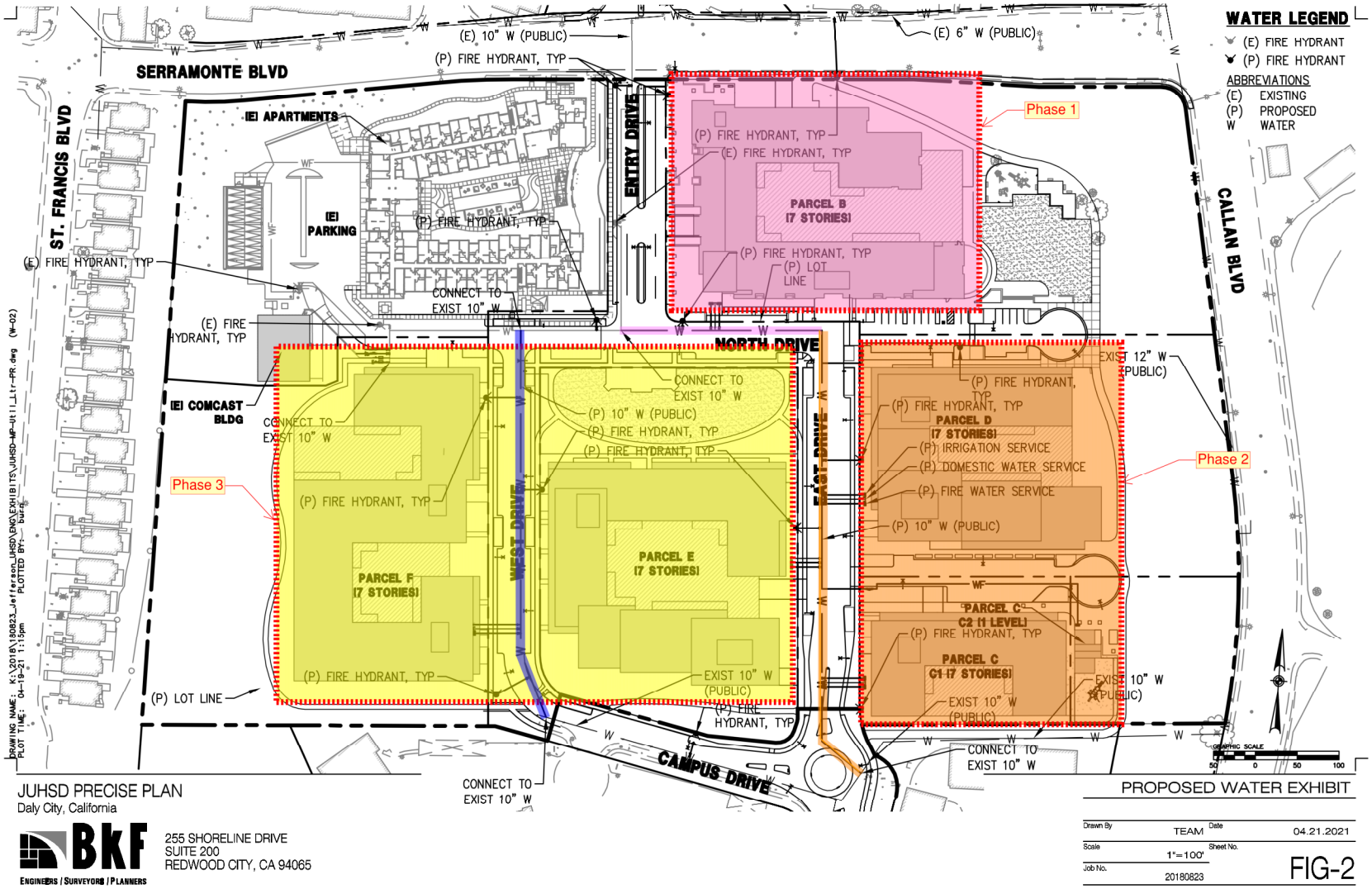

Figure 1-2. Jefferson Union High School District MP project site - proposed

Table 1-1 summarizes the proposed (buildout) land uses and size of the proposed JUHSD MP Project.

Table 1-1 Jefferson Union High School District MP Project Land Uses at Buildout

Land Use	No. of Units	Approximate Area[a] ft²
Demolition of existing buildings	5	<170,000>
Multi-family residential (high-rise option)	1,240	1,426,000
Retail/Restaurant	-	24,000
Institutional	-	1,400
Parking	1,854	587,000
Total increase at buildout above existing development	-	1,868,000

a. Approximate total building areas of all floor levels within the exterior walls as provided by the developer.
ft² = square foot/feet

1.3 Service Area Description

This section describes the existing Daly City service area, location, climate, water system, and demographics.

1.3.1 Service Area Location

Daly City serves water to all residents and businesses within its city limits. Daly City does not serve two unincorporated pockets surrounded generally by the Daly City boundaries. Figure 1-3 presents the location of the JUHSD MP Project within the Daly City service area.

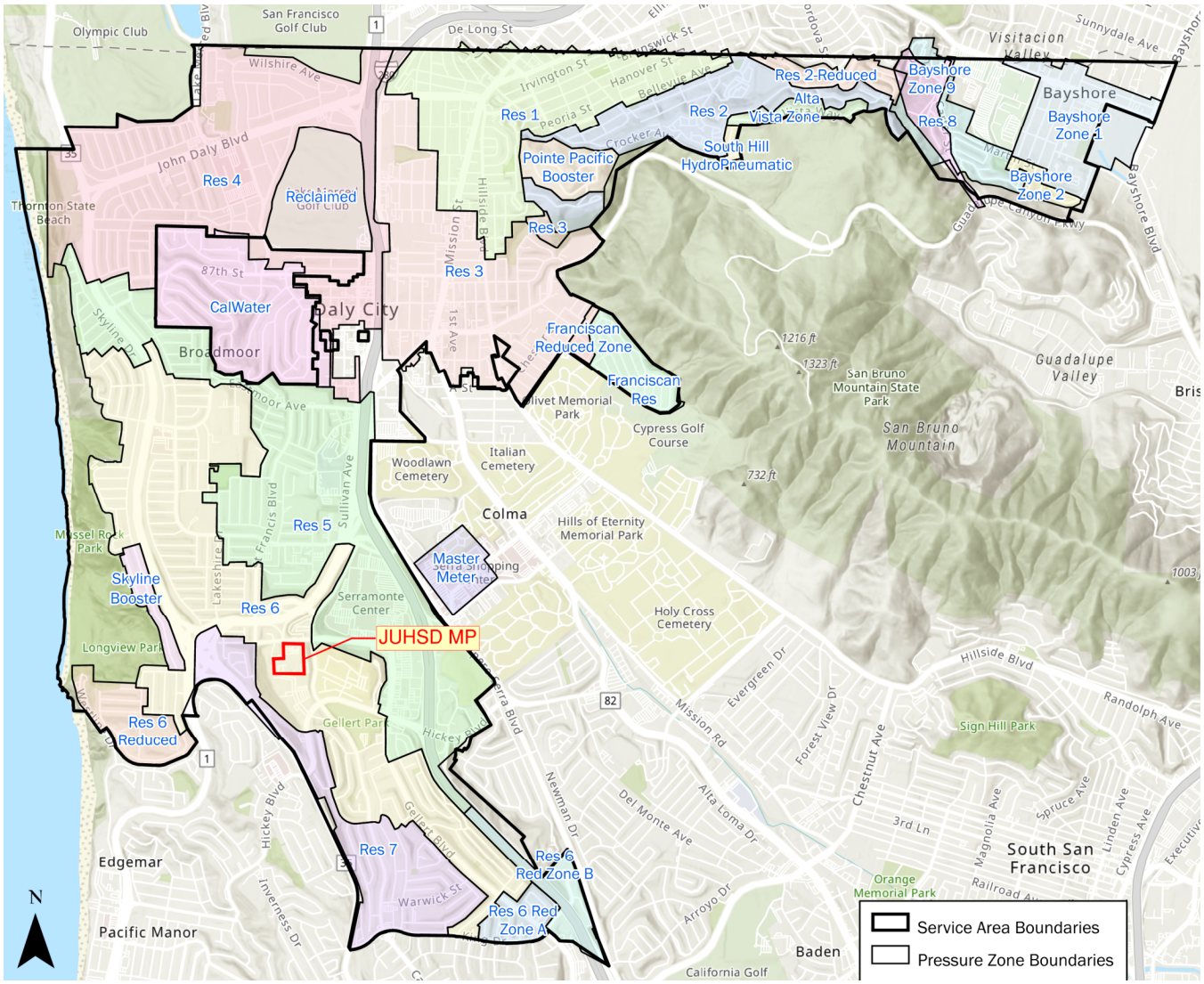

Figure 1-3. Daly City water service area and project location

Located in the northern part of San Mateo County adjacent to the southern boundary of the City and County of San Francisco, Daly City is bounded on the east by the cities of South San Francisco, Colma, and Brisbane; San Bruno Mountain; and state and county parks. On the south, it is bounded by the cities of Pacifica and South San Francisco, and on the west by the Pacific Ocean. Topography is typical of the northern California coast. Near Daly City, the coast range rises to an elevation of 600 feet above mean sea level (amsl). A 2-mile-wide valley separates the coast range from San Bruno Mountain, which rises to a peak elevation of 1,300 feet amsl.

1.3.2 Service Area Climate

As described in the 2020 UWMP, the Pacific Ocean moderates Daly City's climate. Precipitation typically occurs from November through March. No agency directly measures precipitation for Daly City proper; however, BC has assumed Daly City's standard average evapotranspiration (ET_o), rainfall, and temperature are relatively close to the data from California Irrigation Management Information System (CIMIS) stations located in Castroville and Pescadero. In the 2020 UWMP, BC presented data from two stations since the Castroville station used in the 2015 UWMP was deactivated in November 2019. Data from 1983 to 2019

are from the Castroville Station and data from December 2019 and after are from the Pescadero station. The Castroville CIMIS station was in the Monterey Bay region, about 100 miles from Daly City; the Pescadero station is located within San Mateo County, about 40 miles from Daly City. Both stations are at locations that are representative of Daly City's climate from the ocean side of San Francisco. Coastal fog during the summer months and relatively mild winter temperatures produces mean monthly minimum temperatures between 38- and 52-degrees Fahrenheit (°F) and mean monthly maximum temperatures between 58 and 65°F.

Table 1-2 summarizes the standard average ET_o, rainfall, and temperature for Daly City using the representative Castroville and Pescadero CIMIS stations.

Table 1-2. Monthly Average Climate Data Summary[a]

Month	Standard Monthly Average ET_o (inches)	Average Total Rainfall (inches)	Average Temperature (°F)	
			Maximum	Minimum
January	1.63	2.71	59.0	38.9
February	2.00	2.77	59.5	40.1
March	3.08	2.18	59.9	42.2
April	3.99	1.03	60.3	42.6
May	4.62	0.44	60.9	45.5
June	4.69	0.26	62.1	48.6
July	4.18	0.15	62.4	52.0
August	3.67	0.41	63.2	52.3
September	3.14	0.42	64.5	49.9
October	2.66	0.68	65.4	45.1
November	1.79	1.46	62.1	40.7
December	1.44	2.46	58.5	38.1
Total	36.89	14.97	NA	NA

a. *Data recorded January 1983 to November 2019 from Castroville Station 19, data recorded December 2019 to December 2020 from Pescadero Station 253, CIMIS www.cimis.water.ca.gov accessed on January 25, 2020.*

1.3.3 Daly City Water System

Daly City receives a large portion of its water supply from San Francisco Public Utilities Commission (SFPUC) and supplements the SFPUC supply with groundwater pumped from local wells. Historically, during dry periods, groundwater makes up a large proportion (up to 45 percent) of Daly City's supply; however, based on a conjunctive use agreement with SFPUC, Daly City last used groundwater in 2015. Daly City also uses tertiary recycled water from the North San Mateo County Sanitation District (NSMCSD) Wastewater Treatment Plant (WWTP) wherever feasible to offset potable/aquifer water demands.

The Daly City water system mainly consists of a groundwater well field, currently with four active wells, approximately 200 miles of water distribution pipelines, 19 pumping facilities with a combined capacity of 21,500 gallons per minute (gpm) with the largest pump at each facility taken out of service, 12 SFPUC turnouts, 11 interties to other systems (City of Brisbane, CWS, North Coast County Water District, Westborough Water District), pressure reducing valves, a centralized supervisory control and data acquisition (SCADA) system, an office building, three maintenance yards, and 13 reservoirs with 23.1-million-gallon (MG) capacity in total. The reader can find more information in Section 3.4 of the 2020 UWMP.

1.3.4 Existing and Projected Demographics

This section describes current and projected population of the service area with the proposed project based on information from the 2020 UWMP. The discussion also includes information on social, economic, and demographic factors as well as land use trends potentially affecting water management planning in the service area.

1.3.4.1 Service Area Population

Daly City is currently the most populous city in San Mateo County. Table 1-3 presents population data from the Bay Area Water Supply and Conservation Agency's (BAWSCA) Decision Support System (DSS) model, based on and derived from the Association of Bay Area Governments' (ABAG) population projections. Projections suggest that City population as used for this analysis will reach approximately 131,000 in 2045. BC did not adjust the population to include any portion of the water system outside of City limits since such areas are small.

Table 1-3. Daly City Population Current and Projected

Year	2020	2025	2030	2035	2040	2045
Population[a]	112,374	115,671	119,147	123,020	127,028	131,037

a. Population for Daly City is from the DSS model, which is based on ABAG projections.

According to Daly City's 2030 General Plan, even with projected increased population and economic growth, Daly City has little physical land available for proposed developments. Daly City estimates in the General Plan that it is approximately 98 percent built out and has limited opportunity to add new developments, except for infill space and redevelopment of existing parcels, such as the JUHSD MP project. Daly City surrounds the unincorporated Broadmoor Village but provides no water service there. According to the General Plan, Daly City's predominant land use remains lower-density residential development. Although this land use pattern will remain true for quite some time, the density of new developments approved by Daly City has increased markedly in recent years. Increasing development pressures and regional land use policies intended to promote more Bay Area residents living closer to where they work will place additional pressures on Daly City to allow private redevelopment of older buildings and increases in residential densities. The General Plan provides additional information on this topic.

Daly City is a center for retail trades, primarily home furnishings, appliances, apparel, general merchandise, and eating and drinking establishments. Major shopping areas include Serramonte Shopping Center, Westlake Shopping Center, Pacific Plaza, and the Mission Street retail corridor.

Interstate 280 (I-280), running north and south, divides Daly City into two geographically distinct areas with different development characteristics. Older neighborhoods of medium-density and single-family housing are located east of I-280. Small corner markets and strip developments characterize businesses in this area. West of I-280 development is newer, primarily built after 1949. In this area, lower-density, single-family homes are concentrated around shopping centers often dedicated to serving a region rather than a local population. Daly City has limited manufacturing enterprises located near the Cow Palace in the Bayshore neighborhood east of I-280.

Section 2

Existing and Projected Water Demands

This section describes historical and projected water demand for Daly City with and without the JUHSD MP Project.

Per California Water Code 10910, the information included in a WSA is dependent on whether the proposed development was accounted for in the most recently adopted UWMP. In this case, it is uncertain whether the population-based 2020 UWMP demand projections for 2025–2045 included the JUHSD MP Project.

The basis of the 2020 UWMP demand projections is as follows:

- Daly City used the DSS model to project both long-range water demands and conservation savings. To forecast water demands, the DSS model relies on demographic and employment projections, combined with the effects of natural fixture replacement resulting from plumbing codes implemented to forecast demands.
- In 2020, BAWSCA updated the DSS model using the 2018 base water use, long-term population, employment growth projections for 2020–2045, continued and latest conservation programs, and an assumed short-term drought recovery between 2019 and 2023. The DSS model demands based on the 2013 ABAG demographic projections and included projected passive (plumbing and buildout code) and active conservation savings. The reader can find detailed methodology information in BAWSCA's Regional Water Demand and Conservation Projections (BAWSCA, 2020).
- The latest DSS modeling also assumed a 5 percent flat increase to outdoor water demand to account for climate change.

For the purposes of this WSA and to be conservatively high, BC added projected demands for the proposed JUHSD MP Project to the projected demands included in the 2020 UWMP.

2.1 Historical Water Demand

Table 2-1 presents Daly City's historical water demand in 5-year increments. Water use decreased noticeably from 2005 to 2020.

Table 2-1. Historical Potable Water Demands					
Use Type[b]	Additional Description	Historical Water Use (MGY)[a]			
		2005[a]	2010[a]	2015[b]	2020[c]
Single-family		1,434	1,273	1,113	1,146
Multi-family	Includes apartments, duplexes, and condominiums	630	557	513	529
CII	Commercial, Industrial, Institutional/Governmental	410	391	364	227
Landscape		80	43	45	51
Losses	Treated water distribution system	132	119	158	221
Other	Hydrant flushing, and traveling meter (contractor)	13	13	-	-
Total		2,698	2,395	2,193	2,174

a. Source: Water Supply Assessment for Serramonte Center Expansion
b. Source: 2015 UWMP
c. Source: City staff
MGY = million gallons per year

2.2 JUHSD Site – Current and Historical Demand

Currently, the JUHSD has two water service accounts:

- Comcast Cable Communications (Comcast)
- Serramonte High School

Table 2-2 provides the JUHSD current and historical water demand.

Table 2-2. JUHSD Site Demand in Gallons			
Year	Comcast	Serramonte High School	Total Use
2006	22,000	135,000	157,000
2007	24,000	105,000	129,000
2008	32,000	117,000	149,000
2009	37,000	93,000	130,000
2010	36,000	79,000	115,000
2011	19,000	97,000	116,000
2012	10,000	84,000	94,000
2013	10,000	69,000	79,000
2014	15,000	85,000	100,000
2015	11,000	101,000	112,000
2016	6,000	91,000	97,000
2017	6,000	92,000	98,000
2018	7,000	84,000	91,000
2019	6,000	61,000	67,000
2020	7,000	26,000	33,000

2.3 Projected Water Demand

This section describes the projected water demands for the existing Daly City water system and for the proposed JUHSD MP Project.

2.3.1 Daly City Water System Projected Water Demands

The projected demands presented in this document are from Daly City's 2020 UWMP. Daly City began implementing an aggressive water conservation program in 2000 and has had a consistently low per capita water demand (i.e., less than 100 gallons per capita daily [gpcd] since 1977). Table 2-3 shows the projected water demand for the Daly City water system by use type. The table does not include demands from the proposed JUHSD MP Project. The decreasing water use projections in this table account for both passive and active water savings measures that Daly City currently has in placed or plans to implement in the future.

Table 2-3. Projected Water Demands by Use Type (without the proposed JUHSD MP Project)[a]

Use Type	Additional Description	Projected Water Use (MGY)				
		2025	2030	2035	2040	2045
Single-family		1,100	1,080	1,073	1,076	1,081
Multi-family	Includes apartments, duplexes, and condominiums	491	481	476	476	477
CII	Commercial, Industrial, Institutional/Governmental	339	340	344	349	355
Landscape		55	56	58	60	61
Losses	Treated water distribution system	149	144	144	145	146
Total Potable Demand		**2,134**	**2,101**	**2,095**	**2,106**	**2,120**

a. *Demand projections include climate change demand increase and passive and active water savings as described in the 2020 UWMP Section 4.3*

2.3.2 Estimated JUHSD MP Project Water Demands

BC estimated the JUHSD MP Project water demands by combining unit water demand factors as developed in the Near- and Long-Term Water Resources Planning Technical Memorandum (BC, 2012) for each land use type with the square footage or dwelling units proposed. The total projected demand for the JUHSD MP Project is approximately 86.0 MGY or about 235,600 gallons per day. Table 2-4 presents the estimated water demands for the proposed JUHSD MP Project used in this WSA.

Table 2-4. JUHSD MP Project Projected Buildout Water Demand							
JUHSD MP Project	No. of Units	Approximate Area[a] (sf)	Approximate Number of Occupants Per Unit[b]	Land Use	Unit Water Demands[c,d]	Average Day Demands[e], gpm	Average Day Demands[f] MGY
Phase 1 - Parcel B							
Apartment	201	231,150	3.12	Multiple-Family Residential	60 gpcd	26.1	13.7
Retail/Restaurant	-	24,427	-	Restaurant	0.135 gpsfpd	2.3	1.2
Subtotal	201	255,577	-	-	-	28.4	14.9
Phase 2 - Parcels C1/C2/D							
Apartment - C1	100	115,000	3.12	Multiple-Family Residential	60 gpcd	13.0	6.8
Headstart - C2	-	1,400	-	Preschool	0.135 gpsfpd	0.1	0.1
Apartment – D (high-rise option)	269	309,350	3.12	Multiple-Family Residential	60 gpcd	35.0	18.4
Subtotal - C1/C2	369	425,750	-	-	-	48.1	25.3
Phase 3 - Parcels E/F							
Apartment – E (high-rise option)	330	379,500	3.12	Multiple-Family Residential	60 gpcd	42.9	22.5
Apartment – F (high-rise option)	340	391,000	3.12	Multiple-Family Residential	60 gpcd	44.2	23.2
Phase 3 Subtotal	670	770,500	-	-	-	87.1	45.8
Total Residential	1,240	1,426,000	-	-	-	161.2	84.7
Total Other (retail/restaurant/preschool)	-	25,827	-	-	-	2.4	1.3
Project Total	**1,240**	**1,451,827**	**-**	**-**	**-**	**163.6**	**86.0**

a. Approximate total building areas of all floor levels within the exterior walls from developer.
b. Approximate number of occupants are from Near- and Long-Term Water Resources Planning (BC, 2012).
c. Unit Water Demands per Unit from Near- and Long-Term Water Resources Planning (BC, 2012). Residential: 3.12 people per unit and 60 gpcd. Restaurant/Preschool: 0.135 gpsfpd
d. gpcd = gallons per capita per day, gpsfpd = gallons per ft2 per day.
e. Demand is averaged over 24 hours.
f. Average day demands converted to MGY.

2.4 Total Projected Water Demand

Table 2-5 presents the projected demand for Daly City, including the proposed JUHSD MP Project. The developer expects to complete Phases 1 and 2 by 2027 and anticipates full buildout (Phase 3) by 2031.

Table 2-5. Total Projected Water Demand					
	Projected Water Demand, MGY				
	2025	2030	2035	2040	2045
Existing system[a]	2,134	2,101	2,095	2,106	2,120
Demolition of existing JUHSD site[b]	-	-	-	-	-
JUHSD MP Project[c]	40 (Phases 1 and 2)	86 (Phases 1, 2, and 3)	86 (Phases 1, 2, and 3)	86 (Phases 1, 2, and 3)	86 (Phases 1, 2, and 3)
Total	**2,174**	**2,187**	**2,181**	**2,192**	**2,206**

a. Projected potable demand includes water losses and other uses from 2020 UWMP.
b. City staff provided demands for the existing JUHSD site; however, demands for 2016 through 2020 are less than 0.1 MGY.
c. Projected potable demand for the proposed JUHSD MP Project is from Table 2-4.

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Section 3

Water Supplies

Daly City has three sources of water supply: purchased surface water, groundwater, and recycled water. This section describes existing and projected water supplies and water supply reliability.

3.1 Purchased Water

Daly City receives water from the City and County of San Francisco's regional water system (RWS), operated by SFPUC. The RWS draws its supply predominantly from the Sierra Nevada, delivered through the Hetch Hetchy aqueducts, but also includes treated water produced by SFPUC from its local watersheds and treatment facilities in Alameda and San Mateo counties (see Figure 3-1 for major system components). The reader can find more information from the SFPUC 2020 UWMP.

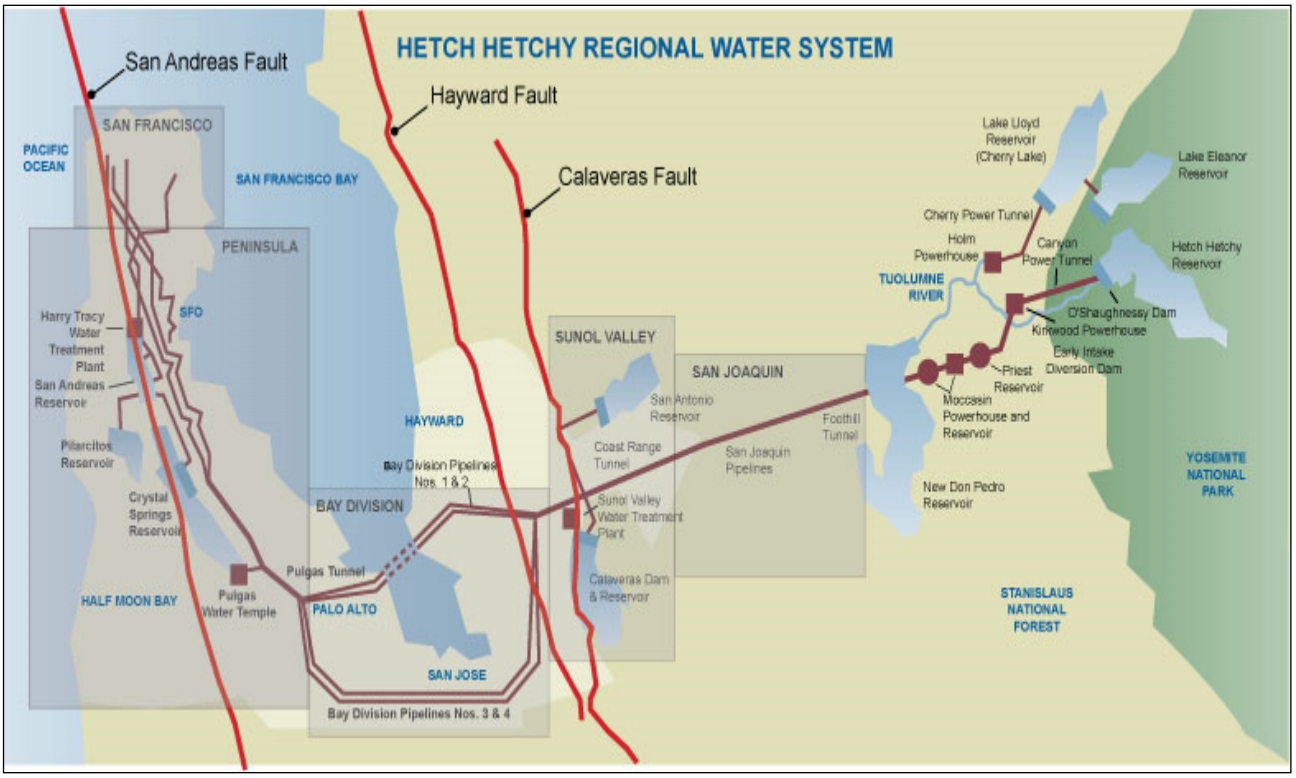

Figure 3-1. Diagram of City and County of San Francisco's RWS

Source: www.sfwater.org

3.1.1 Description

Hydrology, physical facilities, and the institutional parameters that allocate the water supply from the Tuolumne River constrain the amount of imported water available to SFPUC's retail and wholesale customers. Due to these constraints, SFPUC depends highly on reservoir storage to increase reliability of its water supplies.

SFPUC serves its retail and wholesale water demands with an integrated operation of local Bay Area water production and imported water from Hetch Hetchy, which accounts for about 85 percent of the RWS supply. In practice, the local watershed facilities operate to capture local runoff.

The Alameda and Peninsula watersheds provide the remaining 15 percent of the SFPUC water system. The Alameda watershed, located in the East Bay, represents about half of the local watershed supplies, with water captured and stored in two reservoirs: Calaveras and San Antonio. The Peninsula watershed captures runoff in three reservoirs - Crystal Springs, San Andreas, and Pilarcitos - and represents the remaining half of the SFPUC local supply.

SFPUC treats these local supplies at the Sunol Valley Water Treatment Plant in Alameda County and the Harry Tracy Water Treatment Plant in San Mateo County, which contribute 60 to 65 million gallons per day (mgd) and 40 to 45 mgd, respectively.

3.1.2 Legal Constraints

Several legal agreements limit the amount of water that Daly City can receive from SFPUC, summarized below. As described in the Individual Supply Guarantee (ISG) subsection, Daly City's ISG is 4.292 mgd.

2009 WSAg (Current Agreement through 2034). The WSAg defines, in large part, the SFPUC business relationship between San Francisco and its wholesale customers. The WSAg addresses the rate-making methodology SFPUC uses in setting wholesale water rates for its wholesale customers in addition to addressing water supply and water shortages for the RWS. The WSAg has a 25-year term with an option to extend its term.

In terms of water supply, the WSAg provides for 184 mgd (expressed on an annual average basis) "Supply Guarantees" to SFPUC's wholesale customers, subject to reduction, to the extent and for the period made necessary by reason of water shortage because of drought, emergencies, or by malfunctioning or rehabilitation of the RWS. The WSAg does not guarantee that SFPUC will meet peak daily or hourly customer demands when its annual usage exceeds the Supply Guarantees. SFPUC's wholesale customers have agreed to the 184-mgd Supply Guarantees allocation, with each entity's share of the Supply Assurance set forth in Attachment C to the WSAg. The Supply Assurance survives termination or expiration of the WSAg and Daly City's Individual Water Sales Contract with San Francisco.

As described in Section 8 of the SFPUC 2020 UWMP, SFPUC RWS supply availability is provided in the Water Shortage Allocation Plan (WSAP) between the SFPUC's Retail and Wholesale Customers which is referred to as Tier 1 of the WSAP. The WSAP further allocates the supplies amongst Wholesale Customers (BAWSCA Members) under Tier 2 of the WSAP to derive available supply for each wholesale customer including Daly City.

ISG, Indefinite Duration. San Francisco has a perpetual commitment (Supply Assurance) to deliver 184 mgd to its 24 permanent wholesale customers collectively. The Supply Assurance is allocated among the 24 permanent wholesale customers through the ISG, which represents each wholesale customer's allocation of the 184 mgd Supply Assurance. Although the WSAg and accompanying Water Supply Contract 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.

3.1.2.1 Adoption of the 2018 Bay-Delta Plan Amendment

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

release of 30 to 50 percent of the "unimpaired flow" on the three tributaries from February through June in every year type. SFPUC modeling of the new flow standard assumed that the required release is 40 percent of unimpaired flow.

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

SWRCB has stated that it intends to implement the Bay-Delta Plan Amendment on the Tuolumne River by 2022, assuming all required approvals are obtained by that time; however, implementation of the Plan Amendment is uncertain for multiple reasons as described in Appendix A.

As described in the SFPUC Common Language (February 3, 2021) and SFPUC 2020 UWMP:

"The adoption of the Bay-Delta Plan Amendment may significantly impact the supply available from the RWS. SFPUC recognizes that the Bay-Delta Plan Amendment has been adopted and that, given that it is now state law, we must plan for a future in which it is fully implemented. SFPUC also acknowledges that the plan is not self-implementing and therefore does not automatically go into effect. SFPUC is currently pursuing a voluntary agreement as well as a lawsuit which would limit implementation of the Plan. With both processes occurring on an unknown timeline, SFPUC does not know currently when the Bay-Delta Plan Amendment is likely to go into effect. As a result, it makes sense to conduct future supply modeling for a scenario that doesn't include implementation of the Bay-Delta Plan Amendment, as that represents a potential supply reliability scenario."

Given the uncertainties surrounding implementation of the Bay-Delta Plan Amendment and how those amendments if implemented will affect the SFPUC's, and thereby Daly City's, water supply, this WSA analyzes water supply and demand through 2045 under two scenarios:

Scenario 1: No implementation of the Bay-Delta Plan Amendment or the March 1st Proposed Voluntary Agreement

Scenario 2: Implementation of the Bay-Delta Plan Amendment

These two scenarios provide a bookend for the possible scenarios regarding RWS supplies. The standardized tables in the SFPUC 2020 UWMP contains the future scenario that assumes implementation of the Bay-Delta Plan Amendment starting in 2023; this WSA also will use a 2023 implementation date assumption for Scenario 2 tables. Section 4 and Appendix E provide the supply allocations to Daly City under these scenarios.

3.1.3 SFPUC Physical Constraints and Possible Limitations on Delivery Capacity

Physical limitations during wet and average conditions. During wet and average conditions, the RWS may have enough water available from rainfall and the Sierra snowpack, but physical limitations may prevent SFPUC from fully delivering such water to its customers in the City and County of San Francisco as well as its wholesale customers during peak demand periods. These limitations result from hydraulic bottlenecks in its pipelines and tunnels, as well as fixed water treatment plant capacity at SVWTP and HTWTP. To relieve these bottlenecks, SFPUC plans to replace existing pipelines or tunnels with larger-diameter conduits or build new,

parallel conduits. These facilities are generally critical during periods of peak demand (i.e., a series of hot summer or fall days). To enhance SFPUC's water supply system's ability to meet identified service goals for water quality, seismic reliability, delivery reliability, and water supply, SFPUC has undertaken the Water System Improvement Program (WSIP), approved October 31, 2008 and is approximately 96% complete as of 2021.

Physical limitations during drought conditions. During drought conditions, the hydraulic limitations in SFPUC's delivery system will be a lesser concern and the problem will instead be relative supply. In most years, the system can meet required deliveries. If local runoff is low and Bay Area storage reservoirs are low, then SFPUC must bring more Sierra water than normal into the Bay Area to augment local supplies. During such periods, the existing conveyance capacity across the San Joaquin Valley could be limiting.

3.1.4 SFPUC Additional Water Supplies

Considering the adoption of the Bay-Delta Plan Amendment and the resulting potential limitations to RWS supply during dry years, SFPUC is increasing and accelerating its efforts to acquire additional water supplies and exploring other projects that would increase overall water supply resilience. As described in Section 7 of the SFPUC 2020 UWMP, SFPUC nears completion of its WSIP but faces new and continued factors that are impacting supply reliability; SFPUC plans to initiate a new Alternative Water Supply Planning Program whose aim is to address future potential supply shortfalls, with a goal to prepare an Alternative Water Supply Plan by July 2023.

3.1.4.1 SFPUC Water System Improvement Program

The WSIP will deliver capital improvements aimed at enhancing SFPUC's ability to meet its water service mission of providing high-quality water to customers in a reliable, affordable, and environmentally sustainable manner.

Capital projects under consideration to develop additional water supplies include surface water storage expansion, recycled water expansion, water transfers, desalination, and potable reuse. SFPUC also is considering developing related policies and ordinances, such as funding for innovative water supply and efficiency technologies and requiring potable water offsets for new developments. The SFPUC 2020 UWMP presents a more detailed list and descriptions of these efforts.

3.1.4.2 Alternative Water Supply Planning Program[1]

SFPUC has increased and accelerated its efforts to acquire additional water supplies and explore other projects that would increase overall water supply resilience through the Alternative Water Supply Planning Program, which included the following projects:

- Daly City Recycled Water Expansion (regional, normal- and dry-year supply)
- Alameda County Water District-Union Sanitary District Purified Water Partnership (regional, normal- and dry-year supply))
- Crystal Springs Purified Water (regional, normal- and dry-year supply))
- Los Vaqueros Reservoir Expansion (regional, dry-year supply)
- Bay Area Brackish Water Desalination (regional, normal- and dry-year supply))
- Calaveras Reservoir Expansion (regional, dry-year supply)
- Groundwater banking
- Inter-basin collaborations

[1] Text from this section is copied and paraphrased from BAWSCA's *Final Common Language for BAWSCA Member Agencies' 2021 UWMPs.*

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

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

3.2 Groundwater

Daly City extracts groundwater from the basin known as the South Westside Basin (Basin 5-35 as defined by DWR). Daly City has five available wells with a combined capacity of about 2,950 gpm (4.25 mgd or 1,551 MGY); Daly City will use no more than five wells simultaneously because the sixth well serves as a backup well. The A Street Well is currently out of service because of elevated nitrate concentrations in the pumped water.

In December 2014, Daly City, along with SFPUC, City of San Bruno, and CWS entered into a comprehensive Groundwater Supply and Recovery (GSR) Agreement among the municipal pumpers within the South Westside Basin Aquifer to self-limit pumping within the aquifer at no more than 6.90 mgd, from which Daly City's aggregated designated quantity is an annual average rate of 3.43 mgd (1,252 MGY or 2,382 gpm).

3.2.1 Description

The aquifer that underlies most of Daly City is within the South Westside Basin. The North and South Westside Basins underly parts of San Francisco and northern San Mateo counties. The basins extend from Golden Gate Park in the north and past the San Francisco Airport in the south. The basins extend to the west beneath the Pacific Ocean at least as far as the San Andreas Fault, and to the east an unknown distance beneath San Francisco Bay. The cities of San Francisco, Daly City, South San Francisco, Colma, San Bruno, Millbrae, and parts of Burlingame and Hillsborough lie above the basins. Figure 3-2 shows the approximate outline of the South Westside Basin.

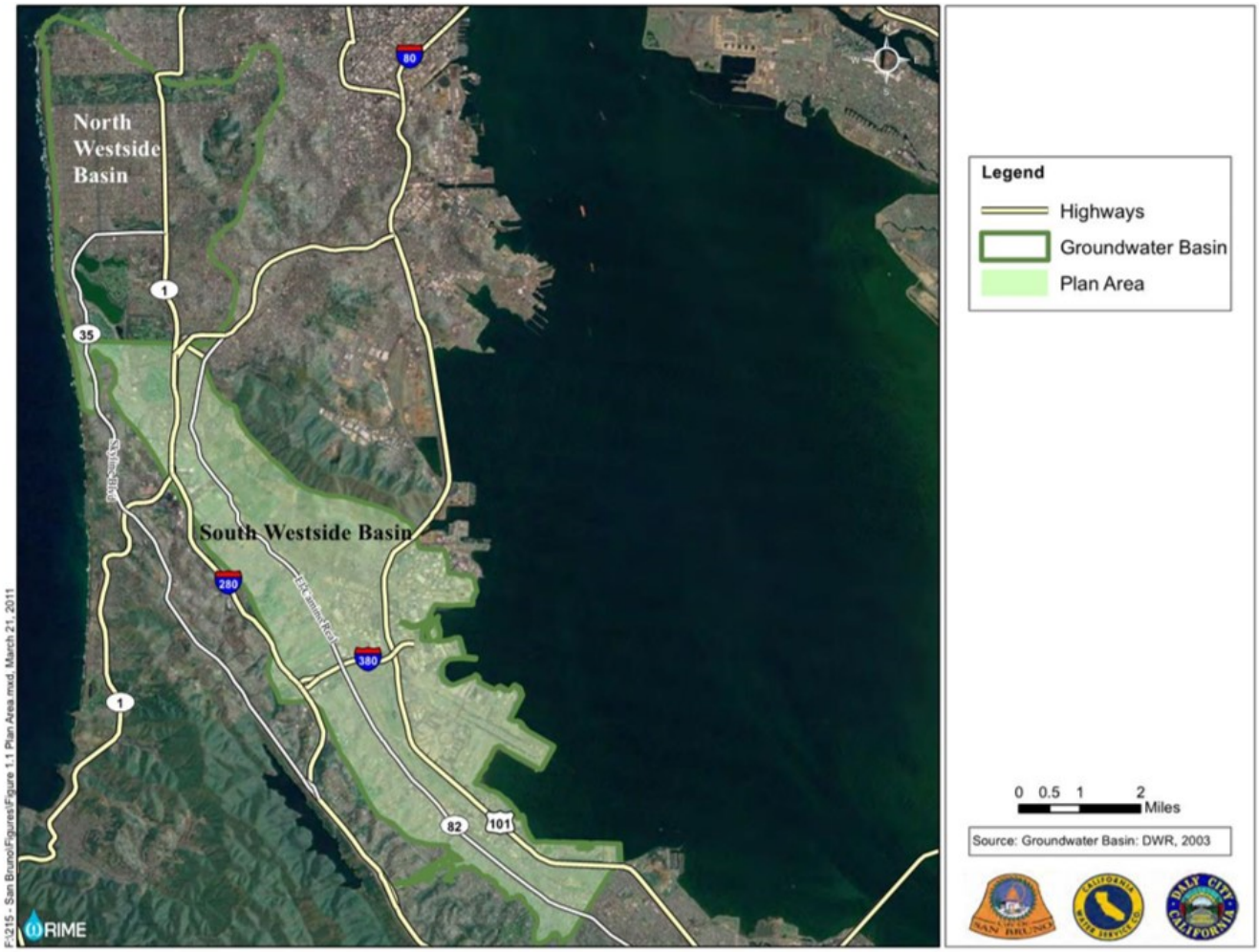

Figure 3-2. South Westside Basin

Source: WRIME 2012

In 1997, to respond to the benefits of managing the basin and ensure local control of the process, SFPUC, the cities of San Bruno and Daly City together with CWS, formed a partnership to develop a groundwater management plans (GWMP) for the Westside Basin that includes the following elements:

- Groundwater storage and quality monitoring
- Saltwater intrusion control
- Conjunctive use
- Recycled water
- Source water protection

The GWMP was completed in 2012.

In 2014, the California Legislature enacted the Sustainable Groundwater Management Act (SGMA), with subsequent amendments in 2015. The SGMA requires groundwater management in priority groundwater basins, which includes the formation of GSAs and the development of GSPs for groundwater basins or subbasins that are designated by DWR as medium or high priority.

The priority designation of groundwater basins was established as part of the California Statewide Groundwater Elevation Monitoring (CASGEM) Program. The CASGEM Groundwater Basin Prioritization is a statewide ranking of groundwater basin importance that incorporates groundwater reliance and focuses on

basins producing more than 90 percent of California's annual groundwater. The CASGEM Program has ranked the Westside Basin (CASGEM basin number 2-35) as "very low" priority.

The SGMA directs DWR to identify groundwater basins and subbasins in conditions of critical overdraft. DWR identified such basins in Bulletin 118, 1980, and Bulletin 118, Update 2003 (DWR, 2003); the Westside Basin was not identified (DWR, 2003). In August 2015, DWR issued an updated final list of critically over-drafted basins, which did not include Westside Basin (DWR, 2016).

In January 2016, Daly City, San Bruno, and CWS entered into a joint funding agreement to develop a groundwater sustainability plan (GSP) for the South Westside Basin. The *2012 South Westside Basin GWMP* will transition into a SGMA-compliant GSP through modifications and additions. The participants will coordinate the South Westside Basin GSP with the North Westside Basin GSP to ensure that both GSPs use the same data and methodologies, as required by GSP regulations. Currently, the Westside Basin Partners also are exploring options to form a groundwater sustainability agency (GSA), but no GSA has been formed for the South Westside Basin as of 2021.[2] Daly City entered into a Memorandum of Agreement for the South Westside Basin GSP with the City of San Bruno and CWS in November 2017. A GSP is currently being developed and is due in January 2022.

3.2.2 Conjunctive Use

Daly City entered into a pilot conjunctive use program with SFPUC to enhance regional water resource management by storing water in wet years and recovering that water for use during dry years. The project's first phase, concluded in November 2003, took advantage of the availability of surplus SFPUC system water at a reduced cost. In return, Daly City agreed to use additional SFPUC surface water ("In Lieu Water") and reduce pumping groundwater from the South Westside Basin. This action created the opportunity to observe basin response from recharge that takes place from the reduced groundwater pumping. The second phase of conjunctive use began in March 2004 and continued into 2011 and had promising results.

The demonstration project assessed, in part, the feasibility of a permanent program. As tentatively outlined, the program would:

- Increase groundwater levels in the South Westside Basin
- Reduce the potential for seawater intrusion
- Develop increased SFPUC system yield from the overall surface and groundwater system
- Potentially improve water-quality conditions at Lake Merced

Initial results from this project showed that groundwater levels increased within the basin. Daly City has an added benefit of saving its local resource, which would result in enhanced emergency and drought protection. With the promising results of the pilot conjunctive use program, as one of the WSIP projects, the Regional Groundwater Storage and Recovery Project (RGSR) proceeded with the construction of up to 16 new recovery wells and associated facilities, such as pumping systems, pipelines, and chemical treatment equipment. Figure 3-3 provides a schematic of the RGSR proposed groundwater wells. As of Fall 2020, the project is more than 76 percent complete, with 12 of the 13 Phase 1 wells constructed and undergoing testing, and construction of the final Phase 1 well station underway.[3] The test wells for two Phase 2 well stations have been completed, and a sixteenth well site has been selected. This regional groundwater storage project started construction in 2015 and SFPUC anticipates construction completion in winter of 2021.

[2] Per San Mateo Plain Groundwater Basin Assessment (County of San Mateo, July 2018), no GSA has been formed for the South Westside Basin.

[3] SFPUC provides updates on its Regional Groundwater Storage & Recovery Project online at: https://sfwater.org

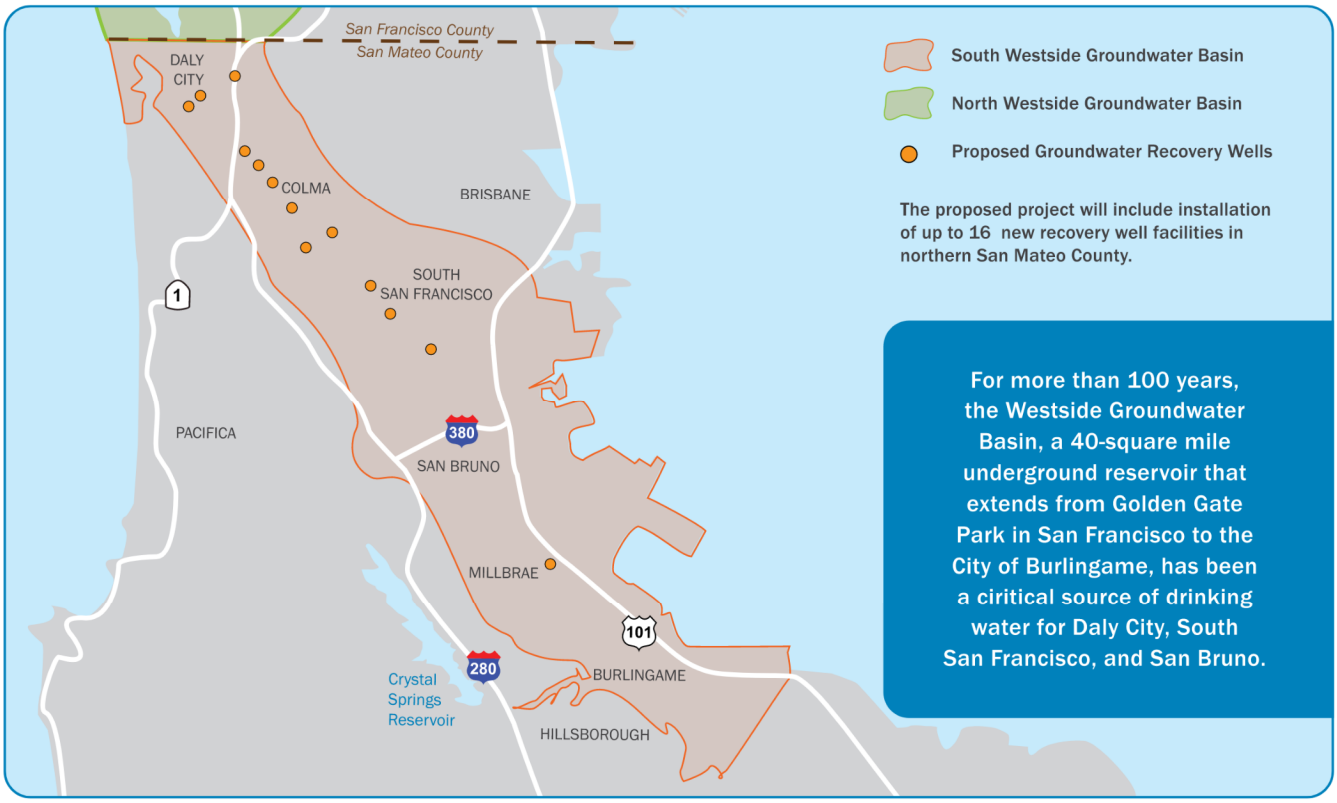

Figure 3-3. RGSR proposed project groundwater wells

Source: SFPUC 2021

The RGSR provided a significant benefit to Daly City for a water supply insurance policy as well as a systemwide benefit. SFPUC determined that the reduction in groundwater pumping will result in a water savings account of up to 61,000 acre-feet in the South Westside Basin. Work to date completed an available groundwater yield assessment for extended periods on the South Westside Basin. For further detail, see Daly City's *Permit Amendment to Domestic Water Supply System Number 4110013* (BC, 2016).

The WSAg describes "put" and "take" concepts associated with conjunctive water use. SFPUC is installing new wells as a systemwide asset of SFPUC (thereby becoming a joint asset), the terms for which the reader can find in the 2009 WSAg, Section 3.17. Under this section, Daly City would defer payment of stored conjunctive use water until actual extraction of that water occurs; Daly City would pay SFPUC at the then-applicable wholesale rate of SFPUC system surface water. Under the RGSR program, SFPUC would provide surface water "In Lieu Water" to Daly City beyond the ISG amount in Normal Years.

3.2.3 Constraints on Groundwater Sources

Daly City chloraminates and fluoridates its groundwater and blends it with SFPUC water in its pump station wet wells to meet customer demands. SFPUC treats the water that it wholesales to Daly City. It is supplied with a chloramine disinfectant residual and fluoride. Daly City adjusts the output of its wells and the flow rate of water it purchases from SFPUC to create a blended water quality that consistently meets all State and federal maximum contaminant levels.

3.2.4 Groundwater Reliability

Historically, Daly City has pumped less than the designated sustainable yield of 1,252 MGY. Daly City anticipates continued groundwater reliability as part of its ongoing efforts. Table 3-1 shows Daly City did not

pump any groundwater over the past 5 years, instead SFPUC provided "In Lieu Water" to meet water demand, so the South Westside Basin could recharge.

Table 3-1. Groundwater Volume Pumped by Daly City

Groundwater Type	Location or Basin Name	Volume Pumped, MGY				
		2016	2017	2018	2019	2020
Alluvial basin	South Westside Basin	0	0	0	0	0
Total		0	0	0	0	0

Notes: Daly City did not pump any groundwater from 2016 to 2020 to allow for groundwater recharge. Daly City's groundwater production was replaced by SFPUC surface water for "In Lieu Water" banking.

3.3 Recycled Water

Recycled water is not a source of water supply for the proposed JUHSD MP project. Municipal recycled water is municipal wastewater treated to a specified quality to enable it to be used again for a beneficial purpose. For this WSA, recycled water means only municipal recycled water, that is, water that NSMCSD has treated and discharged from its municipal wastewater facility. This section provides information on recycled water and its potential as a resource for Daly City. The elements of this section include current water recycling systems and the potential for water recycling in the service area.

3.3.1 Description

In 2004, Daly City completed a $7.5 million tertiary treatment project at the NSMCSD WWTP. The upgrades provided Daly City with an unrestricted tertiary recycled water capacity of 2.77 mgd, or 1,011 MGY.

On average, Daly City uses approximately 274 MGY of its unrestricted tertiary recycled water. The recycled water program pumps recycled water for irrigation of five golf courses (two Olympic Club courses, San Francisco, Lake Merced, and Harding Park), two city parks (Westlake and Marchbank), and median strips along John Daly Boulevard, Junipero Serra Boulevard, and the Westlake off ramp.

Table 3-2 shows the historical recycled water use from 2009 through 2020.

Table 3-2. Historical Recycled Water Uses	
Year	Recycled Water (MGY)[a]
2009	191
2010	178
2011	147
2012	190
2013	373
2014	259
2015	278
2016	405
2017	521
2018	186
2019	118
2020	10

a. *Provided by City staff*

Table 3-3 presents the projected future reuse water demands in Daly City's service area. The projected recycled water usage of 550 MGY derives from the most recent maximum yearly usage recorded in 2017.

Table 3-3. Current and Projected Recycled Water Uses (MGY)[a]							
Beneficial Use Type	Potential Beneficial Uses	Level of Treatment	2020[b]	2025	2030	2035	2040
Landscape irrigation[c] (excludes golf courses)	City parks and medians (plus cemeteries for projected future use in 2025–40)	Disinfected tertiary	3	250	250	250	250
Golf course irrigation	Used for all but greens	Disinfected tertiary	7	300	300	300	300
Total			10	550	550	550	550

a. *This table does not include Colma projected demands. Most of the recycled water distributed does not replace a potable water supply. Increase in future years is contingent on an additional recycled water facility being constructed for watering cemeteries in Colma and/or for groundwater regeneration. Per Alternative Water Supply Planning Quarterly Report (December 2020), this project is anticipated to be in operation by 2035.*

b. *Due to a digester project at the WWTP, the 2020 tertiary recycled water production amounts were much lower than typical.*

c. *Landscape recycled water use is dependent on financial and regulatory factors as well as demands for recycled water.*

3.3.2 Encourage Future Recycled Water Use

The 1999 Bay Area Regional Water Recycling Program (BARWRP) Master Plan presents an assessment of potential recycled water use in 2010, 2025, and 2040.

Along with other SFPUC wholesale customers and members of the Westside Basin Partners, Daly City has participated in discussions for an expanded recycled water plant as presented in the BAWSCA Strategy (CDM Smith, 2012). Daly City and SFPUC are pursuing the Feasibility of Expanded Tertiary Recycled Water Facilities Project, which will increase the recycled water supply available for irrigation to 1.25 mgd (City and SFPUC, 2020). Daly City recycled water expansion project includes a 1.25-mgd expansion of the existing City recycled water treatment, transmission, and distribution system. The additional recycled water would serve irrigation customers within the Town of Colma, and include cemeteries, city parks, schools, a golf course, and/or groundwater recharge. The project could operate by 2035. Per the Alternative Water Supply Planning Quarterly Update (December 8, 2020), Daly City completed a Mitigated Negative Declaration under the

California Environmental Quality Act (CEQA) in September of 2017, and 30% design for the project has been completed.

The Town of Colma irrigation customers currently use private groundwater wells that extract groundwater from the Westside Basin or potable water distributed via CWS's South San Francisco System to irrigate turf and other landscaping. Converting these irrigation customers to recycled water users would leave otherwise extracted groundwater available for other portable uses. Daly City's recycled water expansion project is designed to meet the Colma irrigation customers' estimated combined annual demand for 639 irrigation acres.

Daly City and its partners have not developed a specific recycled water expansion implementation schedule; however, based on similar projects, it is anticipated that implementation, including planning and environmental review, preliminary design, final design, and construction, will take about six years after the parties decide to move forward. Table 3-4 summarizes these proposed plans to expand recycled water use.

Table 3-4. Expand Future Recycled Water Use

Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use (MGY)
City recycled water expansion	Landscape irrigation for Town of Colma (includes cemeteries, city parks, and schools)	2035	457
Total			457

Additionally, Daly City and NSMCSD are evaluating the possibility of expanding recycled water treatment capacity.

3.4 Total Projected Water Supply

Tables 3-5 summarizes the projected water supplies for an average climate year during which SFPUC does not curtail surface water deliveries. If SFPUC imposes surface water curtailments, Daly City would use a greater supply of groundwater as described in Section 3.2. Section 4 summarizes dry year availability of these supplies.

Table 3-5. Normal Year Water Supplies, Projected (MGY)

Water Supply[a]	Additional Detail on Water Supply	2025 Reasonably Available Volume	2030 Reasonably Available Volume	2035 Reasonably Available Volume	2040 Reasonably Available Volume	2045 Reasonably Available Volume
Purchased water	ISG	1,567	1,567	1,567	1,567	1,567
Groundwater[b]	Sustainable Yield per GSR	1,252	1,252	1,252	1,252	1,252
Total		2,819	2,819	2,819	2,819	2,819

a. Daly City UWMP 2020

b. Some or all Daly City's groundwater production may be replaced by SFPUC surface water for "In Lieu Water" banking.

Section 4

Availability of Water Supplies

This section compares projected water supplies and demands and describes water shortage expectations.

4.1 Water Supply and Demand Comparison

In this WSA, Sections 2 and 3 discuss water demands and supply, respectively. This section provides a comparison of normal, single, and multiple dry years supply and demand for Daly City with the JUHSD MP project demands included.

4.1.1 Normal Year

Table 4-1 compares the projected normal year water supplies with demand and shows that sufficient supply that will meet the projected demands through 2045.

Table 4-1. Normal Year Supply and Demand Comparison (MGY)

Use Type	2025	2030	2035	2040	2045
Projected Supply totals[a]	2,819	2,819	2,819	2,819	2,819
Purchased (ISG)	1,567	1,567	1,567	1,567	1,567
Groundwater[c] (Sustainable Yield per GSR)	1,252	1,252	1,252	1,252	1,252
Projected Demand totals[b]	2,174	2,187	2,181	2,192	2,206
Difference (supply minus demand)	645	632	638	627	613

a. The supply totals are taken from this WSA in Section 3.4, originally from the 2020 UWMP.
b. The demand totals are from Section 2.4 which includes the proposed JUHSD MP Project.
c. Some or all Daly City's groundwater production may be replaced by SFPUC surface water for "In Lieu Water" banking.

4.1.2 Single Dry Year

Table 4-2 and Table 4-3 compare the projected water supplies to the demands for a single dry year. Under Scenario 1 Without Bay-Delta Plan, the reduced purchased water supply values are based on the 2020 actual City purchase of 3.97 mgd and SFPUC projections of continued decreased demands through 2045 when the estimated City purchase would be 3.43 mgd, which is 20 percent less than the contractual ISG of 4.292 mgd. Under Scenario 2 With Bay-Delta Plan, SFPUC then applies cutbacks ranging from 36% in 2025 to 46% in 2045 for single dry year. As described in Section 3, Daly City has partnered with SFPUC through the RGSR Program to make more groundwater available during drought years; however, blending with surface water from SFPUC to maintain safe water quality levels (i.e., control excess nitrate and possibly Chromium VI in the ground water through dilution), must be considered when devising a solution to address these dry year shortfalls.

Table 4-2. Single-Dry Year Water Supply and Demand Comparison, MGY – Scenario 1 Without Bay-Delta Plan					
Use Type	2025	2030	2035	2040	2045
Supply totals	2,555	2,537	2,526	2,515	2,504
Purchased[a]	1,303	1,285	1,274	1,263	1,252
(% of ISG)[b]	(83)	(82)	(81)	(81)	(80)
Groundwater (Sustainable Yield per GSR)	1,252	1,252	1,252	1,252	1,252
Demand totals	2,174	2,187	2,181	2,192	2,206
Difference (supply minus demand)	381	350	345	323	298

Note: This table provides single dry year water supply and demand for the Without Bay-Delta Plan Amendment scenario. Water supply reductions are applied to the projected purchased water supply, not the actual ISG amount.

a. Appendix E: Table A, BAWSCA Tier 2 Drought Implementation Plan.

b. Percentages are dry year supply allocation divided by 4.292 mgd ISG.

Table 4-3. Single Dry Year Water Supply and Demand Comparison, MGY – Scenario 2 With Bay-Delta Plan					
Use Type	2025	2030	2035	2040	2045
Supply totals	2,084	2,070	2,062	2,055	1,935
Purchased[a]	832	818	810	803	683
(% of ISG)[b]	(53)	(52)	(52)	(51)	(44)
Groundwater (Sustainable Yield per GSR)	1,252	1,252	1,252	1,252	1,252
Demand totals	2,174	2,187	2,181	2,192	2,206
Difference (supply minus demand)	(90)	(117)	(119)	(137)	(271)

Note: This table provides single dry year water supply and demand for the With Bay-Delta Plan Amendment scenario. Water supply reductions are applied to the projected purchased water supply, not the actual ISG amount.

a. Appendix E: Table G2-K2, BAWSCA Tier 2 Drought Implementation Plan.

b. Percentages are dry year supply allocation divided by 4.292 mgd ISG.

4.1.3 Multiple Dry Years

Table 4-4 and Table 4-5 compares the projected water supplies to the demands for multiple dry years. Under Scenario 1 Without Bay-Delta Plan, SFPUC will apply additional 15 percent cutbacks to the fourth and fifth consecutive dry years starting in 2045. Under Scenario 2 With Bay-Delta Plan, SFPUC will apply cutbacks ranging from 36 percent in 2025 to 54 percent in 2045 for multiple dry years.

Table 4-4. Multiple Dry Years Supply and Demand Comparison, MGY – Scenario 1 Without Bay-Delta Plan						
		2025	2030	2035	2040	2045
First year (Single dry year)	Supply total	2,555	2,537	2,526	2,515	2,504
	Purchased[a] (% of ISG)[b]	1,303 (83%)	1,285 (82%)	1,274 (81%)	1,263 (81%)	1,252 (80%)
	Groundwater (Sustainable Yield per GSR)	1,252	1,252	1,252	1,252	1,252
	Demand total	2,174	2,187	2,181	2,192	2,206
	Difference[c]	381	350	345	323	298
Second year	Supply total	2,555	2,537	2,526	2,515	2,504
	Purchased[a] (% of ISG)[b]	1,303 (83%)	1,285 (82%)	1,274 (81%)	1,263 (81%)	1,252 (80%)
	Groundwater (Sustainable Yield per GSR)	1,252	1,252	1,252	1,252	1,252
	Demand total	2,174	2,187	2,181	2,192	2,206
	Difference[c]	381	350	345	323	298
Third year	Supply total	2,555	2,537	2,526	2,515	2,504
	Purchased[a] (% of ISG)[b]	1,303 (83%)	1,285 (82%)	1,274 (81%)	1,263 (81%)	1,252 (80%)
	Groundwater (Sustainable Yield per GSR)	1,252	1,252	1,252	1,252	1,252
	Demand total	2,174	2,187	2,181	2,192	2,206
	Difference[c]	381	350	345	323	298
Fourth year	Supply total	2,555	2,537	2,526	2,515	2,351
	Purchased[a] (% of ISG)[b]	1,303 (83%)	1,285 (82%)	1,274 (81%)	1,263 (81%)	1,099 (70%)
	Groundwater (Sustainable Yield per GSR)	1,252	1,252	1,252	1,252	1,252
	Demand total	2,174	2,187	2,181	2,192	2,206
	Difference[c]	381	350	345	323	145
Fifth year	Supply total	2,555	2,537	2,526	2,515	2,351
	Purchased[a] (% of ISG)[b]	1,303 (83%)	1,285 (82%)	1,274 (81%)	1,263 (81%)	1,099 (70%)
	Groundwater (Sustainable Yield per GSR)	1,252	1,252	1,252	1,252	1,252
	Demand total	2,174	2,187	2,181	2,192	2,206
	Difference[c]	381	350	345	323	145

Note: This table provides multiple dry year water supply and demand for the Without Bay-Delta Plan Amendment scenario. Water supply reductions are applied to the projected purchased water supply, not the actual ISG amount. For example, there is a 12.4% cutback to the projected purchase of 3.01 mgd in the 4th and 5th consecutive dry year of 2045, but 0% cutback in all other years.

a. Appendix E: Tables A, N, and O2, BAWSCA Tier 2 Drought Implementation Plan.

b. Percentages are dry year supply allocation divided by 4.292 mgd ISG.

c. Difference is supply minus demand. A positive number represents a supply surplus. A negative number (number in parentheses) represents a deficit.

Table 4-5. Multiple Dry Years Supply and Demand Comparison, MGY – Scenario 2 With Bay-Delta Plan

		2025	2030	2035	2040	2045
First year (Single dry year)	Supply total	2,084	2,070	2,062	2,055	1,935
	Purchased[a] (% of ISG)[b]	832 (53%)	818 (52%)	810 (52%)	803 (51%)	683 (44%)
	Groundwater (Sustainable Yield per GSR)	1,252	1,252	1,252	1,252	1,252
	Demand total	2,174	2,187	2,181	2,192	2,206
	Difference[c]	(90)	(117)	(119)	(137)	(271)
Second year	Supply total	1,967	1,953	1,946	1,938	1,935
	Purchased[a] (% of ISG)[b]	715 (46%)	701 (45%)	694 (44%)	686 (44%)	683 (44%)
	Groundwater (Sustainable Yield per GSR)	1,252	1,252	1,252	1,252	1,252
	Demand total	2,174	2,187	2,181	2,192	2,206
	Difference[c]	(207)	(234)	(235)	(254)	(271)
Third year	Supply total	1,967	1,953	1,946	1,938	1,935
	Purchased[a] (% of ISG)[b]	715 (46%)	701 (45%)	694 (44%)	686 (44%)	683 (44%)
	Groundwater (Safe Yield)	1,252	1,252	1,252	1,252	1,252
	Demand total	2,174	2,187	2,181	2,192	2,206
	Difference[c]	(207)	(234)	(235)	(254)	(271)
Fourth year	Supply total	1,967	1,953	1,946	1,858	1,832
	Purchased[a] (% of ISG)[b]	715 (46%)	701 (45%)	694 (44%)	606 (39%)	580 (37%)
	Groundwater (Sustainable Yield per GSR)	1,252	1,252	1,252	1,252	1,252
	Demand total	2,174	2,187	2,181	2,192	2,206
	Difference[c]	(207)	(234)	(235)	(334)	(374)
Fifth year	Supply total	1,967	1,953	1,887	1,858	1,832
	Purchased[a] (% of ISG)[b]	715 (46%)	701 (45%)	635 (41%)	606 (39%)	580 (37%)
	Groundwater (Sustainable Yield per GSR)	1,252	1,252	1,252	1,252	1,252
	Demand total	2,174	2,187	2,181	2,192	2,206
	Difference[c]	(207)	(234)	(294)	(334)	(374)

Note: This table provides multiple dry year water supply and demand for the With Bay-Delta Plan Amendment scenario. Water supply reductions are applied to the projected purchased water supply, not the actual ISG amount.

a. *Appendix E: Table G2-K2, BAWSCA Tier 2 Drought Implementation Plan. For reference, the purchased projections for 2025-2045 are 3.57, 3.52, 3.49, 3.46, and 3.43 mgd, respectively, as shown in Table A of Appendix E. The percent cutback to wholesale customers is provided in Table E and range from 36% to 54%. Table G2-K2 applies the Table E cutbacks to the purchase projections in Table A.*

b. *Percentages are dry year supply allocation divided by 4.292 mgd ISG.*

c. *Difference is supply minus demand. A positive number represents a supply surplus. A negative number (number in parentheses) represents a deficit.*

Figure 4-1 and Figure 4-2 provide the supply vs. demand information in a visual format using the data from tables and information presented earlier in this section.

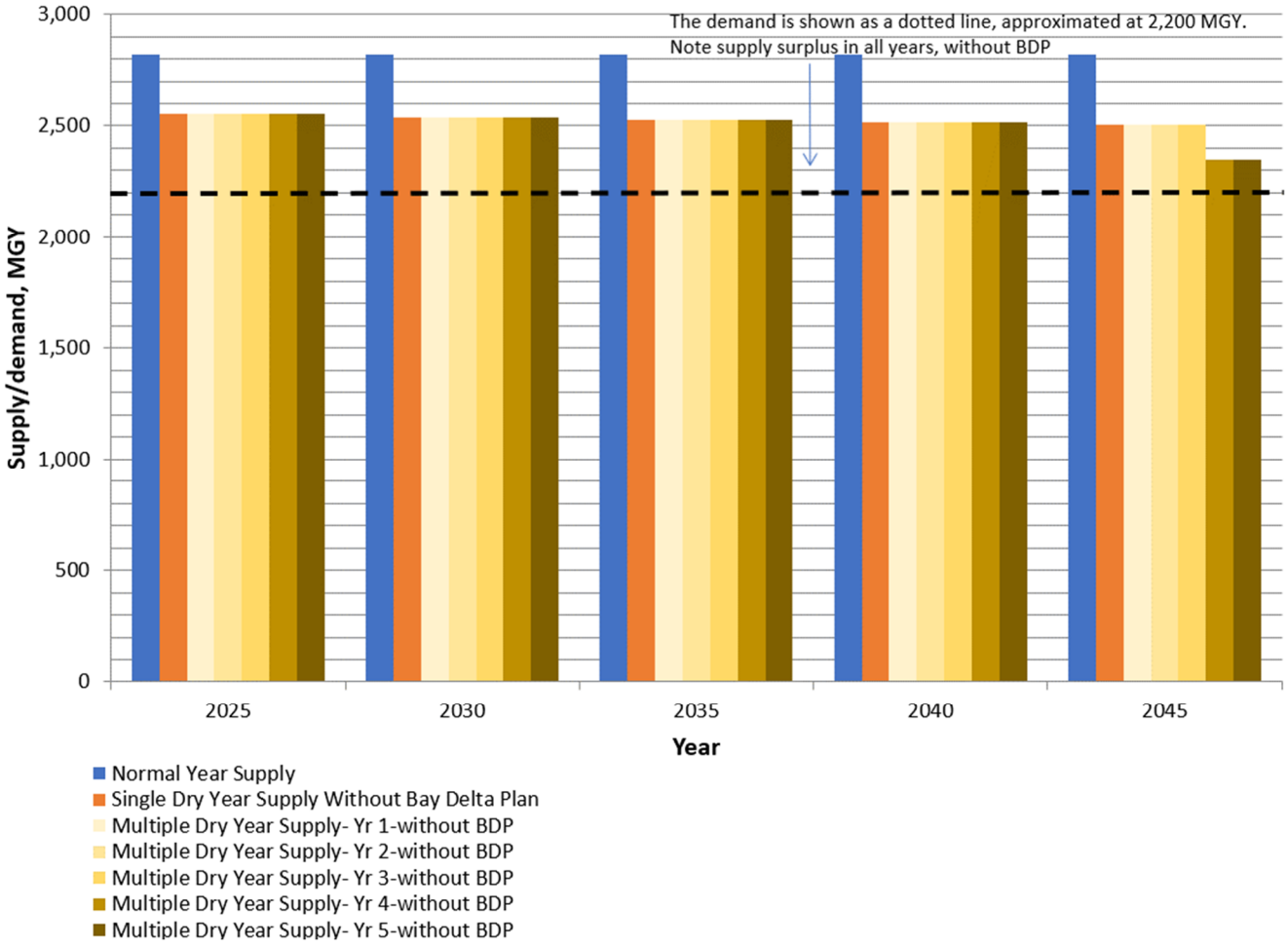

Figure 4-1. Scenario 1: Supply and demand comparison – Without Bay-Delta Plan

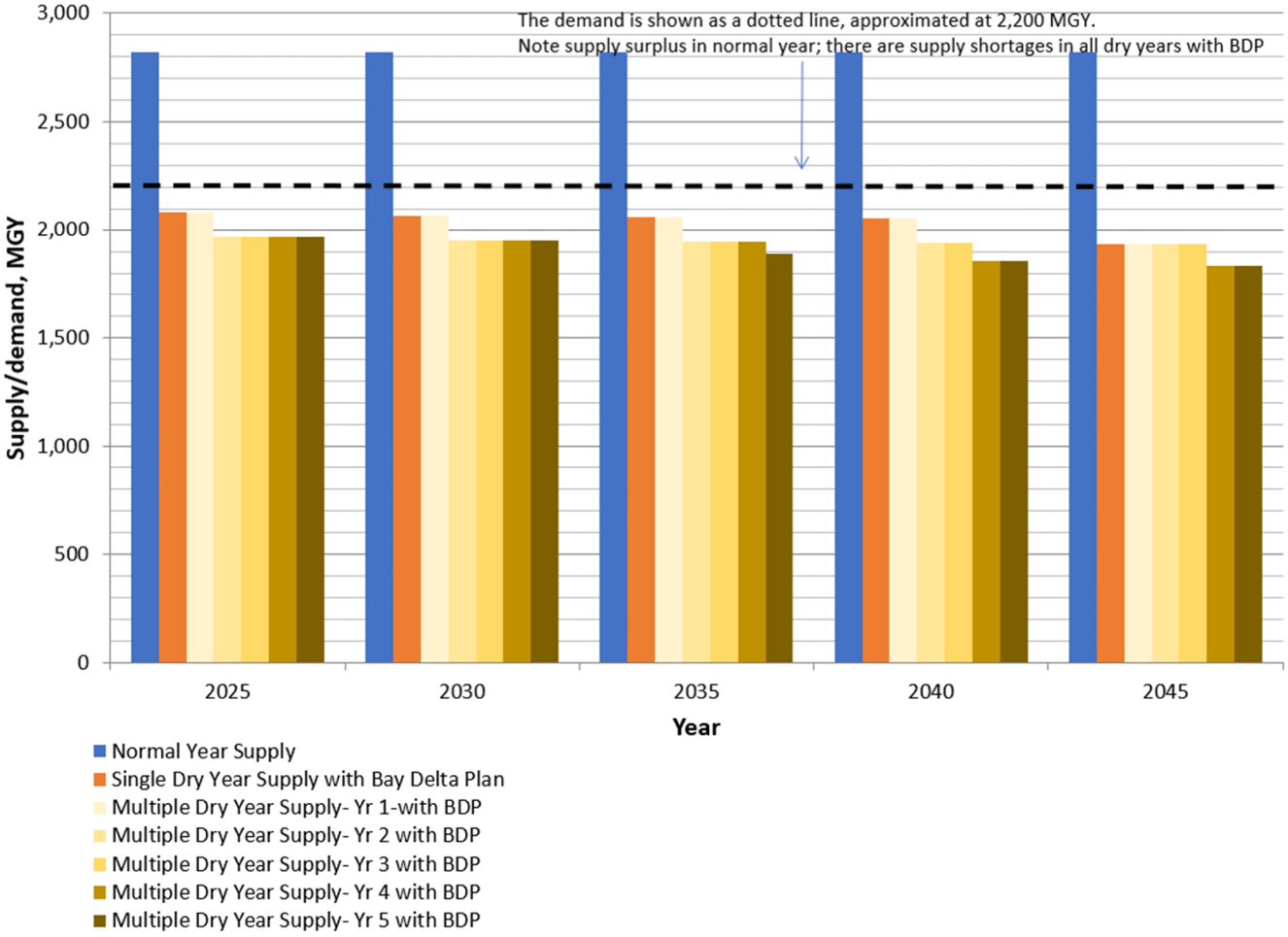

Figure 4-2. Scenario 2: Supply and demand comparison – With Bay-Delta Plan

4.2 WSA Determination

This section presents the WSA supply determination summary.

Scenario 1 - No Implementation of the Bay-Delta Plan Amendment or the Voluntary Agreement:

Daly City has sufficient water supply to meet all its expected future water demands, including the demands of the proposed Project, in normal, single, and multiple dry years scenarios.

Scenario 2 - Implementation of the Bay-Delta Plan Amendment:

Under this Scenario, Daly City has sufficient water supplies to serve the Project in normal years; however, supplies are insufficient to meet demand in single and multiple dry years.

With the implementation of the Bay-Delta Plan Amendment, the SFPUC RWS is projected to experience significant shortfalls in single and multiple dry years starting as soon as 2023 and through 2045, regardless of whether the proposed project is constructed. These significant shortfalls are a result of implementation of the Bay-Delta Plan Amendment and to a lesser extent are attributed to the incremental demand associated with the proposed project.

Although the WSAP does not address implications to supply during system-wide shortages above 20%, the WSAP indicates that if system-wide shortage greater than 20% were to occur, SFPUC RWS supply would be allocated between retail and Wholesale Customers per the rules corresponding to a 16-20% system-wide reduction, subject to consultation and negotiation between the SFPUC and its Wholesale Customers to modify the allocation rules.

During single and multiple dry years starting as soon as the year 2023, the estimated year of implementation of the Bay-Delta Plan Amendment, Daly City's total projected water supplies cannot meet the projected demands, including those of the proposed JUHSD MP project. The supply shortfalls are anticipated to range from 90-271 MGY in a single dry year and 207-374 MGY in multiple dry years.

4.2.1 Additional Water Supplies

To meet future demands and to cope with the reductions of dry year purchased water supplies that would result if DWR implements the Bay-Delta Plan Amendment, Daly City would need to take some or all of the following approaches:

1. Consider options for additional supply – Some options may include, but are not limited to, water transfers from other SFPUC wholesale customers, further groundwater exploration/development outside the existing developed groundwater basin, increased recycled water use, and/or increased conservation. For example, a new well producing 500 gpm (263 MGY) would make up nearly all the projected shortfalls under Scenario 2 in a single dry year. Refer to 2020 UWMP to see additional projects to reduce any anticipated shortfall.
2. Reduce water demands on a temporary basis by implementing Daly City's water shortage contingency plan as presented in Section 8 of the 2020 UWMP.
3. Decline projects seeking development approval – An obvious solution to the increasing supply deficit is to not approve further future development unless the developer clearly demonstrates a secured water right apart from Daly City's supplies that said developer can deliver to Daly City as a right in perpetuity.

Section 5

Conclusions

In accordance with the requirements of California Water Code sections 10910 through 10915, the WSA has determined that Daly City has sufficient water supplies available to serve the proposed JUHSD MP Project under Scenario 1 – No Bay-Delta Plan implementation. BC has based this conclusion on the availability of water supply for the proposed project primarily on the following findings:

- The projected available potable water supplies under non-drought conditions for the Daly City water system in 2045 are 2,819 MGY, and the estimated potable demand including this proposed development project is 2,206 MGY. Thus, BC has determined that sufficient Daly City water supplies are available to serve the proposed JUHSD MP Project under Scenario 1.
- Both groundwater and surface water supplies would provide water supplies needed to serve the proposed project. Historically, SFPUC has delivered sufficient treated surface water supplies to Daly City. This analysis incorporates reductions in surface water supplies from SFPUC of up to 20 percent of average in dry years per the 2020 UWMP; however, according to the SFPUC Common Language letter (Appendix A), SFPUC faces potential for further reductions of its supply due to the Bay-Delta Plan Amendment that could adversely affect water available to Daly City from the Regional Water Supply.

Nevertheless, this WSA identifies projected shortages and uncertainties regarding future supplies under Scenario 2 - Implementation of the Bay-Delta Plan Amendment. BC based this determination on the following information:

- Under Scenario 2, Daly City expects to experience shortfalls in single and multiple dry years starting as soon as 2023 and through 2045, regardless of whether the proposed project is constructed. These shortfalls result from implementation of the Bay-Delta Plan Amendment and to a lesser extent are attributed to the incremental demand associated with the proposed project. Dry year shortfalls would range from 90-374 MGY over the next 25 years, which represent of 4 to 17 percent of demands. While the supply planning analysis uses a yearly time step, shortfalls can be more severe for summer months when demands are higher.
- Daly City has limited ability to increase groundwater pumping from the Westside Basin to enhance water supply reliability and address added demands. Daly City currently has a sustainable yield of 1,252 MGY anticipated through 2045. However, Daly City has identified other undeveloped groundwater resources outside the Westside Basin that it currently considers developing. If such resources come to fruition, they could substantially overcome shortfalls in its dependence on the Regional Water Supply during droughts with the Bay-Delta Plan Amendment in place.
- Recycled water currently serves irrigation demands within Daly City and to nearby golf courses, which lowers the estimated demands for potable water and further enhances overall water supply reliability. City's recycled water expansion project (to be completed by 2035) would expand recycled water use and further enhance the groundwater availability.

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Section 6

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Appendix A: 2020 UWMP Packet (including SFPUC Common Language) and 03.30.21 Projection Revisions

Reference for supply reliability language. For drought allocation, use Appendix E (latest version of projections) instead.

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BAWSCA
Bay Area Water Supply & Conservation Agency

March 16, 2021

The following list of documents have been provided to the Member Agencies by BAWSCA to facilitate preparation of their 2020 UWMPs. Please contact Danielle McPherson at dmcpherson@bawsca.org or Negin Ashoori at nashoori@bawsca.org if you have any questions.

1. BAWSCA Common Language ***(Feb 10, 2021)***
2. SCPUC Common Language ***(Feb 3, 2021)***
3. Memo on UWMP Procedures, Legal Updates and Best Practices ***(Feb 2, 2021)***
    a. Attachment 1: Sample Notice of Public Hearing
    b. Attachment 2: Sample Notification Letter to Other Agencies
    c. Attachment 3: Sample Advertisement
4. Memo on SFPUC Supply Reliability Letter and Drought Cutbacks ***(Updated: Feb 18, 2021)***
    a. Attachment A: SFPUC Supply Reliability Letter ***(Jan 22, 2021)***
    b. Attachment B: 2020 UWMP Drought Cutbacks/Allocations ***(Updated March 1, 2021)***
5. Common Language about Rate Impacts of Water Shortages ***(March 4, 2021)***

Common Language for BAWSCA Member Agencies'

2020 UWMP Updates

BAWSCA

Description of BAWSCA

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

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

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

Regional Water Demand and Conservation Projections

In June 2020, BAWSCA completed the Regional Water Demand and Conservation Projections Report (Demand Study).[1] The goal of the Demand Study was to develop transparent, defensible, and uniform demand and conservation savings projections for each Wholesale Customer using a common methodology to support both regional and individual agency planning efforts and compliance with the new statewide water efficiency targets required by Assembly Bill (AB) 1668 and Senate Bill (SB) 606.

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

As part of the Demand Study, each Wholesale Customer was provided with a demand model that can be used to support ongoing demand and conservation planning efforts, including UWMP preparation.

[1] Phase III Final Report: http://bawsca.org/uploads/pdf/BAWSCA_Regional_Water_Demand_and_Conservation%20Projections%20Report_Final.pdf

Long-Term Reliable Water Supply Strategy

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

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

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

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

Water Transfers. BAWSCA successfully facilitated two transfers of portions of Individual Supply Guarantee (ISG) between BAWSCA agencies in 2017 and 2018. Such transfers benefit all BAWSCA agencies by maximizing use of existing supplies. BAWSCA is currently working on an amendment to the Water Supply Agreement between the SFPUC and BAWSCA agencies to establish a mechanism by which member agencies that have an ISG may participate in expedited transfers of a portion of ISG and a portion of a Minimum Annual Purchase Requirement. In 2019, BAWSCA participated in a pilot water transfer that, while ultimately unsuccessful, surfaced important lessons learned and produced interagency agreements that will serve as a foundation for future transfers. BAWSCA is currently engaged in the Bay Area Regional Reliability Partnership[2] (BARR), a partnership among eight Bay Area water utilities (including the SFPUC, Alameda County Water District, BAWSCA, Contra Costa Water District, Santa Clara Valley Water District) to identify opportunities to move water across the region as efficiently as possible, particularly during times of drought and emergencies.

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

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

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

Making Conservation a Way of Life Strategic Plan

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

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

- Conducted an assessment of the agencies' current practices and water industry best practices for three components of the efficiency legislation that, based on a preliminary review, present the greatest level of uncertainty and potential risk to the BAWSCA agencies. The three components were:
    1. Development of outdoor water use budgets in a manner that incorporates landscape area, local climate, and new satellite imagery data.
    2. Commercial, Industrial, and Institutional water use performance measures.
    3. Water loss requirements.
- Organized an Advanced Metering Infrastructure symposium to enable information exchange, including case studies, implementation strategies, and data analysis techniques.
- Initiated a regional CII audit pilot program, which BAWSCA aims to complete in 2021.[3]
- Implemented a regional program for water loss control to help BAWSCA agencies comply with regulatory requirements and implement cost-effective water loss interventions.
- Engaged with the SFPUC to audit meter testing and calibration practices for SFPUC's meters at BAWSCA agency turnouts.

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

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

Tier Two Drought Allocations

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

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

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

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

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

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

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

SFPUC's Efforts to Develop of Alternative Water Supplies

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

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

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

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

BAWSCA Conservation Programs

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

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

1. BAWSCA Common Language

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

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

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Common Language for BAWSCA Member Agencies' 2020 UWMPs

Tier One Drought Allocations

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

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

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

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

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

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

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

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

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

Tier Two Drought Allocations

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

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

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

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

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

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

Individual Supply Guarantee

San Francisco has a perpetual commitment (Supply Assurance) to deliver 184 mgd to the 24 permanent Wholesale Customers collectively. San Jose and Santa Clara are not included in the Supply Assurance commitment and each has temporary and interruptible water supply

contracts with San Francisco. The Supply Assurance is allocated among the 24 permanent Wholesale Customers through Individual Supply Guarantees (ISG), which represent each Wholesale Customer's allocation of the 184 mgd Supply Assurance.

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

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

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

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

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

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

Reliability of the Regional Water System

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

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

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

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Factors Impacting Supply Reliability

Adoption of the 2018 Bay-Delta Plan Amendment

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

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

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

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

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

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

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

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

Water Supply – All Year Types

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

- Tuolumne River watershed
- Alameda Creek watershed

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

- San Mateo County watersheds

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

WSIP Dry Year Water Supply Projects

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

- **Calaveras Dam Replacement Project**

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

- **Alameda Creek Recapture Project**

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

- **Lower Crystal Springs Dam Improvements**

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

- **Regional Groundwater Storage and Recovery Project**

  The Groundwater Storage and Recovery (GSR) Project is a strategic partnership between SFPUC and three San Mateo County agencies – the California Water Service Company (serving South San Francisco and Colma), the City of Daly City, and the City

of San Bruno – to conjunctively operate the south Westside Groundwater Basin. The project sustainably manages groundwater and surface water resources in a way that provides supplies during times of drought. During years of normal or heavy rainfall, the project would provide additional surface water to the partner agencies in San Mateo County in lieu of groundwater pumping. Over time, reduced pumping creates water storage through natural recharge of up to 20 billion gallons of new water supply available during dry years.

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

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

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

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

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

Alternative Water Supply Planning Program

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

  The Los Vaqueros Reservoir Expansion (LVE) Project is a storage project that will enlarge the existing reservoir located in northeastern Contra Costa County from 160,000 acre-feet to 275,000 acre-feet. While the existing reservoir is owned and operated by the Contra Costa Water District (CCWD), the expansion will have regional benefits and will be managed by a Joint Powers Authority (JPA) that will be set up prior to construction. Meanwhile, CCWD is leading the planning, design and environmental review efforts. CCWD's Board certified the EIS/EIR and approved the LVE Project on May 13, 2020. The additional storage capacity from the LVE Project would provide a dry year water supply benefit to the SFPUC. BAWSCA is working in concert with the SFPUC to support their work effort on the LVE project.
    - **Conveyance Alternatives:** The SFPUC is considering two main pathways to move water from storage in a prospective LVE Project to the SFPUC's service area, either directly to RWS facilities or indirectly via an exchange with partner agencies. The SFPUC is evaluating potential alignments for conveyance.
    - **Bay Area Regional Reliability Shared Water Access Program (BARR SWAP):** As part of the BARR Partnership, a consortium of 8 Bay Area water utilities (including ACWD, BAWSCA, CCWD, EBMUD, Marin Municipal Water District (MMWD), SFPUC, Valley Water, and Zone 7 Water Agency) are exploring opportunities to move water across the region as efficiently as possible, particularly during times of drought and emergencies. The BARR agencies are proposing two separate pilot projects in 2020-2021 through the Shared Water Access Program (SWAP) to test conveyance pathways and identify potential hurdles to better prepare for sharing water during a future drought or emergency. A strategy report identifying opportunities and considerations will accompany these pilot transfers and will be completed in 2021.

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

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

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

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

- **Groundwater Banking**

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

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

- **Inter-Basin Collaborations**

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

  As is the case with Groundwater Banking, feasibility of this option is included in the proposed Tuolumne River Voluntary Agreement.

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

Given the limited availability of water supply alternatives - unless the supply risks are significantly reduced or our needs change significantly - the SFPUC will continue to plan,

develop and implement all project opportunities that can help bridge the anticipated water supply gaps during droughts. In 2019, the SFPUC completed a survey among water and wastewater agencies within the service area to identify additional opportunities for purified water. Such opportunities remain limited, but the SFPUC continues to pursue all possibilities.

Projected SFPUC Regional Water System Supply Reliability

The SFPUC will provide tables presenting the projected RWS supply reliability under normal, single dry year, and multiple dry year scenarios.

Climate Change

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

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

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

Bay Area Integrated Regional Water Management Plan

Climate change adaptation continues to be an overarching theme for the 2019 BAIRWMP update. As stated in the BAIRWMP, identification of watershed characteristics that could

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

Summary of BAIRWMP Climate Change Vulnerability Assessment

Vulnerability Areas	General Overview of Vulnerabilities
Water Demand	**Urban and Agricultural Water Demand** – Changes to hydrology in the Region as a result of climate change could lead to changes in total water demand and use patterns. Increased irrigation (outdoor landscape or agricultural) is anticipated to occur with temperature rise, increased evaporative losses due to warmer temperature, and a longer growing season. Water treatment and distribution systems are most vulnerable to increases in maximum day demand.
Water Supply	**Imported Water** – Imported water derived from the Sierra Nevada sources and Delta diversions provide 66 percent of the water resources available to the Region. Potential impacts on the availability of these sources resulting from climate change directly affect the amount of imported water supply delivered to the Region. **Regional Surface Water** – Although future projections suggest that small changes in total annual precipitation over the Region will not change much, there may be changes to when precipitation occurs with reductions in the spring and more intense rainfall in the winter. **Regional Groundwater** – Changes in local hydrology could affect natural recharge to the local groundwater aquifers and the quantity of groundwater that could be pumped sustainably over the long-term in some areas. Decreased inflow from more flashy or more intense runoff, increased evaporative losses and warmer and shorter winter seasons can alter natural recharge of groundwater. Salinity intrusion into coastal groundwater aquifers due to sea-level rise could interfere with local groundwater uses. Furthermore, additional reductions in imported water supplies would lead to less imported water available for managed recharge of local groundwater basins and potentially more groundwater pumping in lieu of imported water availability.
Water Quality	**Imported Water** – For sources derived from the Delta, sea-level rise could result in increases in chloride and bromide (a disinfection by-product (DBP) precursor that is also a component of sea water),

Vulnerability Areas	General Overview of Vulnerabilities
	potentially requiring changes in treatment for drinking water. Increased temperature could result in an increase in algal blooms, taste and odor events, and a general increase in DBP formation **Regional Surface Water** – Increased temperature could result in lower dissolved oxygen in streams and prolong thermocline stratification in lakes and reservoirs forming anoxic bottom conditions and algal blooms. Decrease in annual precipitation could result in higher concentrations of contaminants in streams during droughts or in association with flushing rain events. Increased wildfire risk and flashier or more intense storms could increase turbidity loads for water treatment. **Regional Groundwater** – Sea-level rise could result in increases in chlorides and bromide for some coastal groundwater basins in the Region. Water quality changes in imported water used for recharge could also impact groundwater quality.
Sea-Level Rise	Sea-level rise is additive to tidal range, storm surges, stream flows, and wind waves, which together will increase the potential for higher total water levels, overtopping, and erosion. Much of the bay shoreline is comprised of low-lying diked baylands which are already vulnerable to flooding. In addition to rising mean sea level, continued subsidence due to tectonic activity will increase the rate of relative sea-level rise. As sea-level rise increases, both the frequency and consequences of coastal storm events, and the cost of damage to the built and natural environment, will increase. Existing coastal armoring (including levees, breakwaters, and other structures) is likely to be insufficient to protect against projected sea-level rise. Crest elevations of structures will have to be raised or structures relocated to reduce hazards from higher total water levels and larger waves.
Flooding	Climate change projections are not sensitive enough to assess localized flooding, but the general expectation is that more intense storms would occur thereby leading to more frequent, longer and deeper flooding. Changes to precipitation regimes may increase flooding. Elevated Bay elevations due to sea-level rise will increase backwater effects exacerbating the effect of fluvial floods and storm drain backwater flooding.

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

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

SFPUC Climate Change Studies

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

- With differing increases in temperature alone, the median annual runoff at Hetch Hetchy would decrease by 0.7-2.1% from present-day conditions by 2040 and by 2.6-10.2% from

present-day by 2100. Adding differing decreases in precipitation on top of temperature increases, the median annual runoff at Hetch Hetchy would decrease by 7.6-8.6% from present-day conditions by 2040 and by 24.7-29.4% from present-day conditions by 2100.

- In critically dry years, these reductions in annual runoff at Hetch Hetchy would be significantly greater, with runoff decreasing up to 46.5% from present day conditions by 2100 utilizing the same climate change scenarios.
- In addition to the total change in runoff, there will be a shift in the annual distribution of runoff. Winter and early spring runoff would increase and late spring and summer runoff would decrease.
- Under all scenarios, snow accumulation would be reduced and snow would melt earlier in the spring, with significant reductions in maximum peak snow water equivalent under most scenarios.

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

BAWSCA
Bay Area Water Supply & Conservation Agency

February 2, 2021

TO: BAWSCA Member Agencies

FROM: Danielle McPherson, Tom Francis

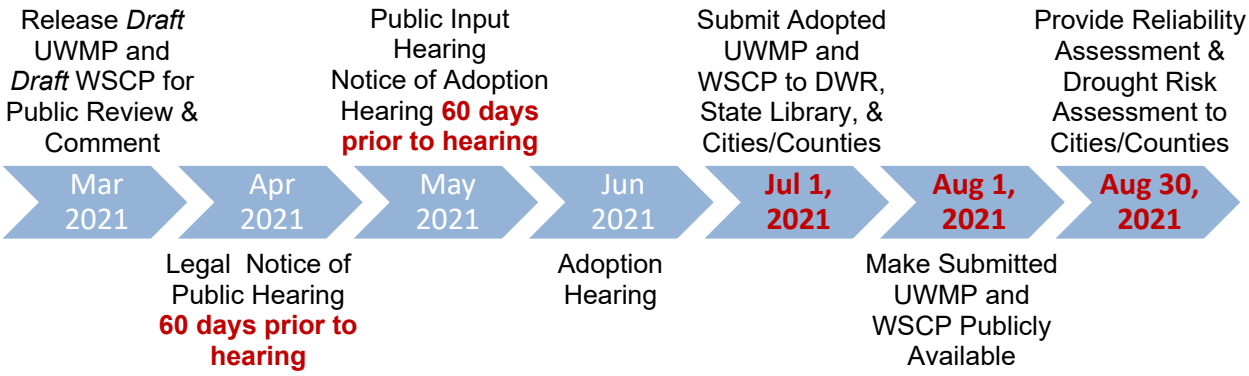
SUBJECT: Urban Water Management Plans: Procedures, Legal Updates and Best Practices

This memorandum provides agencies that are updating their Urban Water Management Plans (UWMPs) with a general overview of the process, new legal requirements, and best practices for updating a UWMP pursuant to the Urban Water Management Planning Act (Act) (Wat. Code, §§ 10610 et seq.). Please note that this memorandum offers a high-level summary. More detailed and comprehensive guidance is available in the California Department of Water Resources (DWR) Draft Urban Water Management Plan Guidebook 2020 (Draft Guidebook).[1] Agencies are also encouraged to consult with their legal counsel to ensure compliance with all applicable procedural and substantive requirements.

1. Procedural Overview and Timeline

Each urban water supplier serving more than 3,000 acre-feet per year or 3,000 customers must update its UWMP to include current and new information at least once every five years on or before July 1, in years ending in six and one, in accordance with the Act. (Wat. Code, § 10620, 10621). Under SB 606 (effective January 1, 2019), every urban water supplier must also prepare and adopt a Water Shortage Contingency Plan (WSCP) as part of its UWMP consisting of certain elements described in Water Code Section 10632. This new mandate replaces the water shortage contingency analysis under former UWMP law. Agencies will generally follow the same notice and public hearing requirements for both UWMPs and WSCPs. The timeline below shows an example coordinated notice and submittal process.

Example Notice and Submittal Timeline (Key Dates in Red)



[1] Draft UWMP Guidebook 2020: https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Water-Use-And-Efficiency/Urban-Water-Use-Efficiency/Urban-Water-Management-Plans/Draft-2020-UWMP-Guidebook.pdf?la=en&hash=266FE747760481ACF779F0F2AAEE615314693456

a) Legal Notice of Public Hearing

Each urban water supplier must "encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation" of both its UWMP and its WSCP (Wat. Code, § 10642). Prior to adopting a UWMP or WSCP, an agency must make its UWMP and WSCP available for public inspection and hold a properly noticed public hearing in accordance with Section 10642 of the Water Code.

Notice of the time and place of the public hearing must be: (1) published within the water supplier's jurisdiction pursuant to Government Code Section 6066;[2] (2) provided pursuant to the Dymally-Alatorre Bilingual Services Act (Government Code Section 7290 et seq.);[3] (3) provided to any city or county within which the supplier provides water supplies; and (4) provided "within its service area," if the water supplier is privately owned (*Id.*). If your agency is a city and doesn't supply water outside your jurisdictional boundaries, you should send the notice to the county in which you are located. While not expressly required by the Water Code, BAWSCA and DWR also recommend that the notice of public hearing include: (1) where the UWMP and WSCP can be viewed, (2) the UWMP revision schedule, and (3) and who at your agency to contact for questions.

The notice of the public hearing for the UWMP must be published and circulated at least 60 days before the public hearing on the UWMP (Wat. Code, § 10621(b)). To streamline the process, BAWSCA recommends consolidating the notices and public hearings for both the UWMP and the WSCP, as illustrated in the timeline above.

BAWSCA recommends agencies issue notice of the public hearing on the UWMP and WSCP as soon as the draft plans are available. For your reference, a Sample Notice to of Public Hearing, prepared by Hanson Bridgett, is enclosed as Attachment 1. Consult with your legal counsel to make sure your notice meets the requirements of Government Code Section 10642. Agencies may use *Table 10-1. Retail. Notification to Cities and Counties*, shown in Section 10.2.1.3 and Appendix E of the Draft Guidebook to verify noticing requirements were met.

Agencies must "coordinate" the preparation of their UWMP with "other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable" (Wat. Code, § 10620(d)(3)). To satisfy this requirement, BAWSCA recommends that you notify BAWSCA,[4] the sanitation agency that serves your area, and (for agencies in Santa Clara County) the Santa Clara Valley Water District that you are updating your UWMP and WSCP, in addition to all cities or counties within which you supply water. Chapter 2.6.2 of the Draft Guidebook provides a non-comprehensive list of agencies and organizations DWR recommends water suppliers coordinate with. You may identify other agencies that could be considered "appropriate" or "relevant" to whom the notice should also be sent. A sample letter to other public agencies is enclosed as Attachment 2.

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

[3] This is new legal requirement was added by SB 606. Consult with your legal counsel to determine if any additional information must be included in the notice to comply with the Dymally-Alatorre Bilingual Services Act.

[4] Sending the notice to BAWSCA will do double duty because BAWSCA is both (1) a "water management agency" and (2) the vehicle through which you can "coordinate" preparation of your Plan with "other water suppliers that share a common source."

b) Additional Efforts to Encourage Public Participation

You may further encourage diverse social, cultural, and economic elements of the population within your service area to be involved in the development of your updated UWMP and WSCP by publishing and/or displaying an advertisement (not a “legal” notice) in a newspaper of general circulation in your service area (*see* Wat. Code, § 10642). To assist your agency in providing such notice, a sample advertisement, also drafted by Hanson Bridgett, is enclosed as Attachment 3. Note that this advertisement is different than the legal notice of public hearing. In light of the Act’s requirement that public participation is to be encouraged "prior to and during the preparation of both the plan and the water shortage contingency plan," BAWSCA suggests circulating this advertisement as soon as possible (*Id.*).

This advertisement should by no means be considered the only way to invite your community’s participation. Other methods could include notices sent with water bills, press releases to local media, ads in community/neighborhood newspapers, and posts on Nextdoor or other social media platforms. BAWSCA recommends you keep a copy of the notices, the advertisements, and any other public outreach materials you distribute.

c) Noticed Public Hearing(s)

The UWMP and WSCP must be adopted as prepared or as modified after the public hearing(s) (Wat. Code, § 10642). The public hearing may take place at the same meeting as the adoption hearing of your governing board, but the final version adopted must include any modifications made as a result of the public hearing. If you choose to combine these meetings, the agenda must include the public hearing as a separate agenda item that occurs before adoption. If you chose to hold the public input hearing and adoption hearing at separate meetings, both hearings must be properly noticed in accordance with the requirements discussed above.

DWR recommends including a copy of the adoption resolution in the UWMP and WSCP.

d) Transmittal of Adopted Plan: Timing, Format, and Submittal Instructions

Within 30 days after adoption, you must send a copy of the adopted UWMP to DWR, the California State Library, and any city or county within which your agency supplies water (Wat. Code, § 10644(a)(1)). Water suppliers must submit their adopted 2020 UWMP to DWR by July 1, 2021 (Wat. Code, § 10621(f)). Water suppliers must submit their WSCP to the DWR no later than 30 days of adoption (Wat. Code, § 10644(b)).

UWMPs and WSCPs must be submitted to DWR electronically and must include any standardized forms, tables, or displays specified by the department (Wat. Code, § 10644(a)(2)). Draft versions of the standardized forms and tables can be viewed in Appendix E of the Draft Guidebook and Excel versions can be downloaded from the DWR SharePoint site.[5] DWR is updating the online submittal tool (i.e., WUE Data Portal)[6] for the UWMPs and anticipates making the standardized forms and tables and the WUE Data Portal accessible in the Spring of 2021.

The Draft Guidebook provides that it is permissible to submit your adopted UWMP to any city or county within which your agency supplies water in electronic format. You must submit a CD or hardcopy of your adopted UWMP to the California State Library at:

[5] Email WUE@wue.ca.gov to gain access to the DWR SharePoint site.
[6] WUEdata Portal: https://wuedata.water.ca.gov/secure/login_auth.asp?msg=inactivity&referer=/secure/Default.asp?

California State Library
Government Publications Section
Attention: Coordinator, Urban Water Management Plans
P.O. Box 942837
Sacramento, CA 94237-0001

e) Public Access to Adopted UWMP and WSCP

You must make the UWMP and WSCP available for public review during normal business hours no later than 30 days after filing copies of the adopted UWMP and WSCP with the DWR (Wat. Code, § 10645).

2. Water Shortage Contingency Plans

In 2018, the Legislature modified the Water Code to require a WSCP with specific elements. The WSCP is a document that provides a supplier with an action plan for a drought or catastrophic water supply shortage. Although the new requirements are more prescriptive than previous versions, many of these elements have long been included in WSCPs, other sections of UWMPs, or as part of a supplier's standard procedures and response actions. Many of these actions were implemented by suppliers during the last drought, to successfully meet changing local water supply challenges. The WSCP will also have statewide utility for DWR, the State Water Board, and the Legislature in addressing extreme drought conditions or statewide calamities that impact water supply availability (Water Code section 10632.1).

The Water Code was also amended to require six standard water shortage levels in your WSCP (Water Code 10632(a)(3)). The change was intended to provide consistency across agencies. However, Water Code Section 10632 (a)(3)(B) authorizes suppliers to continue using their own water shortage levels that may have been included in past WSCPs. If your agency chooses to continue using existing water shortage levels, you must include a "crosswalk" that clearly translates your agencies water shortage levels to those mandated by the statute. An example "crosswalk" is provided in the Draft Guidebook.

Substantive and procedural WSCP requirements are included Water Code 10632 and Chapter 8 of the Draft Guidebook.

3. Changes to the Water Code since Adoption of 2015 Plans

The following is a non-exhaustive list of new requirements adopted since 2015 that focus on specific information about BAWSCA water supply and conservation efforts. A full list of new requirements is provided at the beginning of each chapter in the Draft Guidebook.

a) Lay Description

The Legislature added a new statutory requirement for water suppliers to include a lay description of the fundamental determinations of the UWMP, especially regarding water service reliability, challenges ahead, and strategies for managing reliability risks. The lay description could be viewed as a go-to synopsis for new staff, new members of the agency's legislative body, customers, and the media, and it can ensure a consistent representation of the supplier's detailed analysis (Wat. Code, § 10630.5).

How and where you include the lay description in your UWMP is up to you. For example, you may include the lay description in the introduction to your UWMP or within each chapter. BAWSCA recommends including the lay description in both the introduction and in each chapter so that each section is easily understood and accessible to the public. BAWSCA also recommends that the lay description be written at the eighth-grade reading level.

b) Coordination with other Agencies and Land Use Projections

Water Code Section 10631(a) requires suppliers to provide a description of both current and projected land uses in the current and anticipated service area(s) and coordination with local and regional land use authorities to identify the most appropriate land use information to use. BAWSCA's Regional Water Demand and Conservation Projections Report (Demand Study) utilized the Association of Bay Area Governments' (ABAG) population and employment projections. If your agency uses those projections in your UWMP, the Demand Study is one example of coordination with local and regional land use authorities. BAWSCA does not suggest that referencing ABAG data in the Demand Study is the only way your agency can or should meet this requirement.

c) Other Social, Economic, and Demographic Factors

Water Code Section 10631 requires UWMPs to include a description of social, economic and demographic factors affecting the supplier's water management planning. Some factors suppliers may choose to consider include: income and poverty levels, amount of unemployment, major languages spoken or cultural clusters, education levels, general health status and age distribution of population served, economic viability and types of non-residential uses, redevelopment and special tax districts, types and proportions of housing, age of buildings, and others. Recent trends or shifts in these factors may also affect water management and planning.

The Econometric Model used in BAWSCA's Demand Study[7] considers unemployment rates and projects demands assuming a normal economy. Age of buildings is also considered with regard to end uses as a result of plumbing code changes/assumed fixture replacement rates. If your agency is using the Demand Side Management Least Cost Planning Decision Support System (DSS) Model developed as part of the Demand Study, you may consider including reference to these assumptions in your UWMP as one way of satisfying this new requirement. BAWSCA does not suggest that this is the only way your agency can or should meet this requirement.

d) Water Loss

The UWMP must quantify the distribution system water loss for each of the five years preceding the plan update, in accordance with rules adopted pursuant to Water Code Section 10608.34, and in the data must show whether the urban retail water supplier met the distribution loss standards enacted by the State Water Resource Control Board pursuant to Section 10608.34 (Wat. Code, § 10631(d)(3)(A) and (C)). If the State Water Resources Control Board adopts a water loss standard before the 2020 UWMP submittal, your agency's UWMP must include data demonstrating whether your agency has met the standard or not.

e) Five Consecutive Dry-Year Water Reliability Assessment

[7] Demand Study: http://bawsca.org/uploads/pdf/BAWSCA_Regional_Water_Demand_and_Conservation%20Projections%20Report_Final.pdf

The Legislature modified the dry-year water reliability planning from a "multiyear" time period to a "drought lasting five consecutive water years" designation (Wat. Code, § 10635(a)). This statutory change requires a supplier to analyze the reliability of its water supplies to meet its water use over an extended drought period (*Id.*). The SFPUC has provided tables presenting the projected Regional Water System (RWS) supply reliability under normal, single dry year, and multiple dry year scenarios.

f) Climate Change Impacts

The Water Code now requires consideration of climate change impacts on water use, supply, and reliability (Wat. Code, § 10635(b)). A qualitative description of climate change impacts can also be included in your UWMP's section on system and service area description. BAWSCA's Demand Study describes how climate change impacts were included in the study and your agency's DSS model. For sample language to include in your agency's UWMP, please refer to Chapter 3.6 of the Demand Study.

The SFPUC intends to provide BAWSCA agencies with common language that discusses findings from their climate change study. An alternative resource is the State of California's Fourth Climate Change Assessment completed in 2018 for nine regions, including the San Francisco Bay Area.[8]

If available for your service area, your agency might also consider using maps and map layers to depict climate change impacts. For example, you may include map layers projecting sea level rise, storm surges, extreme heat, and wildfires in relation to your water system assets.

g) Mandatory Reporting of Energy Intensity

Water Code Section 10631.2(a) provides that water suppliers shall include estimates of the amount of energy used to extract, convey, treat, and distribute water supplies. An estimate of the amount of energy used to place water into or withdraw from storage is also required. Finally, a supplier must include a comparison of the estimated amount of energy used for treated and nontreated supplies. Any other energy-related information the supplier deems appropriate may be included in your UWMP.

Your agency is only required to estimate energy intensity for the water system that you manage and operate. The SFPUC will include estimates of energy intensity for the SF RWS in their Plan.

h) Drought Risk Assessment

The Legislature created a new UWMP requirement for drought planning in part because of the significant duration of recent California droughts and the predictions about hydrological variability attributable to climate change. The Drought Risk Assessment (DRA) must include an assessment of water supply reliability over a five-year period from 2021 to 2025 that examines water supplies, water uses, and the resulting water supply reliability under a reasonable prediction for five consecutive dry years (Wat. Code, § 10635(b)).

Please feel free to contact Danielle McPherson at dmcpherson@bawsca.org or Negin Ashoori at nashoori@bawsca.org if you have any questions.

Attached: Attachment 1: Sample Notice of Public Hearing

[8] San Francisco Bay Area Climate Change Assessment: https://www.energy.ca.gov/sites/default/files/2019-11/Reg_Report-SUM-CCCA4-2018-005_SanFranciscoBayArea_ADA.pdf

Attachment 2: Sample Notification Letter to Other Agencies
Attachment 3: Sample Advertisement

cc: Nicole Sandkulla
Allison Schutte
Katherine Tsou

ATTACHMENT 1:
SAMPLE NOTICE OF PUBLIC HEARING
(*FOR PUBLICATION ONCE A WEEK FOR TWO SUCCESSIVE WEEKS)*

<Agency Name>
PUBLIC HEARING ON UPDATE OF URBAN WATER MANAGEMENT PLAN AND WATER SHORTAGE CONTINGENCY PLAN

California law requires <Agency Name> review and update its Urban Water Management Plan (UWMP) every five years. Additionally, the California Department of Water Resources has imposed new requirements for urban water suppliers to adopt a Water Shortage Contingency Plan (WSCP). The <City Council/Board of Directors> will hold a public hearing to consider proposed revisions and updates to its UWMP for 2020-2025 and its WSCP on:

<date, time virtual location (include access instructions for virtual meetings)>

<Agency's> draft 2020 UWMP and WSCP can be viewed at <link>.

Our revision schedule is as follows: <Insert schedule if available>

If you have any questions about <Agency's> UWMP or WSCP, please contact <name>, <title>, at <phone and/or email>.

Date: _____, 2021

ATTACHMENT 2:
SAMPLE UWMP AND WSCP REVIEW NOTIFICATION LETTER TO OTHER AGENCIES

ON AGENCY LETTERHEAD

<Date>
<Recipient's Address>

Re: Review of <Agency's> Urban Water Management Plan and Water Shortage Contingency Plan

Dear <City/County/BAWSCA/Water or Sanitation Agency>,

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

<Agency's> draft 2020 UWMP and WSCP can be viewed at <link>. Our revision schedule is as follows:

<Insert schedule if available>

<Agency> will make revisions to its UWMP and WSCP available for public review and will hold a public hearing later this year. <City/County/BAWSCA/Water or Sanitation Agency> will be given notice of the <Agency's City Council or Board of Directors> meeting in which the UWMP update and WSCP will be considered.

If you have any questions about <Agency's> UWMP or WSCP, please contact <name>, <title>, at <phone and/or email>.

Sincerely,

<Agency>

ATTACHMENT 3:
SAMPLE ADVERTISEMENT

<AGENCY NAME>

UPDATE OF URBAN WATER MANAGEMENT PLAN AND WATER SHORTAGE CONTINGENCY PLAN

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

<Name of contact person>
<Address>
<Telephone number>
< Facsimile number>
<Email address>

4. Memo on SFPUC Supply Reliability Letter and Drought Cutbacks

BAWSCA
Bay Area Water Supply & Conservation Agency

February 18, 2021

TO: BAWSCA Member Agencies

FROM: Danielle McPherson, Senior Water Resources Specialist
Tom Francis, Water Resources Manager

SUBJECT: San Francisco Regional Water System Supply Reliability for 2020 Urban Water Management Plans

The purpose of this memorandum is to provide updated drought allocations among the Member Agencies under the various scenarios provided in the San Francisco Public Utilities Commission (SFPUC) Regional Water System (RWS) Supply Reliability Letter dated January 22, 2021 and transmitted to the Member Agencies via email on January 25th ("Supply Reliability Letter", Attachment A). As presented and discussed at the February 12th BAWSCA Urban Water Management Plan (UWMP) Workshop, the Tier 2 Drought Allocation Plan was not designed for RWS shortages greater than 20 percent. As a result, the Tier 2 allocation tables shared with the Supply Reliability Letter showed unexpected and wide-ranging results between Member Agencies that should not be used for UWMP purposes.

As provided for in the 2018 Amended and Restated Water Supply Agreement (WSA), the SFPUC will honor new Tier 2 allocations agreed upon by all Member Agencies if an RWS shortage greater than 20 percent is declared. However, at this time, there is no method for allocating supplies under such significant cutbacks. Additionally, the time it would take to negotiate a modified Tier 2 plan to address those significant cutbacks would be extensive and greater than the timeline required for BAWSCA to provide your agency with numbers for input into your 2020 UWMP submittals.

For these reasons, BAWSCA is recommending that for the purpose of the 2020 UWMP updates, allocation of wholesale RWS supplies should be as follows:

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

Attachment B "Updated 2020 UWMP Drought Cutbacks" provides further detail, including recommended wholesale RWS allocation tables, for use in your agency's 2020 UWMP.

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

water needs to support critical institutions such as hospitals, and minimizing economic impacts on individual communities and the region.

Enclosed: Attachment A: Supply Reliability Letter
Attachment B: Updated 2020 UWMP Drought Cutbacks

cc: Nicole Sandkulla
Allison Schutte

San Francisco
Water Power Sewer
Services of the San Francisco Public Utilities Commission

525 Golden Gate Avenue, 13th Floor
San Francisco, CA 94102
T 415.554.3155
F 415.554.3161
TTY 415.554.3488

January 22, 2021

Danielle McPherson
Senior Water Resources Specialist
Bay Area Water Supply and Conservation Agency
155 Bovet Road, Suite 650
San Mateo, CA 94402

Dear Ms. McPherson,

Attached please find the information you requested on the Regional Water System's supply reliability for use in the Wholesale Customer's 2020 Urban Water Management Plan (UWMP) updates. The SFPUC has assessed the water supply reliability under the following planning scenarios:

- Projected supply reliability for year 2020 through 2045
- Projected single dry year and multiple dry year reliability for base year 2020, both with and without implementation of the Bay-Delta Plan Amendment
- Projected single dry year and multiple dry year reliability for base year 2025, both with and without implementation of the Bay-Delta Plan Amendment

The tables presented below assume full implementation of the Bay-Delta Plan Amendment will begin in 2023. All tables assume that the wholesale customers will purchase 184 mgd from the RWS through 2045. Assumptions about the status of the dry-year water supply projects included in the Water Supply Improvement Program (WSIP) are provided below in the table 'WSIP Project Assumptions'. The tables reflect instream flow requirements at San Mateo and Alameda Creeks, as described in the common language provided to BAWSCA separately.

Concerning allocation of supply during dry years, the Water Shortage Allocation Plan (WSAP) was utilized to allocate shortages between the SFPUC and the Wholesale Customers collectively. The WSAP implements a method for allocating water between the SFPUC retail customers and wholesale customers collectively which has been adopted by the Wholesale Customers per the July 2009 Water Supply Agreement between the City and County of

San Francisco and Wholesale Customers in Alameda County, San Mateo County, and Santa Clara County. The WSAP, also known as the Tier One Plan, was amended in the 2018 Amended and Restated Water Supply Agreement. The wholesale customers have adopted the Tier Two Plan, the second component of the WSAP, which allocates the collective wholesale customer share among each of the 26 wholesale customers.

Compared to the reliability projections that were provided previously for the 2015 UWMP update, the biggest difference in projected future deliveries is caused by the implementation of the Bay-Delta Plan Amendment. Given the uncertainty about the implementation of the Amendment (described further in the common language provided to BAWSCA), tables are included to show future projected supplies both with and without the Bay-Delta Plan Amendment.

It is our understanding that you will pass this information on to the Wholesale Customers. If you have any questions or need additional information, please do not hesitate to contact Sarah Triolo, at striolo@sfwater.org or (628) 230 0802.

Sincerely,

Paula Kehoe
Director of Water Resources

Table 1: WSIP Project Assumptions

	2020	2025 and Beyond
Calaveras Dam Replacement Project	Calaveras Reservoir partially refilled at spring 2020 level of 63,900 AF	Calaveras Reservoir fully refilled
Lower Crystal Springs Dam Improvements	Crystal Springs storage not restored	
Regional Groundwater Storage and Recovery (GSR) Project	GSR account partially filled at spring 2020 level of 23,500 AF; GSR recovery rate of 6.2 mgd	GSR account fully filled; GSR recovery rate of 6.2 mgd
Alameda Creek Recapture Project	Project not built	Project built
Dry-year Transfers	Not in effect	

Table 2: Projected Wholesale Supply from Regional Water System [For Table 6-9]:

Year	2020	2025	2030	2035	2040	2045
RWS Supply (mgd)	265	265	265	265	265	265
Wholesale Supply (mgd)	184	184	184	184	184	184

Table 3: Basis of Water Supply Data [For Table 7-1], 2020 Infrastructure Conditions With Bay Delta Plan

Year Type	Base Year	RWS Volume Available (mgd)	% of Average Supply	Wholesale Volume Available (mgd)	Notes on Calculation of Wholesale Supply
Average year	2020	265	100%	184	
Single dry year		238.5	90%	157.5	• At 10% shortage, wholesale allocation is 64%, or 152.6 mgd • Retail allocation is 36%, or 85.9 mgd • Retail allocations above 81 mgd are re-allocated to Wholesale Customers, per the 2018 WSA • 4.9 mgd added to wholesale allocation, bringing it to 157.5 mgd
Consecutive 1st Dry year		238.5	90%	157.5	• Same as above
Consecutive 2nd Dry year		212	80%	132.5	• At a 20% shortage, wholesale allocation is 62.5%, or 132.5 mgd • Retail allocation is 37.5%, or 79.5 mgd
Consecutive 3rd Dry year[1]		119.25	45%	74.5	• WSA does not define percentage split above a 20% shortage level • Assume same split as for a 20% shortage level, i.e. Wholesale Customers receive 62.5%
Consecutive 4th Dry year		119.25	45%	74.5	• Same as above
Consecutive 5th Dry year		119.25	45%	74.5	• Same as above

[1] Assuming this year represents 2023, when Bay Delta Plan Amendment would come into effect.

Table 4: Basis of Water Supply Data [For Table 7-1], 2020 Infrastructure Conditions Without Bay Delta Plan

Year Type	Base Year	RWS Volume Available (mgd)	% of Average Supply	Wholesale Volume Available (mgd)	Notes on Calculation of Wholesale Supply
Average year	2020	265	100%	184	
Single dry year		238.5	90%	157.5	• At 10% shortage, wholesale allocation is 64%, or 152.6 mgd • Retail allocation is 36%, or 85.9 mgd • Retail allocations above 81 mgd are re-allocated to Wholesale Customers, per the 2018 WSA • 4.9 mgd added to wholesale allocation, bringing it to 157.5 mgd
Consecutive 1st Dry year		238.5	90%	157.5	• Same as above
Consecutive 2nd Dry year		212	80%	132.5	• At a 20% shortage, wholesale allocation is 62.5%, or 132.5 mgd • Retail allocation is 37.5%, or 79.5 mgd
Consecutive 3rd Dry year		212	80%	132.5	• Same as above
Consecutive 4th Dry year		212	80%	132.5	• Same as above
Consecutive 5th Dry year		212	80%	132.5	• Same as above

Table 5: Basis of Water Supply Data [For Table 7-1], 2025 Infrastructure With Bay Delta Plan

Year Type	Base Year	RWS Volume Available (mgd)	% of Average Supply	Wholesale Volume Available (mgd)	Notes on Calculation of Wholesale Supply
Average year	2025	265	100%	184	
Single dry year		132.5	50%	82.8	• WSA does not define percentage split above a 20% shortage level • Assume same split as for a 20% shortage level, i.e. Wholesale Customers receive 62.5%
Consecutive 1st Dry year		132.5	50%	82.8	• Same as above
Consecutive 2nd Dry year		119.25	45%	74.5	• Same as above
Consecutive 3rd Dry year		119.25	45%	74.5	• Same as above
Consecutive 4th Dry year		119.25	45%	74.5	• Same as above
Consecutive 5th Dry year		119.25	45%	74.5	• Same as above

Table 6: Basis of Water Supply Data [For Table 7-1], 2025 Infrastructure Without Bay Delta Plan

Year Type	Base Year	RWS Volume Available (mgd)	% of Average Supply	Wholesale Volume Available (mgd)	Notes on Calculation of Wholesale Supply
Average year	2025	265	100%	184	
Single dry year		238.5	90%	157.5	• At 10% shortage, wholesale allocation is 64% • Retail allocation is 36%, or 85.9 mgd; retail allocations above 81 mgd are re-allocated to Wholesaler Customers, per the 2018 WSA • 4.9 mgd added to wholesale allocation, bringing it to 157.5 mgd
Consecutive 1st Dry year		238.5	90%	157.5	• Same as above
Consecutive 2nd Dry year		238.5	90%	157.5	• Same as above
Consecutive 3rd Dry year		238.5	90%	157.5	• Same as above
Consecutive 4th Dry year		212	80%	132.5	• At a 20% shortage, wholesale allocation is 62.5%, or 132.5 mgd • Retail allocation is 37.5%, or 79.5 mgd
Consecutive 5th Dry year		212	80%	132.5	• Same as above

Table 7: Projected Multiple Dry Years Wholesale Supply from RWS [For Table 7-4], With Bay Delta Plan

	2025	2030	2035	2040	2045
First year	82.8	82.8	82.8	82.8	82.8
Second year	74.5	74.5	74.5	74.5	74.5
Third year	74.5	74.5	74.5	74.5	74.5
Fourth year	74.5	74.5	74.5	74.5	74.5
Fifth year	74.5	74.5	74.5	74.5	74.5

Table 8: Projected Multiple Dry Years Wholesale Supply from RWS [For Table 7-4], Without Bay Delta Plan

	2025	2030	2035	2040	2045
First year	157.5	157.5	157.5	157.5	157.5
Second year	157.5	157.5	157.5	157.5	157.5
Third year	157.5	157.5	157.5	157.5	157.5
Fourth year	132.5	132.5	132.5	132.5	132.5
Fifth year	132.5	132.5	132.5	132.5	132.5

Table 9: Projected Regional Water System Supply for 5-Year Drought Risk Assessment [For Table 7-5], With Bay Delta Plan. This table assumes Bay Delta Plan comes into effect in 2023.

Year	2021	2022	2023	2024	2025
RWS Supply (mgd)	238.5	212	119.25	119.25	119.25
Wholesale Supply (mgd)	157.5	132.5	74.5	74.5	74.5

Table 10: Projected Regional Water System Supply for 5-Year Drought Risk Assessment [For Table 7-5], Without Bay Delta Plan

Year	2021	2022	2023	2024	2025
RWS Supply (mgd)	238.5	212	212	212	212
Wholesale Supply (mgd)	157.5	132.5	132.5	132.5	132.5

The January 22, 2021, SFPUC Regional Water System (RWS) Supply Reliability Letter (Supply Reliability Letter) provides RWS supplies available to the Wholesale Customers under two scenarios: (1) With Bay-Delta Plan, and (2) Without Bay-Delta Plan. Your agency must choose which scenario to use for your agency's 2020 UWMP submittal tables. However, you may discuss both scenarios in the body of your agency's UWMP. The purpose of this attachment is to provide further detail about your agency's allocation of total RWS supplies available to the Wholesale Customers under both scenarios.

Data Sources for Projected RWS Purchases

Supply allocations are based on projected RWS purchases provided to BAWSCA by the Member Agencies. Following the completion of the Demand Study in June 2020, BAWSCA used the results to develop a table for each Member Agency listing possible supplies and total demand for 2025, 2030, 2035, 2040, and 2045. BAWSCA populated the tables with total demand after passive conservation and entered active conservation, as calculated in the agencies' DSS Model, as a source of supply. Multi-source agencies were asked to complete the table with supply projections, including from the RWS, to meet total demand. Single-source agencies were offered the opportunity to review the tables upon request. Because active conservation was treated as a source of supply, projected RWS purchases are after passive and active conservation.

Water Management Representatives (WMRs) received a draft copy of all projected wholesale RWS purchase requests as part of the January 7, 2021 WMR meeting agenda packet and meeting slides. Agencies were asked to notify BAWSCA if changes were necessary regarding their purchase requests prior to BAWSCA sending those purchase requests to the SFPUC. Purchase requests were transmitted to the SFPUC via a letter dated January 15, 2021 for use in their 2020 UWMP efforts.

Note that the projected RWS purchases used by BAWSCA for fiscal years 2020-21 and for 2021-22 were provided to Christina Tang, BAWSCA's Finance Manager, by each Member Agency in January 2021. This annual reporting is part of the SFPUC's wholesale rate setting process. Member Agencies have provided BAWSCA with these projected purchases annually for the past 10 years.

UWMP Tables 7-1 and 7-5

UWMP Table 7-1 requests supply reliability for a normal year, a single dry year, and multiple (five) dry years. Tables 3, 4, 5, and 6 provided in the Supply Reliability Letter will help your agency complete UWMP Table 7-1. The Drought Risk Assessment (DRA) in UWMP Table 7-5 also requests a five-year drought sequence but specifies years 2021 through 2025. Supply Reliability Letter Tables 9 and 10 will help your agency complete UWMP Table 7-5.

The Supply Reliability Letter provides four scenarios to select from for completing UWMP Table 7-1. The Supply Reliability Letter Tables 3 (with Bay-Delta Plan) and 4 (without Bay-Delta Plan) use 2020 as the base year. Depending on which scenario you choose, these will be the basis for your agency's five-year DRA (UWMP Table 7-5). The Supply Reliability Letter Tables 5 (with Bay-Delta Plan) and 6 (without Bay-Delta Plan) use 2025 as the base year. Depending on which scenario you choose, these will be the basis for UWMP Tables 7-2 through 7-4.

Total RWS supplies available to the Wholesale Customers in the first through fifth consecutive dry years in Supply Reliability Letter Table 3 align with those in Table 9 of the same letter. Similarly, Supply Reliability Letter Table 4 aligns with Table 10 of the same letter.

Table A below provides a summary of the Member Agencies' RWS supply drought cutbacks under each of the four supply availability conditions and is intended to help you complete UWMP Tables 7-1and 7-5.

Table A: Wholesale Customer Drought Cutbacks Based on a Single Dry Year and Multiple Dry Years (Base Year 2020)

	(a)	(b)	(c)	(d)	(e)	(f)	(g)
(1)	Projected SF RWS Wholesale Purchases	132.2 MGD	138.6 MGD	140.8 MGD	142.5 MGD	144.3 MGD	146.0 MGD
(2)	Supply Available to the Wholesale Customers	Percent Cutback on Wholesale RWS Purchases					
		2020	**2021**	**2022**	**2023**	**2024**	**2025**
(3)	157.5 MGD	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(4)	132.5 MGD	0.0%	-4.4%	-5.9%	-7.0%	-8.2%	-9.3%
(5)	82.8 MGD	-37.4%	-40.3%	-41.2%	-41.9%	-42.6%	-43.3%
(6)	74.5 MGD	-43.7%	-46.3%	-47.1%	-47.7%	-48.4%	-49.0%

Table A, column (a), rows 3 through 6 lists total RWS supplies available to the Wholesale Customers as provided in the Supply Reliability Letter tables. Row 1 provides cumulative actual wholesale RWS purchases for 2020 and projected purchases for 2021 through 2025. Projected RWS purchases for years 2021 and 2022 were provided to Christina Tang, BAWSCA's Finance Manager, by the Member Agencies in January. Projected RWS purchases for 2025 were provided to BAWSCA by the Member Agencies as described previously in this memo. Projected wholesale RWS purchases for 2023 and 2024 were derived assuming a linear change between 2022 and 2025.

Table B below provides a summary of the Member Agencies' RWS supply drought cutbacks under each of the four supply availability conditions and is intended to help you complete UWMP Table 7-1.

Table B: Wholesale Customer Drought Cutbacks Based on a Single Dry Year and Multiple Dry Years (Base Year 2025)

	(a)	(b)	(c)	(d)	(e)	(f)	(g)
(1)	Projected SF RWS Wholesale Purchases	146.0 MGD	146.4 MGD	146.8 MGD	147.1 MGD	147.5 MGD	147.9 MGD
(2)	Supply Available to the Wholesale Customers	Percent Cutback on Wholesale RWS Purchases					
		2025	**2026**	**2027**	**2028**	**2029**	**2030**
(3)	157.5 MGD	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(4)	132.5 MGD	-9.2%	-9.5%	-9.7%	-9.9%	-10.2%	-10.4%
(5)	82.8 MGD	-43.3%	-43.4%	-43.6%	-43.7%	-43.9%	-44.0%
(6)	74.5 MGD	-49.0%	-49.1%	-49.3%	-49.4%	-49.5%	-49.6%

Table B, column (a), rows 3 through 6 lists total RWS supplies available to the Wholesale Customers as provided in the Supply Reliability Letter tables. Row 1 provides cumulative projected wholesale RWS purchases for 2025 through 2030. Projected wholesale RWS purchases for years 2025 and 2030 were

provided to BAWSCA by the Member Agencies as described previously in this memo. Projected wholesale RWS purchases for 2026 through 2029 were derived assuming a linear change between 2025 and 2030.

To complete UWMP Tables 7-1 and 7-5, reference tables in the Supply Reliability Letter to identify total RWS supplies available to the Wholesale Customers and apply the percent cutback in the corresponding year of the drought sequence using Tables A and B. For example, in Supply Reliability Letter Table 3, in the 5th consecutive year of a drought, the volume available to the Wholesale Customers is 74.5 MGD. To calculate RWS supplies available to your agency in 2025 using table A, locate the row with 74.5 MGD on the table – row 6 – and the column for 2025 – column (g). Then apply the percent cutback to your agency's RWS demand in 2025.

A list of purchase projections by agency are provided in Tables C, D, E, and F. The table also indicates the percent cutback that should be applied based on total RWS supplies available to the Wholesale Customers. Tables C and E use Scenario 1: With Bay-Delta Plan. Tables D and F use Scenario 2: Without Bay-Delta Plan. Tables C and D use 2020 as the base year and Tables E and F use 2025 as the base year.

BAWSCA understands that agencies are updating projected demands for their 2020 UWMPs and that projected RWS purchases may change from what was previously provided. Additionally, BAWSCA recognizes that not all Member Agencies will choose the same scenario for their UWMP supply reliability tables. For both reasons, projected RWS purchases in each Member Agency's 2020 UWMP may not add up to total Wholesale demands in the SFPUC's 2020 UWMP. This is consistent with direction given by the Department of Water Resources, which encourages suppliers use the UWMP tables to represent what they believe to be the most likely supply reliability scenario and to characterize the five-consecutive year drought in a manner that is best suited for understanding and managing their water service reliability and individual agency level of risk tolerance.

Table C: Scenario 1: <u>With</u> Bay-Delta Plan - Projected Wholesale Customer RWS Demand and Percent Cutback for a Single Dry Year and Multiple Dry Years (Base Year 2020)

	2020 (184 MGD)		**2021** (157.5 MGD)		**2022** (132.5 MGD)		**2023** (74.5 MGD)		**2024** (74.5 MGD)		**2025** (74.5 MGD)	
Agency	Actual Purchases	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback
ACWD	7.87	0.0%	9.44	0.0%	9.46	-5.9%	8.87	-47.7%	8.27	-48.4%	7.68	-49.0%
Brisbane/GVMID	0.64	0.0%	0.62	0.0%	0.65	-5.9%	0.73	-47.7%	0.81	-48.4%	0.89	-49.0%
Burlingame	3.48	0.0%	3.34	0.0%	3.35	-5.9%	3.67	-47.7%	4.00	-48.4%	4.33	-49.0%
Coastside	1.02	0.0%	1.54	0.0%	1.23	-5.9%	1.29	-47.7%	1.34	-48.4%	1.40	-49.0%
CalWater Total	29.00	0.0%	29.66	0.0%	29.81	-5.9%	29.87	-47.7%	29.93	-48.4%	29.99	-49.0%
Daly City	3.97	0.0%	4.00	0.0%	4.01	-5.9%	3.86	-47.7%	3.72	-48.4%	3.57	-49.0%
East Palo Alto	1.57	0.0%	1.63	0.0%	1.69	-5.9%	1.75	-47.7%	1.81	-48.4%	1.88	-49.0%
Estero	4.34	0.0%	4.48	0.0%	4.51	-5.9%	4.36	-47.7%	4.22	-48.4%	4.07	-49.0%
Hayward	13.92	0.0%	14.47	0.0%	15.12	-5.9%	16.03	-47.7%	16.94	-48.4%	17.86	-49.0%
Hillsborough	2.62	0.0%	2.95	0.0%	3.05	-5.9%	3.12	-47.7%	3.19	-48.4%	3.26	-49.0%
Menlo Park	2.96	0.0%	2.92	0.0%	2.93	-5.9%	3.14	-47.7%	3.35	-48.4%	3.55	-49.0%
Mid-Peninsula	2.66	0.0%	2.65	0.0%	2.80	-5.9%	2.82	-47.7%	2.84	-48.4%	2.86	-49.0%
Millbrae	1.90	0.0%	1.95	0.0%	2.15	-5.9%	2.19	-47.7%	2.24	-48.4%	2.29	-49.0%
Milpitas	5.92	0.0%	5.88	0.0%	5.34	-5.9%	5.76	-47.7%	6.17	-48.4%	6.59	-49.0%
Mountain View	7.67	0.0%	7.80	0.0%	8.05	-5.9%	8.23	-47.7%	8.42	-48.4%	8.60	-49.0%
North Coast	2.37	0.0%	2.58	0.0%	2.66	-5.9%	2.56	-47.7%	2.45	-48.4%	2.34	-49.0%
Palo Alto	9.75	0.0%	9.44	0.0%	9.66	-5.9%	9.79	-47.7%	9.93	-48.4%	10.06	-49.0%
Purissima Hills	1.75	0.0%	1.97	0.0%	2.02	-5.9%	2.04	-47.7%	2.06	-48.4%	2.09	-49.0%
Redwood City	8.76	0.0%	8.72	0.0%	9.07	-5.9%	8.86	-47.7%	8.66	-48.4%	8.46	-49.0%
San Bruno	0.95	0.0%	3.39	0.0%	3.40	-5.9%	3.35	-47.7%	3.29	-48.4%	3.24	-49.0%
San José	4.26	0.0%	4.31	0.0%	4.51	-5.9%	4.51	-47.7%	4.50	-48.4%	4.50	-49.0%
Santa Clara	3.27	0.0%	3.29	0.0%	3.50	-5.9%	3.83	-47.7%	4.17	-48.4%	4.50	-49.0%
Stanford	1.43	0.0%	1.40	0.0%	1.54	-5.9%	1.70	-47.7%	1.85	-48.4%	2.01	-49.0%
Sunnyvale	9.33	0.0%	9.35	0.0%	9.45	-5.9%	9.35	-47.7%	9.26	-48.4%	9.16	-49.0%
Westborough	0.82	0.0%	0.84	0.0%	0.81	-5.9%	0.83	-47.7%	0.84	-48.4%	0.86	-49.0%
Wholesale Total	**132.2**	**132.2†**	**138.6**	**138.6†**	**140.8**	**132.5†**	**142.5**	**74.5†**	**144.3**	**74.5†**	**146.0**	**74.5†**

† Total supply available to the Wholesale Customers after drought cutback.

Table D: Scenario 2: Without Bay-Delta Plan - Projected Wholesale Customer RWS Demand and Percent Cutback for a Single Dry Year and Multiple Dry Years (Base Year 2020)

	2020 (184 MGD)		**2021** (157.5 MGD)		**2022** (132.5 MGD)		**2023** (132.5 MGD)		**2024** (132.5 MGD)		**2025** (132.5 MGD)	
Agency	Actual Purchases	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback
ACWD	7.87	0.0%	9.44	0.0%	9.46	-5.9%	8.87	-7.0%	8.27	-8.2%	7.68	-9.2%
Brisbane/GVMID	0.64	0.0%	0.62	0.0%	0.65	-5.9%	0.73	-7.0%	0.81	-8.2%	0.89	-9.2%
Burlingame	3.48	0.0%	3.34	0.0%	3.35	-5.9%	3.67	-7.0%	4.00	-8.2%	4.33	-9.2%
Coastside	1.02	0.0%	1.54	0.0%	1.23	-5.9%	1.29	-7.0%	1.34	-8.2%	1.40	-9.2%
CalWater Total	29.00	0.0%	29.66	0.0%	29.81	-5.9%	29.87	-7.0%	29.93	-8.2%	29.99	-9.2%
Daly City	3.97	0.0%	4.00	0.0%	4.01	-5.9%	3.86	-7.0%	3.72	-8.2%	3.57	-9.2%
East Palo Alto	1.57	0.0%	1.63	0.0%	1.69	-5.9%	1.75	-7.0%	1.81	-8.2%	1.88	-9.2%
Estero	4.34	0.0%	4.48	0.0%	4.51	-5.9%	4.36	-7.0%	4.22	-8.2%	4.07	-9.2%
Hayward	13.92	0.0%	14.47	0.0%	15.12	-5.9%	16.03	-7.0%	16.94	-8.2%	17.86	-9.2%
Hillsborough	2.62	0.0%	2.95	0.0%	3.05	-5.9%	3.12	-7.0%	3.19	-8.2%	3.26	-9.2%
Menlo Park	2.96	0.0%	2.92	0.0%	2.93	-5.9%	3.14	-7.0%	3.35	-8.2%	3.55	-9.2%
Mid-Peninsula	2.66	0.0%	2.65	0.0%	2.80	-5.9%	2.82	-7.0%	2.84	-8.2%	2.86	-9.2%
Millbrae	1.90	0.0%	1.95	0.0%	2.15	-5.9%	2.19	-7.0%	2.24	-8.2%	2.29	-9.2%
Milpitas	5.92	0.0%	5.88	0.0%	5.34	-5.9%	5.76	-7.0%	6.17	-8.2%	6.59	-9.2%
Mountain View	7.67	0.0%	7.80	0.0%	8.05	-5.9%	8.23	-7.0%	8.42	-8.2%	8.60	-9.2%
North Coast	2.37	0.0%	2.58	0.0%	2.66	-5.9%	2.56	-7.0%	2.45	-8.2%	2.34	-9.2%
Palo Alto	9.75	0.0%	9.44	0.0%	9.66	-5.9%	9.79	-7.0%	9.93	-8.2%	10.06	-9.2%
Purissima Hills	1.75	0.0%	1.97	0.0%	2.02	-5.9%	2.04	-7.0%	2.06	-8.2%	2.09	-9.2%
Redwood City	8.76	0.0%	8.72	0.0%	9.07	-5.9%	8.86	-7.0%	8.66	-8.2%	8.46	-9.2%
San Bruno	0.95	0.0%	3.39	0.0%	3.40	-5.9%	3.35	-7.0%	3.29	-8.2%	3.24	-9.2%
San José	4.26	0.0%	4.31	0.0%	4.51	-5.9%	4.51	-7.0%	4.50	-8.2%	4.50	-9.2%
Santa Clara	3.27	0.0%	3.29	0.0%	3.50	-5.9%	3.83	-7.0%	4.17	-8.2%	4.50	-9.2%
Stanford	1.43	0.0%	1.40	0.0%	1.54	-5.9%	1.70	-7.0%	1.85	-8.2%	2.01	-9.2%
Sunnyvale	9.33	0.0%	9.35	0.0%	9.45	-5.9%	9.35	-7.0%	9.26	-8.2%	9.16	-9.2%
Westborough	0.82	0.0%	0.84	0.0%	0.81	-5.9%	0.83	-7.0%	0.84	-8.2%	0.86	-9.2%
Wholesale Total	**132.2**	**132.2†**	**138.6**	**138.6†**	**140.8**	**132.5†**	**142.5**	**132.5†**	**144.3**	**132.5†**	**146.0**	**132.5†**

† Total supply available to the Wholesale Customers after drought cutback.

Table E: Scenario 1: <u>With</u> Bay-Delta Plan - Projected Wholesale Customer RWS Demand and Percent Cutback for a Single Dry Year and Multiple Dry Years (Base Year 2025)

	2025 (184 MGD)		**2026** (82.8 MGD)		**2027** (74.5 MGD)		**2028** (74.5 MGD)		**2029** (74.5 MGD)		**2030** (74.5 MGD)	
Agency	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback
ACWD	7.68	0%	7.68	-43.4%	7.68	-49.3%	7.68	-49.4%	7.68	-49.5%	7.68	-49.6%
Brisbane/GVMID	0.89	0%	0.89	-43.4%	0.89	-49.3%	0.89	-49.4%	0.89	-49.5%	0.89	-49.6%
Burlingame	4.33	0%	4.34	-43.4%	4.35	-49.3%	4.37	-49.4%	4.38	-49.5%	4.40	-49.6%
Coastside	1.40	0%	1.40	-43.4%	1.39	-49.3%	1.39	-49.4%	1.38	-49.5%	1.38	-49.6%
CalWater Total	29.99	0%	29.94	-43.4%	29.89	-49.3%	29.84	-49.4%	29.79	-49.5%	29.74	-49.6%
Daly City	3.57	0%	3.56	-43.4%	3.55	-49.3%	3.54	-49.4%	3.53	-49.5%	3.52	-49.6%
East Palo Alto	1.88	0%	1.89	-43.4%	1.91	-49.3%	1.92	-49.4%	1.93	-49.5%	1.95	-49.6%
Estero	4.07	0%	4.08	-43.4%	4.08	-49.3%	4.09	-49.4%	4.10	-49.5%	4.11	-49.6%
Hayward	17.86	0%	18.02	-43.4%	18.19	-49.3%	18.35	-49.4%	18.52	-49.5%	18.68	-49.6%
Hillsborough	3.26	0%	3.26	-43.4%	3.26	-49.3%	3.26	-49.4%	3.26	-49.5%	3.25	-49.6%
Menlo Park	3.55	0%	3.58	-43.4%	3.60	-49.3%	3.63	-49.4%	3.66	-49.5%	3.68	-49.6%
Mid-Peninsula	2.86	0%	2.85	-43.4%	2.85	-49.3%	2.85	-49.4%	2.84	-49.5%	2.84	-49.6%
Millbrae	2.29	0%	2.33	-43.4%	2.37	-49.3%	2.41	-49.4%	2.46	-49.5%	2.50	-49.6%
Milpitas	6.59	0%	6.62	-43.4%	6.65	-49.3%	6.68	-49.4%	6.72	-49.5%	6.75	-49.6%
Mountain View	8.60	0%	8.66	-43.4%	8.72	-49.3%	8.78	-49.4%	8.84	-49.5%	8.90	-49.6%
North Coast	2.34	0%	2.34	-43.4%	2.33	-49.3%	2.33	-49.4%	2.33	-49.5%	2.33	-49.6%
Palo Alto	10.06	0%	10.08	-43.4%	10.10	-49.3%	10.12	-49.4%	10.13	-49.5%	10.15	-49.6%
Purissima Hills	2.09	0%	2.09	-43.4%	2.09	-49.3%	2.09	-49.4%	2.09	-49.5%	2.09	-49.6%
Redwood City	8.46	0%	8.46	-43.4%	8.47	-49.3%	8.48	-49.4%	8.49	-49.5%	8.49	-49.6%
San Bruno	3.24	0%	3.23	-43.4%	3.23	-49.3%	3.22	-49.4%	3.22	-49.5%	3.22	-49.6%
San José	4.50	0%	4.50	-43.4%	4.50	-49.3%	4.50	-49.4%	4.50	-49.5%	4.50	-49.6%
Santa Clara	4.50	0%	4.50	-43.4%	4.50	-49.3%	4.50	-49.4%	4.50	-49.5%	4.50	-49.6%
Stanford	2.01	0%	2.04	-43.4%	2.08	-49.3%	2.11	-49.4%	2.15	-49.5%	2.18	-49.6%
Sunnyvale	9.16	0%	9.19	-43.4%	9.22	-49.3%	9.24	-49.4%	9.27	-49.5%	9.30	-49.6%
Westborough	0.86	0%	0.86	-43.4%	0.86	-49.3%	0.86	-49.4%	0.85	-49.5%	0.85	-49.6%
Wholesale Total	**146.0**	**146.0†**	**146.4**	**82.8†**	**146.8**	**74.5†**	**147.1**	**74.5†**	**147.5**	**74.5†**	**147.9**	**74.5†**

† Total supply available to the Wholesale Customers after drought cutback.

Table F: Scenario 2: <u>Without</u> Bay-Delta Plan - Projected Wholesale Customer RWS Demand and Percent Cutback for a Single Dry Year and Multiple Dry Years (Base Year 2025)

	2025 (184 MGD)		**2026** (157.5 MGD)		**2027** (157.5 MGD)		**2028** (157.5 MGD)		**2029** (132.5 MGD)		**2030** (132.5 MGD)	
Agency	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback	Projected Demand	Drought Cutback
ACWD	7.68	0.0%	7.68	0.0%	7.68	0.0%	7.68	0.0%	7.68	-10.2%	7.68	-10.4%
Brisbane/GVMID	0.89	0.0%	0.89	0.0%	0.89	0.0%	0.89	0.0%	0.89	-10.2%	0.89	-10.4%
Burlingame	4.33	0.0%	4.34	0.0%	4.35	0.0%	4.37	0.0%	4.38	-10.2%	4.40	-10.4%
Coastside	1.40	0.0%	1.40	0.0%	1.39	0.0%	1.39	0.0%	1.38	-10.2%	1.38	-10.4%
CalWater Total	29.99	0.0%	29.94	0.0%	29.89	0.0%	29.84	0.0%	29.79	-10.2%	29.74	-10.4%
Daly City	3.57	0.0%	3.56	0.0%	3.55	0.0%	3.54	0.0%	3.53	-10.2%	3.52	-10.4%
East Palo Alto	1.88	0.0%	1.89	0.0%	1.91	0.0%	1.92	0.0%	1.93	-10.2%	1.95	-10.4%
Estero	4.07	0.0%	4.08	0.0%	4.08	0.0%	4.09	0.0%	4.10	-10.2%	4.11	-10.4%
Hayward	17.86	0.0%	18.02	0.0%	18.19	0.0%	18.35	0.0%	18.52	-10.2%	18.68	-10.4%
Hillsborough	3.26	0.0%	3.26	0.0%	3.26	0.0%	3.26	0.0%	3.26	-10.2%	3.25	-10.4%
Menlo Park	3.55	0.0%	3.58	0.0%	3.60	0.0%	3.63	0.0%	3.66	-10.2%	3.68	-10.4%
Mid-Peninsula	2.86	0.0%	2.85	0.0%	2.85	0.0%	2.85	0.0%	2.84	-10.2%	2.84	-10.4%
Millbrae	2.29	0.0%	2.33	0.0%	2.37	0.0%	2.41	0.0%	2.46	-10.2%	2.50	-10.4%
Milpitas	6.59	0.0%	6.62	0.0%	6.65	0.0%	6.68	0.0%	6.72	-10.2%	6.75	-10.4%
Mountain View	8.60	0.0%	8.66	0.0%	8.72	0.0%	8.78	0.0%	8.84	-10.2%	8.90	-10.4%
North Coast	2.34	0.0%	2.34	0.0%	2.33	0.0%	2.33	0.0%	2.33	-10.2%	2.33	-10.4%
Palo Alto	10.06	0.0%	10.08	0.0%	10.10	0.0%	10.12	0.0%	10.13	-10.2%	10.15	-10.4%
Purissima Hills	2.09	0.0%	2.09	0.0%	2.09	0.0%	2.09	0.0%	2.09	-10.2%	2.09	-10.4%
Redwood City	8.46	0.0%	8.46	0.0%	8.47	0.0%	8.48	0.0%	8.49	-10.2%	8.49	-10.4%
San Bruno	3.24	0.0%	3.23	0.0%	3.23	0.0%	3.22	0.0%	3.22	-10.2%	3.22	-10.4%
San José	4.50	0.0%	4.50	0.0%	4.50	0.0%	4.50	0.0%	4.50	-10.2%	4.50	-10.4%
Santa Clara	4.50	0.0%	4.50	0.0%	4.50	0.0%	4.50	0.0%	4.50	-10.2%	4.50	-10.4%
Stanford	2.01	0.0%	2.04	0.0%	2.08	0.0%	2.11	0.0%	2.15	-10.2%	2.18	-10.4%
Sunnyvale	9.16	0.0%	9.19	0.0%	9.22	0.0%	9.24	0.0%	9.27	-10.2%	9.30	-10.4%
Westborough	0.86	0.0%	0.86	0.0%	0.86	0.0%	0.86	0.0%	0.85	-10.2%	0.85	-10.4%
Wholesale Total	**146.0**	**146.0†**	**146.4**	**146.4†**	**146.8**	**146.8†**	**147.1**	**147.1†**	**147.5**	**132.5†**	**147.9**	**132.5†**

† Total supply available to the Wholesale Customers after drought cutback.

UWMP Table 7-4

Supply Reliability Letter Tables 7 and 8 will help your agency complete UWMP Table 7-4. Table G below provides a summary of the Member Agencies' RWS supply drought cutbacks under each of the four supply availability conditions and is intended to help you complete UWMP Table 7-4. The table assumes (1) the Tier 2 Plan will be used to allocate supplies available to the Wholesale Customers when average Wholesale Customers' RWS shortages are greater than 10 and up to 20 percent, and (2) an equal percent reduction will be shared across all Wholesale Customers when average Wholesale Customers' RWS shortages are 10 percent or less or greater than 20 percent.

Table G: Drought Cutbacks Based on Projected Demands Under All Water Supply Availability Conditions

	(a)	(b)	(c)	(d)	(e)	(f)
(1)	Projected SF RWS Wholesale Purchases	146.0 MGD	147.9 MGD	151.9 MGD	156.3 MGD	162.8 MGD
(2)	Supply Available to the Wholesale Customers	% Cutback on Wholesale RWS Purchases				
		2025	**2030**	**2035**	**2040**	**2045**
(3)	157.5 MGD	0.0%	0.0%	0.0%	0.0%	-3.2%
(4)	132.5 MGD	-9.3%	-10.4%	Tier 2 Avg. -14%*	Tier 2 Avg. -16%*	Tier 2 Avg. -19%*
(5)	82.8 MGD	-43.3%	-44.0%	-45.5%	-47.0%	-49.1%
(6)	74.5 MGD	-49.0%	-49.6%	-51.0%	-52.3%	-54.2%

* Calculated average. Individual agency cutbacks are calculated in Table H.

Table G, column (a) lists total RWS supplies available to the Wholesale Customers as provided in the Supply Reliability Letter tables. Row 1 provides cumulative projected wholesale RWS purchases for 2025, 2030, 2035, 2040, and 2045.

Tables H, I, J and K provide additional detail by agency for each of the four supply availability conditions listed in Table G. To complete UWMP Table 7-4, reference Table 7 or 8 (depending on which Bay-Delta Plan scenario you choose) in the Supply Reliability Letter to identify total RWS supplies available to the Wholesale Customers and apply the percent cutback in the corresponding year using Table G or input the volumetric drought allocation using Tables H, I, J and K below.

Table H: Drought Allocations when Total Supplies Available to the Wholesale Customers are Equal to 157.5 MGD

Projected SF RWS Wholesale Purchases	146.0 MGD	147.9 MGD	151.9 MGD	156.3 MGD	162.8 MGD
	Drought Allocation (MGD)				
Agency	**2025**	**2030**	**2030**	**2040**	**2045**
ACWD	7.68	7.68	7.68	7.68	8.82
Brisbane/GVMID	0.89	0.89	0.88	0.89	0.87
Burlingame	4.33	4.40	4.47	4.58	4.54
Coastside	1.40	1.38	1.36	1.33	1.28
CalWater Total	29.99	29.74	29.81	30.27	29.71
Daly City	3.57	3.52	3.49	3.46	3.32
East Palo Alto	1.88	1.95	2.10	2.49	2.80
Estero	4.07	4.11	4.18	4.23	4.24
Hayward	17.86	18.68	19.75	20.82	21.43
Hillsborough	3.26	3.25	3.26	3.26	3.15
Menlo Park	3.55	3.68	3.87	4.06	4.15
Mid-Peninsula	2.86	2.84	2.88	2.89	2.83
Millbrae	2.29	2.50	2.45	2.82	3.10
Milpitas	6.59	6.75	7.03	7.27	7.29
Mountain View	8.60	8.90	9.20	9.51	9.61
North Coast	2.34	2.33	2.34	2.34	2.27
Palo Alto	10.06	10.15	10.28	10.51	10.44
Purissima Hills	2.09	2.09	2.12	2.13	2.08
Redwood City	8.46	8.49	8.64	8.74	8.62
San Bruno	3.24	3.22	3.20	3.20	3.11
San José	4.50	4.50	4.50	4.50	4.35
Santa Clara	4.50	4.50	4.50	4.50	4.35
Stanford	2.01	2.18	2.35	2.53	2.61
Sunnyvale	9.16	9.30	10.70	11.44	11.71
Westborough	0.86	0.85	0.85	0.84	0.82
Wholesale Total	**146.0**	**147.9**	**151.9**	**156.3**	**157.5**

Table I: Drought Allocations when Total Supplies Available to the Wholesale Customers are Equal to 132.5 MGD

Projected SF RWS Wholesale Purchases	146.0 MGD	147.9 MGD	151.9 MGD	156.3 MGD	162.8 MGD
	Drought Allocation (MGD)				
Agency	**2025**	**2030**	**2030**	**2040**	**2045**
ACWD	6.97	6.88	6.91	6.91	8.20
Brisbane/GVMID	0.81	0.79	0.73	0.73	0.72
Burlingame	3.93	3.94	3.96	3.89	3.80
Coastside	1.27	1.24	1.22	1.20	1.19
CalWater Total	27.21	26.65	26.46	25.69	24.69
Daly City	3.24	3.15	3.04	3.01	2.98
East Palo Alto	1.70	1.75	1.97	2.30	2.62
Estero	3.69	3.68	3.76	3.87	3.77
Hayward	16.20	16.74	17.32	17.69	18.07
Hillsborough	2.96	2.92	2.90	2.75	2.56
Menlo Park	3.22	3.30	3.37	3.33	3.26
Mid-Peninsula	2.59	2.54	2.59	2.62	2.54
Millbrae	2.07	2.24	2.16	2.32	2.45
Milpitas	5.98	6.05	6.25	6.31	6.35
Mountain View	7.80	7.97	8.28	8.49	8.34
North Coast	2.12	2.09	2.11	2.11	2.11
Palo Alto	9.13	9.09	9.26	9.46	9.71
Purissima Hills	1.89	1.87	1.42	1.38	1.32
Redwood City	7.67	7.61	7.89	7.70	7.49
San Bruno	2.94	2.88	2.56	2.51	2.45
San José	4.08	4.03	3.03	2.91	2.76
Santa Clara	4.08	4.03	3.03	2.91	2.76
Stanford	1.82	1.95	2.06	2.13	2.16
Sunnyvale	8.31	8.33	9.46	9.51	9.43
Westborough	0.78	0.76	0.76	0.76	0.76
Wholesale Total	**132.5**	**132.5**	**132.5**	**132.5**	**132.5**

Table J: Drought Allocations when Total Supplies Available to the Wholesale Customers are Equal to 82.8 MGD

Projected SF RWS Wholesale Purchases	146.0 MGD	147.9 MGD	151.9 MGD	156.3 MGD	162.8 MGD
	Drought Allocation (MGD)				
Agency	**2025**	**2030**	**2030**	**2040**	**2045**
ACWD	4.36	4.30	4.19	4.07	4.64
Brisbane/GVMID	0.51	0.50	0.48	0.47	0.45
Burlingame	2.45	2.46	2.44	2.43	2.39
Coastside	0.79	0.77	0.74	0.71	0.68
CalWater Total	17.00	16.65	16.25	16.03	15.62
Daly City	2.02	1.97	1.90	1.83	1.75
East Palo Alto	1.06	1.09	1.14	1.32	1.47
Estero	2.31	2.30	2.28	2.24	2.23
Hayward	10.13	10.46	10.77	11.03	11.26
Hillsborough	1.85	1.82	1.78	1.73	1.66
Menlo Park	2.01	2.06	2.11	2.15	2.18
Mid-Peninsula	1.62	1.59	1.57	1.53	1.49
Millbrae	1.30	1.40	1.34	1.49	1.63
Milpitas	3.74	3.78	3.83	3.85	3.83
Mountain View	4.88	4.98	5.01	5.04	5.05
North Coast	1.33	1.30	1.28	1.24	1.19
Palo Alto	5.71	5.68	5.61	5.57	5.49
Purissima Hills	1.18	1.17	1.15	1.13	1.10
Redwood City	4.80	4.76	4.71	4.63	4.53
San Bruno	1.83	1.80	1.75	1.70	1.63
San José	2.55	2.52	2.45	2.38	2.29
Santa Clara	2.55	2.52	2.45	2.38	2.29
Stanford	1.14	1.22	1.28	1.34	1.37
Sunnyvale	5.19	5.21	5.83	6.06	6.16
Westborough	0.49	0.48	0.46	0.45	0.43
Wholesale Total	**82.8**	**82.8**	**82.8**	**82.8**	**82.8**

Table K: Drought Allocations when Total Supplies Available to the Wholesale Customers are Equal to 74.5 MGD

Projected SF RWS Wholesale Purchases	146.0 MGD	147.9 MGD	151.9 MGD	156.3 MGD	162.8 MGD
	Drought Allocation (MGD)				
Agency	**2025**	**2030**	**2030**	**2040**	**2045**
ACWD	3.92	3.87	3.77	3.66	4.17
Brisbane/GVMID	0.46	0.45	0.43	0.42	0.41
Burlingame	2.21	2.21	2.19	2.18	2.15
Coastside	0.71	0.70	0.67	0.64	0.61
CalWater Total	15.30	14.98	14.62	14.43	14.05
Daly City	1.82	1.77	1.71	1.65	1.57
East Palo Alto	0.96	0.98	1.03	1.19	1.32
Estero	2.08	2.07	2.05	2.02	2.00
Hayward	9.11	9.41	9.69	9.92	10.14
Hillsborough	1.66	1.64	1.60	1.55	1.49
Menlo Park	1.81	1.86	1.90	1.94	1.96
Mid-Peninsula	1.46	1.43	1.41	1.38	1.34
Millbrae	1.17	1.26	1.20	1.34	1.47
Milpitas	3.36	3.40	3.45	3.47	3.45
Mountain View	4.39	4.48	4.51	4.53	4.54
North Coast	1.19	1.17	1.15	1.12	1.07
Palo Alto	5.14	5.11	5.04	5.01	4.94
Purissima Hills	1.06	1.05	1.04	1.02	0.99
Redwood City	4.31	4.28	4.24	4.17	4.08
San Bruno	1.65	1.62	1.57	1.53	1.47
San José	2.30	2.27	2.21	2.14	2.06
Santa Clara	2.30	2.27	2.21	2.14	2.06
Stanford	1.03	1.10	1.15	1.21	1.24
Sunnyvale	4.67	4.69	5.25	5.45	5.54
Westborough	0.44	0.43	0.41	0.40	0.39
Wholesale Total	**74.5**	**74.5**	**74.5**	**74.5**	**74.5**

Common Language for Wholesale Customers about Rate Impacts of Water Shortages

The SFPUC includes a variable component to water rates for most customer classes. As a result, as sales decrease, revenues are lost on a per unit basis. Because the marginal cost of water production is relatively small, as production is reduced, the cost of service remains the same. For both retail and wholesale customers, a reduction in water purchases – whether voluntary or mandated – would require the SFPUC to raise rates, cut costs, or use existing fund balance reserves to cover its expenses. The financial planning and rate-setting process is complex and iterative. While major impacts of a water shortage on rates are described below, the full process, especially for large water shortages, would incorporate significant stakeholder discussion about tradeoffs and financial impacts.

The SFPUC's current retail water rates have a provision for a "drought surcharge" that automatically increases adopted rates in the event of a declared water shortage. The drought surcharge is calculated so that, accounting for the expected reduction in retail water usage, total revenues are equal to what they would have been without the reduction. The drought surcharge protects the SFPUC's financial stability during water shortages, and provides customers an incentive to meet conservation targets.

For wholesale customers, the rate-setting process is governed by the terms of the WSA, which provides that, in the event of a water shortage emergency, the Commission may adjust wholesale rates in an expedited way concurrently with the imposition of drought surcharges on retail customers. Beyond drought rate setting and emergency rate setting, rates are set annually in coordination with the SFPUC annual budget process and are based on the forecasted wholesale share of regional water system expenditures and total purchases. If wholesale customer usage is expected to decrease – either voluntarily, or due to shortages – this would be incorporated into the wholesale rate forecast, and rates may increase.

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March 30, 2021

Danielle McPherson
Senior Water Resources Specialist
Bay Area Water Supply and Conservation Agency
155 Bovet Road, Suite 650
San Mateo, CA 94402

Dear Ms. McPherson,

Attached please find additional supply reliability modeling results conducted by the SFPUC. The SFPUC has conducted additional supply reliability modeling under the following planning scenarios:

- Projected supply reliability for years 2020 through 2045, assuming that demand is equivalent to the sum of the projected retail demands on the Regional Water System (RWS) and Wholesale Customer purchase request projections provided to SFPUC by BAWSCA on January 21st (see Table 1 below).
- Under the above demand conditions, projected supply reliability for scenarios both with and without implementation of the Bay-Delta Plan Amendment starting in 2023.

The SFPUC will be using this supply modeling in the text of its draft UWMP and moving the original modeling results into an appendix.

Table 1: Retail and Wholesale RWS Demand Assumptions Used for Additional Supply Reliability Modeling (mgd)

	2020	2025	2030	2035	2040	2045
Retail	66.5	67.2	67.5	68.6	70.5	73.7
Wholesale[1, 2]	132.1	146.0	147.9	151.9	156.3	162.8
Total	**198.6**	**213.2**	**215.4**	**220.5**	**226.8**	**236.5**

[1] Wholesale purchase request projections provided to the SFPUC by BAWSCA on January 21st, 2021
[2] Includes demands for Cities of San Jose and Santa Clara

Please note the following about the information presented in the attached tables:

- Assumptions about infrastructure conditions remain the same as what was provided in our January 22nd letter.
- The Tier 1 allocations were applied to the RWS supplies to determine the wholesale supply, as was also described in the January 22nd letter; for any system-wide shortage above 20%, the Tier 1 split for a 20% shortage was applied.
- The SFPUC water supply planning methodology, including simulation of an 8.5-year design drought, is used to develop these estimates of water supply available from the RWS for five dry years. In each demand scenario for 2020 through 2045, the RWS deliveries are estimated using the standard SFPUC procedure, which includes adding increased levels of rationing as needed to balance the demands on the RWS system with available water supply. Some simulations may have increased levels of rationing in the final years of the design drought sequence, which can influence the comparison of results in the first five years of the sequence.
- Tables 7 and 8 in the attached document provide RWS and wholesale supply availability for the five-year drought risk assessment from 2021 to 2025. SFPUC's modeling approach does not allow for varying demands over the course of a dry year sequence. Therefore, the supply projections for 2021 to 2025 are based on meeting 2020 levels of demand. However, in years when the Bay-Delta Plan Amendment is not in effect, sufficient RWS supplies will be available to meet the Wholesale Customers' purchase requests assuming that they are between the 2020 and 2025 projected levels. This is not reflected in Tables 7 and 8 because SFPUC did not want to make assumptions about the growth of purchase requests between 2020 and 2025.

In our draft UWMP, we acknowledge that we have a Level of Service objective of meeting average annual water demand of 265 mgd from the SFPUC watersheds for retail and Wholesale Customers during non-drought years, as well as a contractual obligation to supply 184 mgd to the Wholesale Customers. Therefore, we will still include the results of our modeling based on a demand of 265 mgd in order to facilitate planning that supports meeting this Level of Service objective and our contractual obligations. The results of this modeling will be in an appendix to the draft UWMP. As will be shown in this appendix, in a normal year the SFPUC can provide up to 265 mgd of supply from the RWS. The RWS supply projections shown in the attached tables are more accurately characterized as supplies that will be used to meet projected retail and Wholesale Customer demands.

It is our understanding that you will pass this information on to the Wholesale Customers. If you have any questions or need additional information, please do not hesitate to contact Sarah Triolo, at striolo@sfwater.org or (628) 230 0802.

Sincerely,

Paula Kehoe
Director of Water Resources

Table 2: Projected Total RWS Supply Utilized and Portion of RWS Supply Utilized by Wholesale Customers in Normal Years [For Table 6-9]:

Year	2020	2025	2030	2035	2040	2045
RWS Supply Utilized (mgd)	198.6	213.2	215.4	220.5	226.8	236.5
RWS Supply Utilized by Wholesale Customers[a] (mgd)	132.1	146.0	147.9	151.9	156.3	162.8

[a] RWS supply utilized by Wholesale Customers is equivalent to purchase request projections provided to SFPUC by BAWSCA on January 21, 2021, and includes Cities of San Jose and Santa Clara.

Basis of Water Supply Data: With Bay-Delta Plan Amendment

Table 3a: Basis of Water Supply Data [For Table 7-1], Base Year 2020, With Bay-Delta Plan Amendment

Year Type	Base Year	RWS Volume Available (mgd)	% of Average Supply	Wholesale Volume Available (mgd)	Notes on Calculation of Wholesale Supply
Average year	2020	198.6	100%	132.1	
Single dry year		198.6	100%	132.1	
Consecutive 1st Dry year		198.6	100%	132.1	
Consecutive 2nd Dry year		198.6	100%	132.1	
Consecutive 3rd Dry year[1]		119.2	60%	74.5	• At shortages 20% or greater, wholesale allocation is assumed to be 62.5%
Consecutive 4th Dry year		119.2	60%	74.5	• Same as above
Consecutive 5th Dry year		119.2	60%	74.5	• Same as above

[1] Assuming this year represents 2023, when Bay Delta Plan Amendment would come into effect.

Table 3b: Basis of Water Supply Data [For Table 7-1], Base Year 2025, With Bay-Delta Plan Amendment

Year Type	Base Year	RWS Volume Available (mgd)	% of Average Supply	Wholesale Volume Available (mgd)	Notes on Calculation of Wholesale Supply
Average year	2025	213.2	100%	146.0	
Single dry year		149.2	70%	93.3	• At shortages 20% or greater, wholesale allocation is assumed to be 62.5%
Consecutive 1st Dry year		149.2	70%	93.3	• Same as above
Consecutive 2nd Dry year		127.9	60%	80.0	• Same as above
Consecutive 3rd Dry year		127.9	60%	80.0	• Same as above
Consecutive 4th Dry year		127.9	60%	80.0	• Same as above
Consecutive 5th Dry year		127.9	60%	80.0	• Same as above

Table 3c: Basis of Water Supply Data [For Table 7-1], Base Year 2030, With Bay-Delta Plan Amendment

Year Type	Base Year	RWS Volume Available (mgd)	% of Average Supply	Wholesale Volume Available (mgd)	Notes on Calculation of Wholesale Supply
Average year	2030	215.4	100%	147.9	
Single dry year		150.8	70%	94.2	• At shortages 20% or greater, wholesale allocation is assumed to be 62.5%
Consecutive 1st Dry year		150.8	70%	94.2	• Same as above
Consecutive 2nd Dry year		129.2	60%	80.8	• Same as above
Consecutive 3rd Dry year		129.2	60%	80.8	• Same as above
Consecutive 4th Dry year		129.2	60%	80.8	• Same as above
Consecutive 5th Dry year		129.2	60%	80.8	• Same as above

Table 3d: Basis of Water Supply Data [For Table 7-1], Base Year 2035, With Bay-Delta Plan Amendment

Year Type	Base Year	RWS Volume Available (mgd)	% of Average Supply	Wholesale Volume Available (mgd)	Notes on Calculation of Wholesale Supply
Average year	2035	220.5	100%	151.9	
Single dry year		154.4	70%	96.5	• At shortages 20% or greater, wholesale allocation is assumed to be 62.5%
Consecutive 1st Dry year		154.4	70%	96.5	• Same as above
Consecutive 2nd Dry year		132.3	60%	82.7	• Same as above
Consecutive 3rd Dry year		132.3	60%	82.7	• Same as above
Consecutive 4th Dry year		132.3	60%	82.7	• Same as above
Consecutive 5th Dry year		121.3	55%	75.8	• Same as above

Table 3e: Basis of Water Supply Data [For Table 7-1], Base Year 2040, With Bay-Delta Plan Amendment

Year Type	Base Year	RWS Volume Available (mgd)	% of Average Supply	Wholesale Volume Available (mgd)	Notes on Calculation of Wholesale Supply
Average year	2040	226.8	100%	156.3	
Single dry year		158.8	70%	99.2	• At shortages 20% or greater, wholesale allocation is assumed to be 62.5%
Consecutive 1st Dry year		158.8	70%	99.2	• Same as above
Consecutive 2nd Dry year		136.1	60%	85.1	• Same as above
Consecutive 3rd Dry year		136.1	60%	85.1	• Same as above
Consecutive 4th Dry year		120.2	53%	75.1	• Same as above
Consecutive 5th Dry year		120.2	53%	75.1	• Same as above

Table 3f: Basis of Water Supply Data [For Table 7-1], Base Year 2045, With Bay-Delta Plan Amendment

Year Type	Base Year	RWS Volume Available (mgd)	% of Average Supply	Wholesale Volume Available (mgd)	Notes on Calculation of Wholesale Supply
Average year	2045	236.5	100%	162.8	
Single dry year		141.9	60%	88.7	• At shortages 20% or greater, wholesale allocation is assumed to be 62.5%
Consecutive 1st Dry year		141.9	60%	88.7	• Same as above
Consecutive 2nd Dry year		141.9	60%	88.7	• Same as above
Consecutive 3rd Dry year		141.9	60%	88.7	• Same as above
Consecutive 4th Dry year		120.6	51%	75.4	• Same as above
Consecutive 5th Dry year		120.6	51%	75.4	• Same as above

Table 3g: Projected RWS Supply Availability [Alternative to Table 7-1], Years 2020-2045, With Bay-Delta Plan Amendment

Year	2020	2025	2030	2035	2040	2045
Average year	100%	100%	100%	100%	100%	100%
Single dry year	100%	70%	70%	70%	70%	60%
Consecutive 1st Dry year	100%	70%	70%	70%	70%	60%
Consecutive 2nd Dry year	100%	60%	60%	60%	60%	60%
Consecutive 3rd Dry year[1]	60%	60%	60%	60%	60%	60%
Consecutive 4th Dry year	60%	60%	60%	60%	53%	51%
Consecutive 5th Dry year	60%	60%	60%	55%	53%	51%

[1] Assuming that at base year 2020, this year represents 2023, when Bay Delta Plan Amendment would come into effect.

Basis of Water Supply Data: Without Bay-Delta Plan Amendment

Table 4a: Basis of Water Supply Data [For Table 7-1], Base Year 2020, Without Bay-Delta Plan Amendment

Year Type	Base Year	RWS Volume Available (mgd)	% of Average Supply	Wholesale Volume Available (mgd)	Notes on Calculation of Wholesale Supply
Average year	2020	198.6	100%	132.1	
Single dry year		198.6	100%	132.1	
Consecutive 1st Dry year		198.6	100%	132.1	
Consecutive 2nd Dry year		198.6	100%	132.1	
Consecutive 3rd Dry year		198.6	100%	132.1	
Consecutive 4th Dry year		198.6	100%	132.1	
Consecutive 5th Dry year		198.6	100%	132.1	

Table 4b: Basis of Water Supply Data [For Table 7-1], Base Year 2025, Without Bay-Delta Plan Amendment

Year Type	Base Year	RWS Volume Available (mgd)	% of Average Supply	Wholesale Volume Available (mgd)	Notes on Calculation of Wholesale Supply
Average year	2025	213.2	100%	146.0	
Single dry year		213.2	100%	146.0	
Consecutive 1st Dry year		213.2	100%	146.0	
Consecutive 2nd Dry year		213.2	100%	146.0	
Consecutive 3rd Dry year		213.2	100%	146.0	
Consecutive 4th Dry year		213.2	100%	146.0	
Consecutive 5th Dry year		213.2	100%	146.0	

Table 4c: Basis of Water Supply Data [For Table 7-1], Base Year 2030, Without Bay-Delta Plan Amendment

Year Type	Base Year	RWS Volume Available (mgd)	% of Average Supply	Wholesale Volume Available (mgd)	Notes on Calculation of Wholesale Supply
Average year	2030	215.4	100%	147.9	
Single dry year		215.4	100%	147.9	
Consecutive 1st Dry year		215.4	100%	147.9	
Consecutive 2nd Dry year		215.4	100%	147.9	
Consecutive 3rd Dry year		215.4	100%	147.9	
Consecutive 4th Dry year		215.4	100%	147.9	
Consecutive 5th Dry year		215.4	100%	147.9	

Table 4d: Basis of Water Supply Data [For Table 7-1], Base Year 2035, Without Bay-Delta Plan Amendment

Year Type	Base Year	RWS Volume Available (mgd)	% of Average Supply	Wholesale Volume Available (mgd)	Notes on Calculation of Wholesale Supply
Average year	2035	220.5	100%	151.9	
Single dry year		220.5	100%	151.9	
Consecutive 1st Dry year		220.5	100%	151.9	
Consecutive 2nd Dry year		220.5	100%	151.9	
Consecutive 3rd Dry year		220.5	100%	151.9	
Consecutive 4th Dry year		220.5	100%	151.9	
Consecutive 5th Dry year		220.5	100%	151.9	

Table 4e: Basis of Water Supply Data [For Table 7-1], Base Year 2040, Without Bay-Delta Plan Amendment

Year Type	Base Year	RWS Volume Available (mgd)	% of Average Supply	Wholesale Volume Available (mgd)	Notes on Calculation of Wholesale Supply
Average year	2040	226.8	100%	156.3	
Single dry year		226.8	100%	156.3	
Consecutive 1st Dry year		226.8	100%	156.3	
Consecutive 2nd Dry year		226.8	100%	156.3	
Consecutive 3rd Dry year		226.8	100%	156.3	
Consecutive 4th Dry year		226.8	100%	156.3	
Consecutive 5th Dry year		226.8	100%	156.3	

Table 4f: Basis of Water Supply Data [For Table 7-1], Base Year 2045, Without Bay-Delta Plan Amendment

Year Type	Base Year	RWS Volume Available (mgd)	% of Average Supply	Wholesale Volume Available (mgd)	Notes on Calculation of Wholesale Supply
Average year	2045	236.5	100%	162.8	
Single dry year		236.5	100%	162.8	
Consecutive 1st Dry year		236.5	100%	162.8	
Consecutive 2nd Dry year		236.5	100%	162.8	
Consecutive 3rd Dry year		236.5	100%	162.8	
Consecutive 4th Dry year		212.8	90%	139.1	• At a 10% shortage level, the wholesale allocation is 64% of available supply • The retail allocation is 36% of supply, which resulted in a positive allocation to retail of 2.9 mgd, which was re-allocated to the Wholesale Customers
Consecutive 5th Dry year		212.8	90%	139.1	• Same as above

Table 4g: Projected RWS Supply [Alternative to Table 7-1], Years 2020-2045, Without Bay-Delta Plan Amendment

Year	2020	2025	2030	2035	2040	2045
Average year	100%	100%	100%	100%	100%	100%
Single dry year	100%	100%	100%	100%	100%	100%
Consecutive 1st Dry year	100%	100%	100%	100%	100%	100%
Consecutive 2nd Dry year	100%	100%	100%	100%	100%	100%
Consecutive 3rd Dry year	100%	100%	100%	100%	100%	100%
Consecutive 4th Dry year	100%	100%	100%	100%	100%	90%
Consecutive 5th Dry year	100%	100%	100%	100%	100%	90%

Supply Projections for Consecutive Five Dry Year Sequences

Table 5: Projected Multiple Dry Years Wholesale Supply from RWS [For Table 7-4], With Bay-Delta Plan Amendment

	2025	2030	2035	2040	2045
First year	93.3	94.2	96.5	99.2	88.7
Second year	80.0	80.8	82.7	85.1	88.7
Third year	80.0	80.8	82.7	85.1	88.7
Fourth year	80.0	80.8	82.7	75.1	75.4
Fifth year	80.0	80.8	75.8	75.1	75.4

Table 6: Projected Multiple Dry Years Wholesale Supply from RWS [For Table 7-4], Without Bay-Delta Plan Amendment

	2025	2030	2035	2040	2045
First year	146.0	147.9	151.9	156.3	162.8
Second year	146.0	147.9	151.9	156.3	162.8
Third year	146.0	147.9	151.9	156.3	162.8
Fourth year	146.0	147.9	151.9	156.3	139.1
Fifth year	146.0	147.9	151.9	156.3	139.1

Table 7: Projected Regional Water System Supply for 5-Year Drought Risk Assessment [For Table 7-5], With Bay-Delta Plan Amendment. This table assumes Bay Delta Plan comes into effect in 2023.

Year	2021	2022	2023	2024	2025
RWS Supply (mgd)	198.6	198.6	119.2	119.2	119.2
Wholesale Supply (mgd)	132.1	132.1	74.5	74.5	74.5

Table 8: Projected Regional Water System Supply for 5-Year Drought Risk Assessment [For Table 7-5], Without Bay Delta Plan

Year	2021	2022	2023	2024	2025
RWS Supply (mgd)	198.6	198.6	198.6	198.6	198.6
Wholesale Supply (mgd)	132.1	132.1	132.1	132.1	132.1

Appendix B: Figure LUE-1, Existing Land Use and Figure LUE-3, Future Land Use, in the Daly City 2030 General Plan

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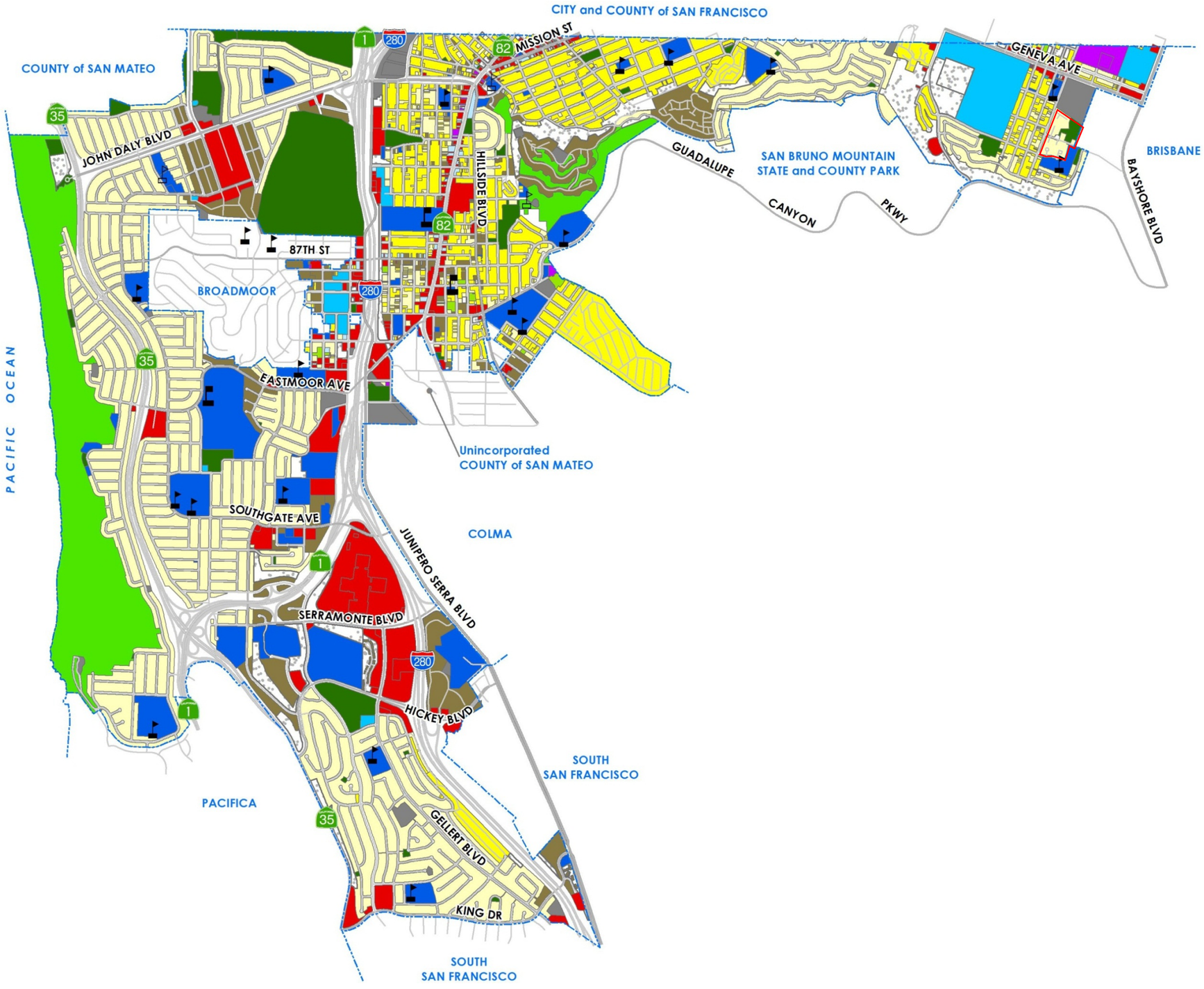
Figure LUE-1

EXISTING LAND USE



- Residential Low Density
- Residential Medium Density
- Residential High Density
- Agriculture
- Industrial
- Commercial
- Public
- Institutional
- Public Utilities
- Recreation
- Open Space
- Mixed Use
- Neighborhood
- Other

CITY OF DALY CITY

LAND USE ELEMENT

NORTH

0 0.5 1 1.5 miles

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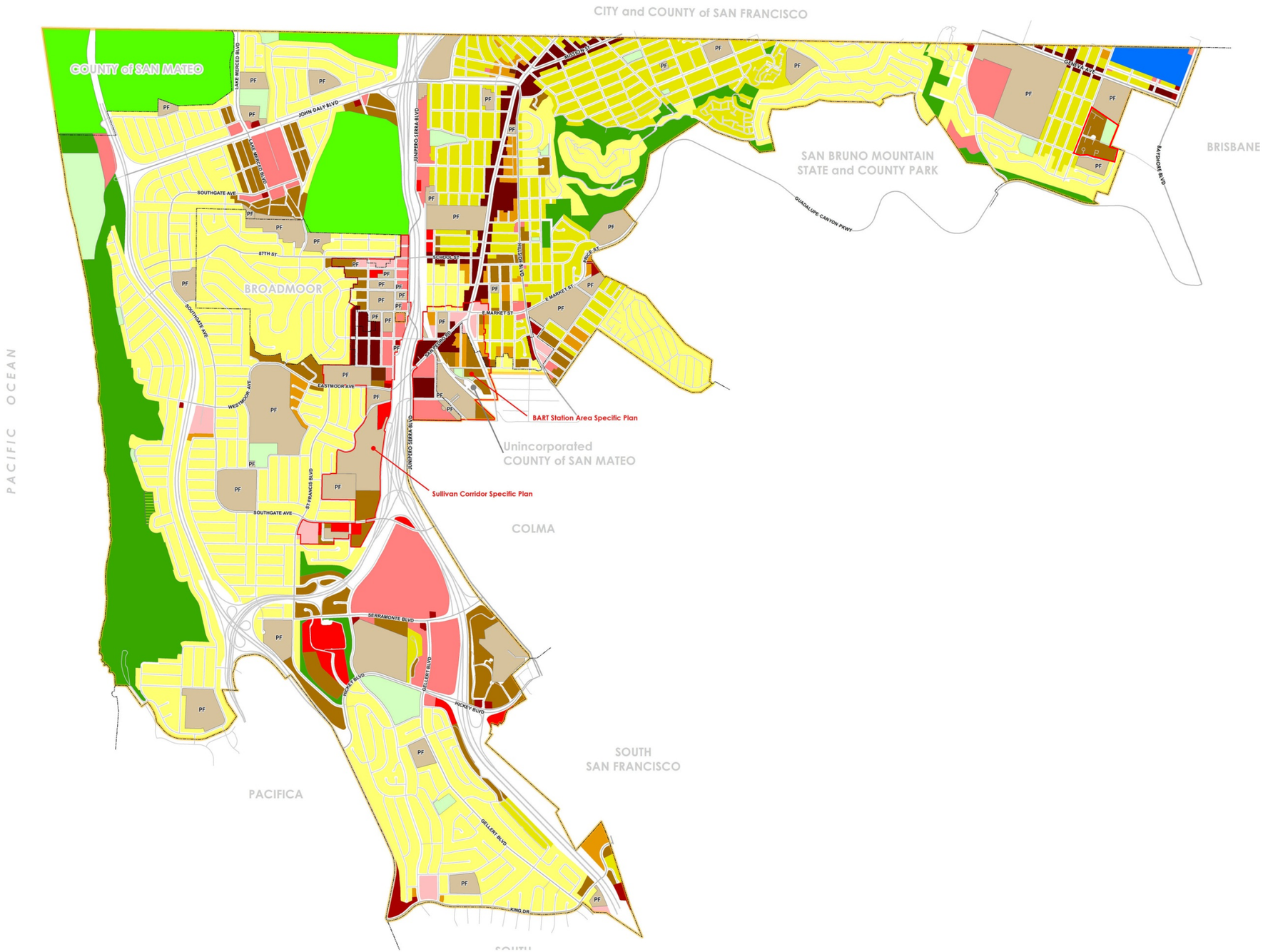
Figure LUE-3
FUTURE LAND USE



Residential

- Residential Open Space (R-OS)
- Low Density (R-LD)
- Medium-Low Density (R-MLD)
- Medium Density (R-MD)
- High Density (R-HD)
- Very High Density (R-VHD)

Recreation and Open Space

- Public Park (PP)
- Private Recreation (PR)
- Open Space Preservation (OSP)

Commercial

- Neighborhood (C-N)
- Retail and Office (C-RO)
- Office (C-O)
- Service (C-S)
- Mixed Use (C-MU)

- Industrial (I)

Public & Institutional Facilities

- B — BART (BART)
- CEM — Cemeteries (CEM)
- PF — Public Facilities (PF)
- H — Hospitals (H)

- Sphere of Influence

CITY OF DALY CITY
LAND USE ELEMENT

- Residential Low Density
- Residential Medium Density
- Residential High Density
- Agriculture
- Industrial
- Commercial
- Public
- Institutional
- Public Utilities
- Recreation
- Open Space
- Mixed Use
- Neighborhood
- Other

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Appendix C: JUHSD Phasing Plan

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MEMORANDUM

Date: April 21, 2021 **BKF Job Number:** 20190078

To: To whom it may concern, City of Daly City

Cc: Alan Katz, Brookwood Group

From: Tim Heffernan

Subject: Jefferson Union High School District – Master Plan
Water System Modeling Request

Jefferson Union High School District is planning a Master Plan for the expansion of the Workforce Housing District located at 699 Serramonte Boulevard in the City of Daly City. The project improvements include new high density residential buildings, a mixed-use building, pedestrian pathways, landscaping, surface parking, and utilities. The project will include the removal of an existing school building, modular buildings, and its corresponding existing parking lot and roadways.

Existing Water System

The existing City water system in the vicinity of the project consists of a 6 inch AC water main in Serramonte Boulevard and a 10 inch water main in Entry Drive constructed with the previous project. Figure 1 shows the existing water system within the development area (refer to Attachment 1 for city maps). The existing domestic water system for the school campus is fed by a 3" service near the main entrance off Serramonte Blvd while the existing fire service for the campus is served from an 8" line from Callan Blvd. The existing Jefferson Union High School District Workforce Housing project is fed from the existing 10 inch main.

Proposed Water System

The onsite water system consists of both public and private water facilities. As part of the approval process the city has been engaged to perform additional studies including a Water Supply Assessment and a System Capacity Study to assess the City's ability to serve the project. Public water mains will be constructed in the private streets and will connect to existing infrastructure recently constructed with the Workforce Housing project, intercept the existing system at Campus Drive, and serve the proposed development.

To accommodate the proposed development the 10" water main constructed with the Workforce Housing project will be relocated to West Drive and provide the same loop between Campus Drive and Serramonte Boulevard. The relocated main will connect to the existing mains in Campus Drive and North Drive and serve Parcel F. The 10" water main in East Drive will connect to the existing mains in Campus Drive and North Drive and Serve Parcels C1, C2 and D.

The Public water mains will be located in a Public Utility Easement to be dedicated to the city. Private onsite water facilities will be owned and maintained by the owner. The public and private water systems will consist of pipes, valves, hydrants, meters, and backflows.

Phasing

The Plan Area is to be built-out in phases over a period anticipated to be eight to twelve years but may be up to 15 years. Each phase of development includes the infrastructure necessary to support development, open space and public improvements associated with specific parcels as follows:

- **Phase I** is the development of Parcel B housing, retail, overlook park, portions of North Drive, north side of North Access Way and associated utility improvements.
- **Phase II** is the development of Parcel C affordable housing, Headstart, East Drive, south side of North Access Way, South Access Way and Parcel D housing, and associated utility improvements.
- **Phase III** is the development of Parcel E housing and Central Park together, Parcel F housing, West Drive, the remaining portion of North Drive, and associated utility improvements. Parcel E or Parcel F may develop independently and in any order.

It is anticipated the below grade utilities will be constructed with the associated surface improvements for any given phase. Surface improvements will be constructed to the build-out condition where possible but at a minimum will accommodate a road network to provide pedestrian, bicycle, vehicular, and emergency vehicle access for each parcel. In addition, utility infrastructure, including but not limited to, water, sewer, storm drainage, stormwater treatment will be installed to support the current phase or future phases of development.

The number of phases, number of units, and timeline for the project build-out will ultimately depend on market conditions. The rate of the build-out of housing will fluctuate with the regional economy, capital expectations and availability, costs for development and the conditions of the Daly City housing market.

Water Generation Calculations

We understand the City establishes water demand numbers for different types of building uses. We have provided a summary of the existing and proposed building type, areas, and number of units. Table 1 identifies the existing demands. Table 2 identifies the proposed building type and areas. Table 3 identifies the area of existing irrigated landscape area to be removed and the area of proposed irrigated landscape area to be constructed with the new project. This information will be used by the City to determine the water demand for the proposed project. The flows generated by the proposed project and the reduction in flows from the existing building and landscaping being removed will be used in the City's model to determine if the City's water system has enough capacity to serve the project.

Table 1 - Existing Demands

Building	Type	Area	Levels
(Description)		(sf)	(ea)
School Site	School	154,046	1
Modular 1	School	7,283	1
Modular 2	School	1,448	1
Modular 3	School	1,451	1
Modular 4	School	4,588	1
Total		**168,816**	

Table 2A – Proposed Demands Low Rise Option

	Building	Type	Approximate Area with Standard Parking	Approximate Area-assuming 50% of the Area is Puzzle Lifts	Unit Count	Levels (Assumes Puzzle Lifts for 1/2 of the parking area)	Construction Type
	(Description)		(sf)	(sf)	(ea)	(ea)	(Type)
Phase 1	Parcel B	Apartment	Not Applicable	231,150	201	5	III-A
		Retail/Restaurant (located at grade in parking structure)		24,427	-	0	I-A
		Parking (including 40 spaces for Retail)(Standard)		54,338	345	2	
		Parking (including 40 spaces for Retail)(Puzzle Lift)		54,338			I-A
	Sub-Total Parcel B			**364,252**		**7**	
Phase 2	Parcels C1/C2	Apartment	115,000	115,000	100	5	III-A
		HeadStart (located either in podium or stand-alone)	1,400	1,400	-	0	I-A / III-A*
		Parking (Standard)	45,000	17,500	100	2	
		Parking (Puzzle Lift)		17,500			I-A
	Sub-Total Parcel C		**161,400**	**151,400**		**7**	
	Parcel D	Apartment	276,000	276,000	240	5	III-A
		Parking (Standard)	149,400	56,700	360	2	
		Parking (Puzzle Lift)		56,700			I-A
	Sub-Total Parcel D		**425,400**	**389,400**		**7**	
Phase 3	Parcel E	Apartment	276,000	276,000	240	5	III-A
		Parking (Standard)	149,400	56,700	360	2	
		Parking (Puzzle Lift)		56,700			I-A
	Sub-Total Parcel E		**425,400**	**389,400**		**7**	
	Parcel F	Apartment	381,800	381,800	332	5	III-A
		Parking (Standard)	206,670	78,435	498	2	
		Parking (Puzzle Lift)		78,435			I-A
	Sub-Total Parcel F		**588,470**	**538,670**		**7**	
	Total Residential		**1,279,950**	**1,279,950**	**1,113**		
	Total Other (Retail/General Office/Preschool)		**25,827**	**25,827**			
	Total Parking		**659,145**	**527,345**	**1,663**		
	Total		**1,964,922**	**1,833,122**			

Table 2B – Proposed Demands High Rise Option

	Building	Type	Approximate Area with Standard Parking	Approximate Area--assuming 50% of the Area is Puzzle Lifts	Unit Count	Levels (Assumes Puzzle Lifts for 1/2 of the parking area)	Construction Type
	(Description)		(sf)	(sf)	(ea)	(ea)	(Type)
Phase 1	Parcel B	Apartment	Refer to Low Rise Option				
		Retail/Restaurant (located at grade in parking structure)					
		Parking (including 40 spaces for Retail)(Standard)					
		Parking (including 40 spaces for Retail)(Puzzle Lift)					
	Sub-Total Parcel B						
Phase 2	Parcels C1/C2	Apartment	Refer to Low Rise Option				
		HeadStart (located either in podium or stand-alone)					
		Parking (Standard)					
		Parking (Puzzle Lift)					
	Sub-Total Parcel C						
	Parcel D	Apartment	309,350	309,350	269	11	I-A
		Parking (Standard)	167,453	63,551	404	3	
		Parking (Puzzle Lift)		63,551			I-A
	Sub-Total Parcel D		**476,803**	**436,453**		**14**	
Phase 3	Parcel E	Apartment	379,500	379,500	330	11	I-A
		Parking (Standard)	205,425	77,963	495	3	
		Parking (Puzzle Lift)		77,963			I-A
	Sub-Total Parcel E		**379,500**	**457,463**		**14**	
	Parcel F	Apartment	391,000	391,000	340	11	I-A
		Parking (Standard)	211,650	80,325	510	3	
		Parking (Puzzle Lift)		80,325			I-A
	Sub-Total Parcel F		**602,650**	**551,650**		**14**	
	Total Residential		**1,426,000**	**1,426,000**	**1,240**		
	Total Other (Retail/General Office/Preschool)		**25,827**	**25,827**			
	Total Parking		**738,203**	**587,353**	**1,854**		
	Total		**2,190,030**	**2,039,180**			

Table 3: Irrigated Landscape Areas

Existing (sf)	Proposed (sf)
221,560	176,900

SERRAMONTE BLVD

CONNECT TO EXIST 6" W

(E) 6" PUBLIC W

CALLAN BLVD

ENTRY DRIVE

(E) APARTMENTS

(E) PARKING

(E) PARKING

(E) PARKING

(E) 10" W (PUBLIC)

(E) MODULAR 1

(E) COMCAST BLDG

(E) MODULAR 2

(E) MODULAR 3

(E) MODULAR 4

(E) 10" W (PUBLIC)

EXIST 12" W (PUBLIC)

EXIST SCHOOL BUILDING

(E) 10" W (PUBLIC)

EXIST 10" W (PUBLIC)

CAMPUS DR

W

WF

ABBREVIATIONS

(E) EXISTING

(P) PROPOSED

W WATER

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PLOT TIME: 04-19-21 3:10pm PLOTTED BY: burn

JUHSD PRECISE PLAN

Daly City, California

BkF ENGINEERS / SURVEYORS / PLANNERS

255 SHORELINE DRIVE
SUITE 200
REDWOOD CITY, CA 94065

GRAPHIC SCALE

50 0 50 100

EXISTING WATER EXHIBIT

Drawn By	TEAM	Date	04.21.2021
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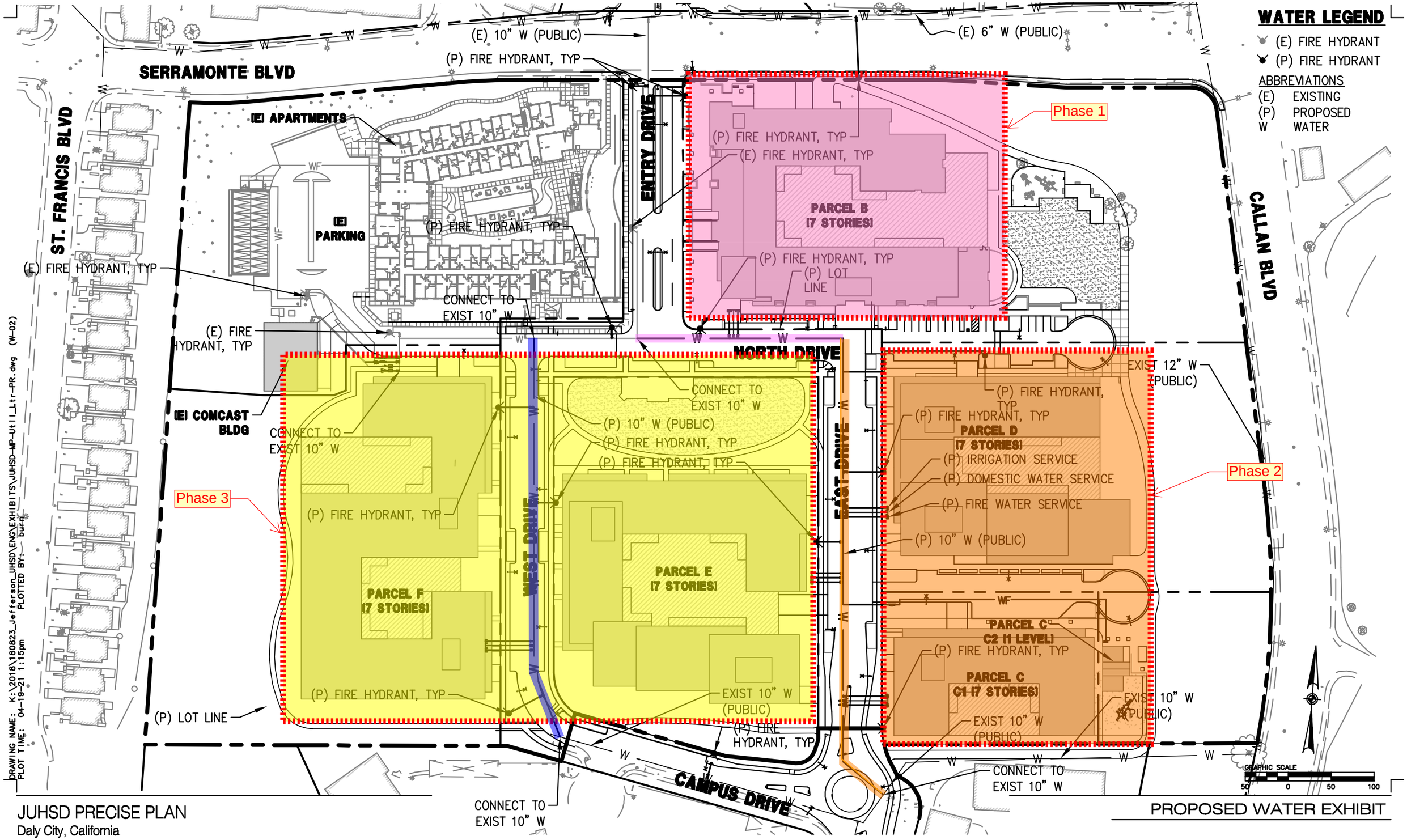
Job No.	20180823		



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PLOT TIME: 04-19-21 1:15pm PLOTTED BY: burg

JUHSD PRECISE PLAN
Daly City, California

BkF
ENGINEERS / SURVEYORS / PLANNERS
255 SHORELINE DRIVE
SUITE 200
REDWOOD CITY, CA 94065

PROPOSED WATER EXHIBIT

Drawn By	TEAM	Date	04.21.2021
Scale	1"=100'	Sheet No.	FIG-2
Job No.	20180823		

Appendix D: South Westside Basin GWMP

The *South Westside Basin GWMP (*WRIME, 2012) provides a framework for the sustainable use of the South Westside Basin. The report is also available online at: http://sfwater.org/

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Memorandum of Agreement – September 2017
South Westside Basin Groundwater Sustainability Plan

Parties

This Memorandum of Agreement ("MOA") dated November 8, 2017 is entered into among the Cities of San Bruno and Daly City and the California Water Service Company ("Cal Water"); collectively referred to as the "Parties." Together, the Parties intend to develop a Groundwater Sustainability Plan ("GSP") over a portion of the Westside Basin pursuant to the Sustainable Groundwater Management Act ("Act" or "SGMA").

Recitals

WHEREAS, on September 16, 2014 Governor Jerry Brown signed into law Senate Bills 1168 and 1319 and Assembly Bill 1739, known collectively as the Sustainable Groundwater Management Act; and

WHEREAS, the Act went into effect on January 1, 2015; and

WHEREAS, the legislative intent of the Act is to provide sustainable management of groundwater basins, to enhance local management of groundwater, to establish minimum standards for sustainable groundwater management, and to provide local groundwater agencies with the authority and the technical and financial assistance necessary to sustainably manage groundwater; and

WHEREAS, the Parties are public agencies and a regulated private utility overlying or purveying water to portions of South Westside Basin, the San Mateo County portion of the Westside Basin, a basin defined by California Department of Water Resources' ("DWR") Bulletin 118 and designated as a very low priority basin by DWR; and

WHEREAS, pursuant to the Act, at Water Code Section 10723.6(b), a water corporation regulated by the Public Utilities Commission or a mutual water company may participate in a Groundwater Sustainability Agency ("GSA") through a memorandum of agreement or other legal agreement.

WHEREAS, the Parties are seeking to voluntarily prepare a GSP for coordinated groundwater management and compliance in their designated service area in the Westside Basin; and

WHEREAS, the San Francisco Public Utilities Commission ("SFPUC") has developed a draft GSP for the portion of the Westside Basin within the City and County of San Francisco, assisting in SGMA compliance for that portion of the Westside Basin; and

WHEREAS, the Parties are proactively developing and implementing a single GSP to sustainably manage the portion of the Westside Basin within northern San Mateo County pursuant to section 10727 et seq. of the Act even though the Westside Basin is currently designated as very low priority;

WHEREAS, the City of Daly City received a Local Groundwater Assistance Fund Grant in the amount of $249,998 from DWR pursuant to AB303 Local Groundwater Assistance Grant Agreement No. 4600001810 to fund preparation of the Westside Basin Groundwater Flow Model, version 1.0 and install

three (3) seawater sentinel monitoring wells with DWR acknowledgement of project completion on 05/14/2003; and

WHEREAS, the City of San Bruno received a Local Groundwater Assistance Fund Grant in the amount of $249,870 from DWR pursuant to AB303 Local Groundwater Assistance Grant Agreement No. 4600004141 to fund the installation of groundwater monitoring wells in the South Westside Basin with DWR acknowledgement of project completion on 05/17/2007; and

WHEREAS, the City of San Bruno received a Local Groundwater Assistance Fund Grant in the amount of $209,908 from DWR pursuant to AB303 Local Groundwater Assistance Grant Agreement No. 4600008200 to fund preparation of a groundwater management plan for the South Westside Basin adopted by the City Council of the City of San Bruno by Resolution No. 2012-44 on July 10, 2012 and adopted by the City Council of the Daly City by Resolution No. 12-117 on August 13, 2012; and

WHEREAS, the City of San Bruno received a Local Groundwater Assistance Fund Grant in the amount of $224,694 from DWR pursuant to AB303 Local Groundwater Assistance Grant Agreement No. 4600010353 to fund a shallow groundwater study for the South Westside Basin with DWR acknowledgement of grant obligations being fulfilled on 03/16/17; and

WHEREAS, in furtherance of improved management of the Westside Basin, the Parties, along with the SFPUC, entered into an "Agreement for Groundwater Storage and Recovery from the Southern Portion of the Westside Basin," dated December 16, 2014; and

WHEREAS, in furtherance of improved understanding of the Westside Basin, the Parties, along with the SFPUC , cooperated with the development and distribution of Version 4.1 of the Westside Basin Groundwater Model, dated March 2017; and

WHEREAS, the Parties recognize they will ultimately need to coordinate their respective efforts with the SFPUC to combine their respective GSP's into a single GSP for the Westside Basin;

NOW, THEREFORE, in consideration of the mutual obligations set forth herein, the Parties hereby agree as follows:

Section 1: Purpose and Authorities

This MOA is entered into by the Parties for the purpose of preparing a single GSP for the South Westside Basin and subsequent framework to develop and implement a single GSA to sustainably manage the Westside Basin that complies with the requirements set forth in the Act.

Section 2: Definitions

When used in this MOA, the following terms, whether used in the singular or plural, when used with initial capitalization shall have the meanings set forth below:

1. **Act or SGMA:** refers to the Sustainable Groundwater Management Act, California Water Code section 10720 et seq.

2. **Core Team:** refers to the working group for water purveyors that currently utilize groundwater as a municipal potable water supply in the South Westside Basin, which is created in Section 3 of this MOA.
4. **Groundwater Sustainability Agency ("GSA"):** refers to the Agency, defined by the Act, responsible for implementing the Act's provisions.
5. **Groundwater Sustainability Plan ("GSP"):** refers to the basin plan for the South Westside Basin the Parties to this MOA are seeking to develop and implement pursuant to the Act.
6. **Memorandum of Agreement ("MOA"):** refers to this agreement.
7. **South Westside Basin**: refers to the portion of the groundwater basin within northern San Mateo County the Parties overlie, identified in DWR's Bulletin 118, as part of Groundwater Basin Number 2-35, Westside Groundwater Basin as shown in Attachment 1.

Section 3: Agreement

I. Establishment of the South Westside Basin GSP Core Team.

A. Establishment of the GSP Core Team.

1. The Parties hereby establish the GSP Core Team.
2. The Core Team will consist of one representative from each Party to this MOA that currently uses groundwater in the South Westside Basin as a drinking water supply for retail uses within the South Westside Basin: the City of Daly City, the City of San Bruno, and Cal Water.
3. Each Core Team member's compensation for their service on the Core Team is the responsibility of the appointing Party.
4. Each Core Team member serves at the pleasure of their appointing Party and may be removed by their appointing Party at any time. A Party must notify all other Parties to this MOA in writing within thirty (30) calendar days after that Party elects to replace its Core Team member.
5. The Core Team will meet periodically as needed to carry out the activities described below, and as more fully described in Subpart B, below. The Core Team will prepare and maintain minutes of its meetings.
6. The Core Team shall:
    a. Develop and implement, a stakeholder participation plan that involves the public and area stakeholders in developing and implementing the GSP.
    b. Develop a process to direct and coordinate GSP activities, which may include the development, planning, financing, environmental review, permitting, implementation, and long-term monitoring of the GSP.

B. Core Team Meetings.

1. The Core Team will establish a meeting schedule for regular meetings to discuss the GSP development and implementation activities, assignments, and ongoing work progress.
2. The Core Team may establish and schedule meetings of subcommittees as it sees fit to coordinate development and implementation of the GSP.
3. Attendance at all Core Team meetings may be augmented to include staff or consultants to ensure that the appropriate expertise is available.
4. The Core Team will meet at least bi-annually, or more frequently as needed, to provide status updates and discuss matters covered in this MOA.

C. Establishment of other Advisory Committees.

1. The Parties may establish Advisory Committees as appropriate to obtain technical input to GSP activities from relevant land use authorities and other interested parties within the South Westside Basin. A Stakeholder Coordinating Committee that includes the Parties and additional stakeholders in

the South Westside Basin may be established by a separate agreement and incorporated by reference to this MOA.

II. Roles and Responsibilities of the Parties.

A. The Parties will work jointly to meet the objectives of this MOA.

B. The Parties will appoint representatives to the Core Team as each Party deems appropriate.

C. The Parties are each responsible for implementing the GSP in their respective service areas to the fullest extent allowed by law.

D. The Parties will coordinate all activities related to fulfillment of the objectives of this MOA. The Parties shall cooperate with one another and work as efficiently as possible in the pursuit of all activities and decisions described in this MOA and those that are not particularly described but which are related to or arise out of the activities that are best decided by unanimous approval by the Core Team.

E. Coordinated by the Core Team, the Parties will participate in public outreach and stakeholder engagement in the development and implementation of the GSP.

F. As requested by the Core Team, each of the Parties will provide expertise, guidance, and information on those matters for which it has specific expertise or authority, as needed to carry out the objectives of this MOA.

G. After execution of this MOA, the Core Team shall develop a scope of work ("scope") that describes the anticipated tasks to be performed under this MOA and a schedule for performing said tasks. The scope and schedule shall become part of this MOA through reference. The scope will be referred and amended as necessary to conform to developing information, permitting, and other requirements. Therefore, this scope may be revised from time to time upon unanimous agreement of the Core Team without constituting an amendment to this MOA.

H. The Parties will provide support to the Core Team by contributing staff time, information, and facilities within available resources.

III. MOA Funding.

Upon approval by all of the Core Team members, the Core Team members may elect to mutually develop an amended budget and cost sharing agreement for any additional work to be undertaken by this MOA. The terms and conditions applicable to the budget and cost sharing agreement shall be set forth in an amendment to this MOA. Both the budget and cost sharing agreement shall be unanimously approved by the Parties prior to any financial expenditures or incurrence of any financial obligations or liabilities by the Core Team.

IV. Interagency Communication and Providing Proper Notice.

A. *Interagency Communication.* To provide for consistent and effective communication between Parties, each Party agrees to designate their Core Team representative as their central point of contact on matters relating to this MOA. Additional representatives may be appointed to serve as points of contact on specific actions or issues.

B. *Notices.* All notices and other communications required under this MOA shall be in writing, and shall be deemed to have been duly given upon the date of service, if (a) served personally on the Party to whom notice is being given; (b) sent by electronic mail, and the Party to whom notice is to be given confirms receipt; or (c) on the third day after mailing, if mailed to the Party to whom notice is to be given by first-class mail, postage pre-paid, and properly addressed to the designative representatives as follows:

To Cal Water: California Water Service Company
341 North Delaware Street
San Mateo, CA 94401-1727
Attn: District Manager
Phone: (650) 558-7800

To San Bruno: City of San Bruno
Public Works Department – Engineering Division
567 El Camino Real
San Bruno, CA 94066
Attn: Public Works Director/City Engineer
Phone: (650) 616-7065

To Daly City: City of Daly City
Department of Water and Wastewater Resources
153 Lake Merced Boulevard
Daly City, CA 94015
Attn: Director of Water and Wastewater Resources
Phone: (650) 991-8200

V. Termination and Withdrawal.

A. *Terminating the Agreement.* This MOA may be terminated upon unanimous written consent of all the Parties.

B. *Withdrawal.* A Party may unilaterally withdraw from this MOA without causing or requiring termination of the MOA, effective upon thirty (30) days written notice to the remaining Parties' designated addresses as listed in section IV (B), Notices, above. A withdrawing Party shall be responsible for its share of financial obligations incurred under this MOA and the adopted budget prior to the effective date of withdrawal, unless otherwise approved in writing by the Parties following the receipt of all required approvals.

VI. Amending this MOA.

A. This MOA may be amended only by a subsequent writing, approved and signed by all Parties. Approval from a Party is valid only after that Party's Governing Body or similar or equivalent forum approves the amendment. Core Team Members, and individual Signatory Committee members do not have the authority, express or implied, to amend, modify, waive or in any way alter this MOA of the terms and conditions hereof.

VII. Indemnification.

No Party, nor any officer or employee of a Party, shall be responsible for any damage or liability occurring by reason of anything done or omitted to be done by another Party under or in connection with this MOA. The Parties further agree, that each Party shall fully defend, indemnify and hold harmless each other Party and its agents, officers, employees and contractors from and against all claims, damages, losses, judgments, liabilities, expenses, and other costs, including litigation costs and attorney fees, arising out of, resulting from, or in connection with any work delegated to or action taken or omitted to be taken by such Party under this MOA. The duty to indemnify shall not extend to any claim, suit, or action arising from the active negligence or willful misconduct of the Party seeking the indemnification or its officers, agents, or employees.

VIII. Miscellaneous.

A. *Execution in Counterparts.* The Parties intend to execute this MOA in counterparts. It is the intent of the Parties to hold one (1) counterpart with single original signatures to evidence the MOA and to thereafter forward three other original counterparts on a rotating basis for all signatures. Thereafter, each Party shall be delivered an originally executed counterpart with all Party signatures.

B. *Choice of Law.* This MOA is made in the State of California, under the Constitution and laws of such State and is to be so construed.

C. *Severability.* If any provision of this MOA is determined to be invalid or unenforceable, the remaining provisions will remain in force and unaffected to the fullest extent permitted by law and regulation.

D. *Construction and Interpretation.* This MOA is entered into freely and voluntarily. This MOA has been arrived at through negotiation, and each Party has had a full and fair opportunity to revise the terms of this MOA. Consequently, the normal rule of construction that any ambiguities are to be resolved against the drafting party will not apply in construing or interpreting this MOA.

E. *Complete Agreement.* This MOA constitutes the sole, final, complete, exclusive, and integrated expression and statement of the terms of this MOA among the Parties concerning the subject matter, and supersedes all prior negotiations, representations or agreement, either oral or written, that may be related to the subject matter of this MOA.

F. *Allocation of Liabilities*. The Parties expressly agree that the debts, liabilities, and obligations of each Party shall remain the debts, liabilities, and obligations of each Party and shall not be the debts, liabilities, and obligations of the other parties.

G. *Signatories' Authority*. The signatories to this MOA represents that they have authority to execute this MOA and to bind the Party on whose behalf they execute this MOA.

H. *Reasonable Cooperation*. The Parties will reasonably cooperate with each other, including the execution of all necessary documents required to perform the obligations under this MOA, and to carry out the purpose and intent of this MOA.

I. *Modification.* This MOA may be supplemented, amended, or modified only by a writing signed by all of the Parties.

J. *Waiver.* No covenant, term, or condition, or the breach thereof, shall be deemed waived, except by written consent of the Party against whom the waiver is claimed, and any waiver of the breach of any covenant, term, or condition shall not be deemed to be a waiver of any preceding or succeeding breach of the same or any other covenant, term, or condition.

DATED:

CAL WATER:

CALIFORNIA WATER SERVICES COMPANY,
a California corporation

By: _____
Name: _____
Robert J. Kuta
Title: _____
Vice President, Engineering

SAN BRUNO:

CITY OF SAN BRUNO,
a Municipal Corporation

By: _____
Name: Constance C. Jackson

Title: City Manager

APPROVED AS TO FORM:

_____
CITY ATTORNEY

Attest:

_____
City Clerk

DALY CITY

CITY OF DALY
a Municipal Corporation

By: _____
Name: Patricia E. Martel

Title: City Manager

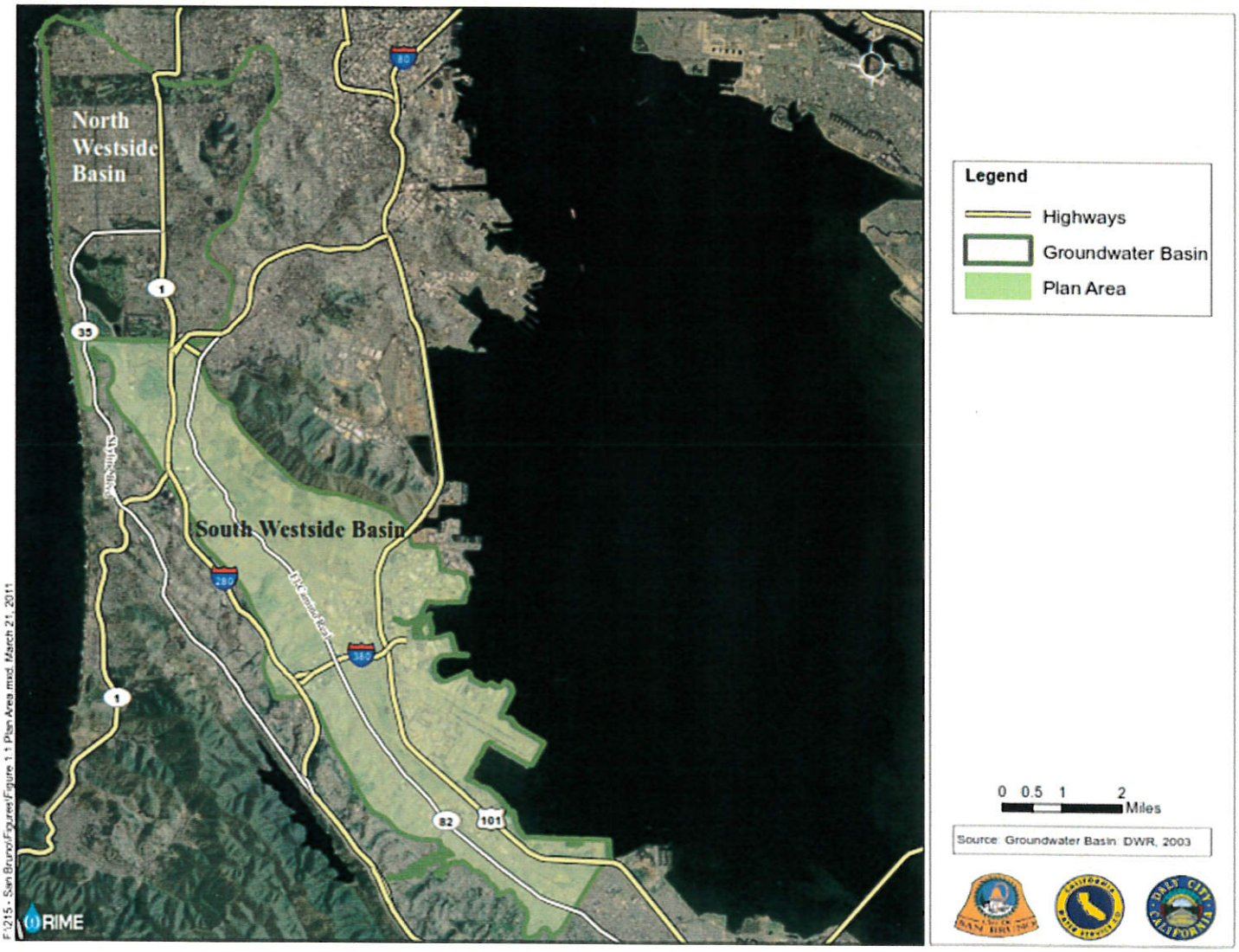
CITY OF SAN BRUNO
INCORPORATED
DEC. 23RD
1914
SAN MATEO CO CAL

Approved as to Form:

_____
City Attorney

Attachment 1

Map of South Westside Basin: refers to the portion of the groundwater basin within northern San Mateo County identified in DWR's Bulletin 118, as part of Groundwater Basin Number 2-35, Westside Groundwater Basin.



Appendix E: BAWSCA Tier 2 Drought Implementation Plan

The latest Tier 2 allocations (including Daly City allocations) under normal, dry, and multi-dry year for with Bay-Delta Plan implementation scenario and without. April 1st, 2021.

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Section 1: Basis for Calculations. Projected Wholesale RWS Purchases Through 2045

Table A: Wholesale RWS Actual Purchases in 2020 and Projected Purchases for 2025, 2030, 2035, 2040, and 2045 (mgd)[a]

Agency	2020 Actual	Projected Wholesale RWS Purchases 2025	2030	2035	2040	2045
ACWD	7.87	7.68	7.68	7.68	7.68	9.11
Brisbane/GVMID	0.64	0.89	0.89	0.88	0.89	0.89
Burlingame	3.48	4.33	4.40	4.47	4.58	4.69
Coastside	1.02	1.40	1.38	1.36	1.33	1.33
CalWater Total	29.00	29.99	29.74	29.81	30.27	30.70
Daly City	3.97	3.57	3.52	3.49	3.46	3.43
East Palo Alto	1.57	1.88	1.95	2.10	2.49	2.89
Estero	4.34	4.07	4.11	4.18	4.23	4.38
Hayward	13.92	17.86	18.68	19.75	20.82	22.14
Hillsborough	2.62	3.26	3.25	3.26	3.26	3.26
Menlo Park	2.96	3.55	3.68	3.87	4.06	4.29
Mid-Peninsula	2.66	2.86	2.84	2.88	2.89	2.93
Millbrae	1.90	2.29	2.50	2.45	2.82	3.20
Milpitas	5.92	6.59	6.75	7.03	7.27	7.53
Mountain View	7.67	8.60	8.90	9.20	9.51	9.93
North Coast	2.37	2.34	2.33	2.34	2.34	2.34
Palo Alto	9.75	10.06	10.15	10.28	10.51	10.79
Purissima Hills	1.75	2.09	2.09	2.12	2.13	2.15
Redwood City	8.76	8.46	8.49	8.64	8.74	8.90
San Bruno	0.95	3.24	3.22	3.20	3.20	3.21
San Jose	4.26	4.50	4.50	4.50	4.50	4.50
Santa Clara	3.27	4.50	4.50	4.50	4.50	4.50
Stanford	1.43	2.01	2.18	2.35	2.53	2.70
Sunnyvale	9.33	9.16	9.30	10.70	11.44	12.10
Westborough	0.82	0.86	0.85	0.85	0.84	0.84
Total	**132.22**	**146.01**	**147.87**	**151.90**	**156.31**	**162.76**

[a] Wholesale RWS purchase projections for 2025, 2030, 2035, 2040, and 2045 were provided to BAWSCA between July 2020 and January 2021 by the Member Agencies following the completion of the June 2020 Demand Study.

Table B: Basis for the 5-Year Drought Risk Assessment Wholesale RWS Actual Purchases in 2020 and 2021-2025 Projected Purchases (mgd)

Agency	2020 Actual	Projected and Estimated Wholesale RWS Purchases 2021[b]	2022[b]	2023[c]	2024[c]	2025[c]
ACWD	7.87	9.44	9.46	9.46	9.46	9.46
Brisbane/GVMID	0.64	0.62	0.65	0.65	0.65	0.65
Burlingame	3.48	3.34	3.35	3.35	3.35	3.35
Coastside	1.02	1.54	1.23	1.23	1.23	1.23
CalWater Total	29.00	29.66	29.81	29.81	29.81	29.81
Daly City	3.97	4.00	4.01	4.01	4.01	4.01
East Palo Alto	1.57	1.63	1.69	1.69	1.69	1.69
Estero	4.34	4.48	4.51	4.51	4.51	4.51
Hayward	13.92	14.47	15.12	15.12	15.12	15.12
Hillsborough	2.62	2.95	3.05	3.05	3.05	3.05
Menlo Park	2.96	2.92	2.93	2.93	2.93	2.93
Mid-Peninsula	2.66	2.65	2.80	2.80	2.80	2.80
Millbrae	1.90	1.95	2.15	2.15	2.15	2.15
Milpitas	5.92	5.88	5.34	5.34	5.34	5.34
Mountain View	7.67	7.80	8.05	8.05	8.05	8.05
North Coast	2.37	2.58	2.66	2.66	2.66	2.66
Palo Alto	9.75	9.44	9.66	9.66	9.66	9.66
Purissima Hills	1.75	1.97	2.02	2.02	2.02	2.02
Redwood City	8.76	8.72	9.07	9.07	9.07	9.07
San Bruno	0.95	3.39	3.40	3.40	3.40	3.40
San Jose	4.26	4.31	4.51	4.51	4.51	4.51
Santa Clara	3.27	3.29	3.50	3.50	3.50	3.50
Stanford	1.43	1.40	1.54	1.54	1.54	1.54
Sunnyvale	9.33	9.35	9.45	9.45	9.45	9.45
Westborough	0.82	0.84	0.81	0.81	0.81	0.81
Total	**132.22**	**138.61**	**140.77**	**140.77**	**140.77**	**140.77**

[b] Wholesale RWS purchase projections for 2021 and 2022 were provided to Christina Tang, BAWSCA's Finance Manager, by the Member Agencies in January 2021.

[c] The SFPUC's supply reliability tables assume the Bay-Delta Plan takes effect in 2023. In the event of a shortage, the Tier 2 Plan specifies that each agencies' Allocation Factor would be calculated once at the onset of a shortage based on the previous year's use and remains the same until the shortage condition is over. Therefore, for the purpose of drought allocations for the 5-year Drought Risk Assessment, wholesale RWS demand is assumed to remain static from 2022 through the drought sequence.

Section 2: Drought Allocations *With* Bay-Delta Plan

Table C: RWS Supply Available to the Wholesale Customers (Combined Tables 3a-3f from the SFPUC's March 30th letter) *With* Bay-Delta Plan (mgd)

	2020[e]	2025	2030	2035	2040	2045
Projected Purchases[d]	132.2	146.0	147.9	151.9	156.3	162.8
Consecutive 1st Dry Year	138.6	93.3	94.2	96.5	99.2	88.7
Consecutive 2nd Dry Year	140.8	80.0	80.8	82.7	85.1	88.7
Consecutive 3rd Dry Year	74.5	80.0	80.8	82.7	85.1	88.7
Consecutive 4th Dry Year	74.5	80.0	80.8	82.7	75.1	75.4
Consecutive 5th Dry Year	74.5	80.0	80.8	75.8	75.1	75.4

[d] Values for 2020 are actual purchases. This row aligns with what is labeled as an "Average Year" in Tables 3a-3f in the SFPUC's March 30th letter. However, these values do not represent an average year and instead are actual purchases for 2020 or projected purchases for 2025 through 2045.

[e] In years when the Bay-Delta Plan is not in effect, sufficient RWS supplies will be available to meet the Wholesale Customers' purchase requests assuming that they are between the 2020 and 2025 projected levels. As such, RWS supply available to the Wholesale Customers in the 1st and 2nd consecutive dry years under base year 2020 is equal to the cumulative projected wholesale RWS purchases for 2021 and 2022, respectively.

Table D: Wholesale RWS Demand (Combined Totals from Tables A and B) (mgd)[f]

	2020	2025	2030	2035	2040	2045
Projected Purchases[d]	132.2	146.0	147.9	151.9	156.3	162.8
Consecutive 1st Dry Year	138.6	146.0	147.9	151.9	156.3	162.8
Consecutive 2nd Dry Year	140.8	146.0	147.9	151.9	156.3	162.8
Consecutive 3rd Dry Year	140.8	146.0	147.9	151.9	156.3	162.8
Consecutive 4th Dry Year	140.8	146.0	147.9	151.9	156.3	162.8
Consecutive 5th Dry Year	140.8	146.0	147.9	151.9	156.3	162.8

[f] The SFPUC's modeling approach does not allow for varying demands over the course of a dry year sequence. Additionally, the Tier 2 Plan calculates each agencies' Allocation Factor once at the onset of a drought and it remains the same until the shortage condition is over. When system-wide shortages are projected, wholesale RWS demand is assumed to be static for the remainder of the drought sequence.

Table E: Percent Cutback to the Wholesale Customers *With* Bay-Delta Plan[g]

	2020	2025	2030	2035	2040	2045
Projected Purchases[d]	0%	0%	0%	0%	0%	0%
Consecutive 1st Dry Year	0%	36%	36%	36%	37%	46%
Consecutive 2nd Dry Year	0%	45%	45%	46%	46%	46%
Consecutive 3rd Dry Year	47%	45%	45%	46%	46%	46%
Consecutive 4th Dry Year	47%	45%	45%	46%	52%	54%
Consecutive 5th Dry Year	47%	45%	45%	50%	52%	54%

[g] Agencies that wish to use new or different projected RWS purchases may use the percent cutbacks listed in this table to determine their drought allocation.

Table F1: Basis of Water Supply Data [For Tables 7-1 and 7-5], Base Year 2020, *With* Bay-Delta Plan (mgd)

Year Consecutive Dry Year	2020 Actual	2021 1st	2022 2nd	2023 3rd	2024 4th	2025 5th
Wholesale RWS Demand	132.2	138.6	140.8	140.8	140.8	140.8
Wholesale RWS Supply Available	132.2	138.6	140.8	74.5	74.5	74.5
Percent Cutback	0%	0%	0%	47%	47%	47%

Table F2: Individual Agency Drought Allocations [For Tables 7-1 and 7-5], Base Year 2020, *With* Bay-Delta Plan (mgd)

	2020	Wholesale RWS Drought Allocations				
Agency	Actual	2021	2022	2023	2024	2025
ACWD	7.87	9.44	9.46	5.01	5.01	5.01
Brisbane/GVMID	0.64	0.62	0.65	0.34	0.34	0.34
Burlingame	3.48	3.34	3.35	1.77	1.77	1.77
Coastside	1.02	1.54	1.23	0.65	0.65	0.65
CalWater Total	29.00	29.66	29.81	15.78	15.78	15.78
Daly City	3.97	4.00	4.01	2.12	2.12	2.12
East Palo Alto	1.57	1.63	1.69	0.89	0.89	0.89
Estero	4.34	4.48	4.51	2.39	2.39	2.39
Hayward	13.92	14.47	15.12	8.00	8.00	8.00
Hillsborough	2.62	2.95	3.05	1.61	1.61	1.61
Menlo Park	2.96	2.92	2.93	1.55	1.55	1.55
Mid-Peninsula	2.66	2.65	2.80	1.48	1.48	1.48
Millbrae	1.90	1.95	2.15	1.14	1.14	1.14
Milpitas	5.92	5.88	5.34	2.83	2.83	2.83
Mountain View	7.67	7.80	8.05	4.26	4.26	4.26
North Coast	2.37	2.58	2.66	1.41	1.41	1.41
Palo Alto	9.75	9.44	9.66	5.11	5.11	5.11
Purissima Hills	1.75	1.97	2.02	1.07	1.07	1.07
Redwood City	8.76	8.72	9.07	4.80	4.80	4.80
San Bruno	0.95	3.39	3.40	1.80	1.80	1.80
San Jose	4.26	4.31	4.51	2.39	2.39	2.39
Santa Clara	3.27	3.29	3.50	1.85	1.85	1.85
Stanford	1.43	1.40	1.54	0.82	0.82	0.82
Sunnyvale	9.33	9.35	9.45	5.00	5.00	5.00
Westborough	0.82	0.84	0.81	0.43	0.43	0.43
Total	**132.2**	**138.6**	**140.8**	**74.5**	**74.5**	**74.5**

Table G1: Basis of Water Supply Data [For Tables 7-1 and 7-4], Base Year 2025, *With* Bay-Delta Plan (mgd)

Consecutive Dry Year	1st	2nd	3rd	4th	5th
Wholesale RWS Demand	146.0	146.0	146.0	146.0	146.0
Wholesale RWS Supply Available	93.3	80.0	80.0	80.0	80.0
Percent Cutback	36%	45%	45%	45%	45%

Table G2: Individual Agency Drought Allocations [For Tables 7-1 and 7-4], Base Year 2025, *With* Bay-Delta Plan (mgd)

	Wholesale RWS Drought Allocations				
Consecutive Dry Year	1st	2nd	3rd	4th	5th
ACWD	4.91	4.21	4.21	4.21	4.21
Brisbane/GVMID	0.57	0.49	0.49	0.49	0.49
Burlingame	2.76	2.37	2.37	2.37	2.37
Coastside	0.89	0.77	0.77	0.77	0.77
CalWater Total	19.16	16.43	16.43	16.43	16.43
Daly City	2.28	1.96	1.96	1.96	1.96
East Palo Alto	1.20	1.03	1.03	1.03	1.03
Estero	2.60	2.23	2.23	2.23	2.23
Hayward	11.41	9.78	9.78	9.78	9.78
Hillsborough	2.08	1.79	1.79	1.79	1.79
Menlo Park	2.27	1.95	1.95	1.95	1.95
Mid-Peninsula	1.83	1.57	1.57	1.57	1.57
Millbrae	1.46	1.25	1.25	1.25	1.25
Milpitas	4.21	3.61	3.61	3.61	3.61
Mountain View	5.49	4.71	4.71	4.71	4.71
North Coast	1.49	1.28	1.28	1.28	1.28
Palo Alto	6.43	5.51	5.51	5.51	5.51
Purissima Hills	1.33	1.14	1.14	1.14	1.14
Redwood City	5.40	4.63	4.63	4.63	4.63
San Bruno	2.07	1.77	1.77	1.77	1.77
San Jose	2.88	2.47	2.47	2.47	2.47
Santa Clara	2.88	2.47	2.47	2.47	2.47
Stanford	1.28	1.10	1.10	1.10	1.10
Sunnyvale	5.85	5.02	5.02	5.02	5.02
Westborough	0.55	0.47	0.47	0.47	0.47
Total	**93.3**	**80.0**	**80.0**	**80.0**	**80.0**

Table H1: Basis of Water Supply Data [For Tables 7-1 and 7-4], Base Year 2030, *With* Bay-Delta Plan (mgd)

Consecutive Dry Year	1st	2nd	3rd	4th	5th
Wholesale RWS Demand	147.9	147.9	147.9	147.9	147.9
Wholesale RWS Supply Available	94.2	80.8	80.8	80.8	80.8
Percent Cutback	36%	45%	45%	45%	45%

Table H2: Individual Agency Drought Allocations [For Tables 7-1 and 7-4], Base Year 2030, *With* Bay-Delta Plan (mgd)

	Wholesale RWS Drought Allocations				
Consecutive Dry Year	1st	2nd	3rd	4th	5th
ACWD	4.89	4.20	4.20	4.20	4.20
Brisbane/GVMID	0.56	0.48	0.48	0.48	0.48
Burlingame	2.80	2.40	2.40	2.40	2.40
Coastside	0.88	0.75	0.75	0.75	0.75
CalWater Total	18.94	16.25	16.25	16.25	16.25
Daly City	2.24	1.92	1.92	1.92	1.92
East Palo Alto	1.24	1.07	1.07	1.07	1.07
Estero	2.62	2.24	2.24	2.24	2.24
Hayward	11.90	10.21	10.21	10.21	10.21
Hillsborough	2.07	1.78	1.78	1.78	1.78
Menlo Park	2.35	2.01	2.01	2.01	2.01
Mid-Peninsula	1.81	1.55	1.55	1.55	1.55
Millbrae	1.59	1.37	1.37	1.37	1.37
Milpitas	4.30	3.69	3.69	3.69	3.69
Mountain View	5.67	4.86	4.86	4.86	4.86
North Coast	1.48	1.27	1.27	1.27	1.27
Palo Alto	6.47	5.55	5.55	5.55	5.55
Purissima Hills	1.33	1.14	1.14	1.14	1.14
Redwood City	5.41	4.64	4.64	4.64	4.64
San Bruno	2.05	1.76	1.76	1.76	1.76
San Jose	2.87	2.46	2.46	2.46	2.46
Santa Clara	2.87	2.46	2.46	2.46	2.46
Stanford	1.39	1.19	1.19	1.19	1.19
Sunnyvale	5.92	5.08	5.08	5.08	5.08
Westborough	0.54	0.47	0.47	0.47	0.47
Total	**94.2**	**80.8**	**80.8**	**80.8**	**80.8**

Table I1: Basis of Water Supply Data [For Tables 7-1 and 7-4], Base Year 2035, *With* Bay-Delta Plan (mgd)

Consecutive Dry Year	1st	2nd	3rd	4th	5th
Wholesale RWS Demand	151.9	151.9	151.9	151.9	151.9
Wholesale RWS Supply Available	96.5	82.7	82.7	82.7	75.8
Percent Cutback	36%	46%	46%	46%	50%

Table I2: Individual Agency Drought Allocations [For Tables 7-1 and 7-4], Base Year 2035, *With* Bay-Delta Plan (mgd)

	Wholesale RWS Drought Allocations				
Consecutive Dry Year	1st	2nd	3rd	4th	5th
ACWD	4.88	4.18	4.18	4.18	3.83
Brisbane/GVMID	0.56	0.48	0.48	0.48	0.44
Burlingame	2.84	2.44	2.44	2.44	2.23
Coastside	0.86	0.74	0.74	0.74	0.68
CalWater Total	18.94	16.23	16.23	16.23	14.88
Daly City	2.22	1.90	1.90	1.90	1.74
East Palo Alto	1.33	1.14	1.14	1.14	1.05
Estero	2.66	2.28	2.28	2.28	2.09
Hayward	12.55	10.75	10.75	10.75	9.86
Hillsborough	2.07	1.78	1.78	1.78	1.63
Menlo Park	2.46	2.10	2.10	2.10	1.93
Mid-Peninsula	1.83	1.57	1.57	1.57	1.44
Millbrae	1.56	1.34	1.34	1.34	1.22
Milpitas	4.47	3.83	3.83	3.83	3.51
Mountain View	5.84	5.01	5.01	5.01	4.59
North Coast	1.49	1.27	1.27	1.27	1.17
Palo Alto	6.53	5.60	5.60	5.60	5.13
Purissima Hills	1.34	1.15	1.15	1.15	1.06
Redwood City	5.49	4.70	4.70	4.70	4.31
San Bruno	2.03	1.74	1.74	1.74	1.60
San Jose	2.86	2.45	2.45	2.45	2.25
Santa Clara	2.86	2.45	2.45	2.45	2.25
Stanford	1.49	1.28	1.28	1.28	1.17
Sunnyvale	6.80	5.83	5.83	5.83	5.34
Westborough	0.54	0.46	0.46	0.46	0.42
Total	**96.5**	**82.7**	**82.7**	**82.7**	**75.8**

Table J1: Basis of Water Supply Data [For Table 7-1 and 7-4], Base Year 2040, *With* Bay-Delta Plan (mgd)

Consecutive Dry Year	1st	2nd	3rd	4th	5th
Wholesale RWS Demand	156.3	156.3	156.3	156.3	156.3
Wholesale RWS Supply Available	99.2	85.1	85.1	75.1	75.1
Percent Cutback	37%	46%	46%	52%	52%

Table J2: Individual Agency Drought Allocations [For Tables 7-1 and 7-4], Base Year 2040, *With* Bay-Delta Plan (mgd)

	Wholesale RWS Drought Allocations				
Consecutive Dry Year	1st	2nd	3rd	4th	5th
ACWD	4.87	4.18	4.18	3.69	3.69
Brisbane/GVMID	0.56	0.48	0.48	0.43	0.43
Burlingame	2.91	2.49	2.49	2.20	2.20
Coastside	0.85	0.73	0.73	0.64	0.64
CalWater Total	19.21	16.48	16.48	14.54	14.54
Daly City	2.20	1.88	1.88	1.66	1.66
East Palo Alto	1.58	1.36	1.36	1.20	1.20
Estero	2.69	2.30	2.30	2.03	2.03
Hayward	13.21	11.34	11.34	10.00	10.00
Hillsborough	2.07	1.78	1.78	1.57	1.57
Menlo Park	2.58	2.21	2.21	1.95	1.95
Mid-Peninsula	1.84	1.58	1.58	1.39	1.39
Millbrae	1.79	1.53	1.53	1.35	1.35
Milpitas	4.62	3.96	3.96	3.49	3.49
Mountain View	6.03	5.18	5.18	4.57	4.57
North Coast	1.49	1.27	1.27	1.12	1.12
Palo Alto	6.67	5.72	5.72	5.05	5.05
Purissima Hills	1.35	1.16	1.16	1.03	1.03
Redwood City	5.55	4.76	4.76	4.20	4.20
San Bruno	2.03	1.74	1.74	1.54	1.54
San Jose	2.86	2.45	2.45	2.16	2.16
Santa Clara	2.86	2.45	2.45	2.16	2.16
Stanford	1.61	1.38	1.38	1.22	1.22
Sunnyvale	7.26	6.23	6.23	5.49	5.49
Westborough	0.54	0.46	0.46	0.41	0.41
Total	**99.2**	**85.1**	**85.1**	**75.1**	**75.1**

Table K1: Basis of Water Supply Data [For Tables 7-1 and 7-4], Base Year 2045, *With* Bay-Delta Plan (mgd)

Consecutive Dry Year	1st	2nd	3rd	4th	5th
Wholesale RWS Demand	162.8	162.8	162.8	162.8	162.8
Wholesale RWS Supply Available	88.7	88.7	88.7	75.4	75.4
Percent Cutback	46%	46%	46%	54%	54%

Table K2: Individual Agency Drought Allocations [For Tables 7-1 and 7-4], Base Year 2045, *With* Bay-Delta Plan (mgd)

	Wholesale RWS Drought Allocations				
Consecutive Dry Year	1st	2nd	3rd	4th	5th
ACWD	4.97	4.97	4.97	4.22	4.22
Brisbane/GVMID	0.49	0.49	0.49	0.41	0.41
Burlingame	2.56	2.56	2.56	2.17	2.17
Coastside	0.72	0.72	0.72	0.61	0.61
CalWater Total	16.73	16.73	16.73	14.22	14.22
Daly City	1.87	1.87	1.87	1.59	1.59
East Palo Alto	1.58	1.58	1.58	1.34	1.34
Estero	2.39	2.39	2.39	2.03	2.03
Hayward	12.07	12.07	12.07	10.26	10.26
Hillsborough	1.78	1.78	1.78	1.51	1.51
Menlo Park	2.34	2.34	2.34	1.99	1.99
Mid-Peninsula	1.59	1.59	1.59	1.36	1.36
Millbrae	1.74	1.74	1.74	1.48	1.48
Milpitas	4.11	4.11	4.11	3.49	3.49
Mountain View	5.41	5.41	5.41	4.60	4.60
North Coast	1.28	1.28	1.28	1.09	1.09
Palo Alto	5.88	5.88	5.88	5.00	5.00
Purissima Hills	1.17	1.17	1.17	1.00	1.00
Redwood City	4.85	4.85	4.85	4.12	4.12
San Bruno	1.75	1.75	1.75	1.49	1.49
San Jose	2.45	2.45	2.45	2.08	2.08
Santa Clara	2.45	2.45	2.45	2.08	2.08
Stanford	1.47	1.47	1.47	1.25	1.25
Sunnyvale	6.59	6.59	6.59	5.61	5.61
Westborough	0.46	0.46	0.46	0.39	0.39
Total	**88.7**	**88.7**	**88.7**	**75.4**	**75.4**

Section 3: Drought Allocations *Without* Bay-Delta Plan

Table L: RWS Supply Available to the Wholesale Customers (Combined Tables 4a-4f from the SFPUC's March 30th letter) *Without* Bay-Delta Plan (mgd)[h]

	2020	2025	2030	2035	2040	2045
Projected Purchases[i]	132.2	146.0	147.9	151.9	156.3	162.8
Consecutive 1st Dry Year	132.2	146.0	147.9	151.9	156.3	162.8
Consecutive 2nd Dry Year	132.2	146.0	147.9	151.9	156.3	162.8
Consecutive 3rd Dry Year	132.2	146.0	147.9	151.9	156.3	162.8
Consecutive 4th Dry Year	132.2	146.0	147.9	151.9	156.3	139.1
Consecutive 5th Dry Year	132.2	146.0	147.9	151.9	156.3	139.1

[h] The SFPUC's modeling approach does not allow for varying demands over the course of a dry year sequence. However, the SFPUC has indicated that sufficient supplies are available to meet wholesale RWS demand so long as they reasonably stay within 2020 and 2040 levels. The SFPUC's modeling does not indicate cutbacks will be required till the 4th and 5th consecutive dry year at 2045 levels.

[i] Values for 2020 are actual purchases. This row aligns with what is labeled as an "Average Year" in Tables 4a-4f in the SFPUC's March 30th letter. However, these values do not represent an average year and instead are actual purchases for 2020 or projected purchases for 2025 through 2045.

Table M: Wholesale RWS Demand (Combined Totals from Tables A and B) (mgd)

	2020	2025	2030	2035	2040	2045
Projected Purchases[i]	132.2	146.0	147.9	151.9	156.3	162.8
Consecutive 1st Dry Year	132.2	146.0	147.9	151.9	156.3	162.8
Consecutive 2nd Dry Year	132.2	146.0	147.9	151.9	156.3	162.8
Consecutive 3rd Dry Year	132.2	146.0	147.9	151.9	156.3	162.8
Consecutive 4th Dry Year	132.2	146.0	147.9	151.9	156.3	162.8
Consecutive 5th Dry Year	132.2	146.0	147.9	151.9	156.3	162.8

Table N: Percent Cutback to the Wholesale Customers *Without* Bay-Delta Plan

	2020	2025	2030	2035	2040	2045
Projected Purchases[i]	0%	0%	0%	0%	0%	0%
Consecutive 1st Dry Year	0%	0%	0%	0%	0%	0%
Consecutive 2nd Dry Year	0%	0%	0%	0%	0%	0%
Consecutive 3rd Dry Year	0%	0%	0%	0%	0%	0%
Consecutive 4th Dry Year	0%	0%	0%	0%	0%	15%
Consecutive 5th Dry Year	0%	0%	0%	0%	0%	15%

Table O1: Basis of Water Supply Data [For Tables 7-1 and 7-4], Base Year 2045, *Without* Bay-Delta Plan (mgd)

Consecutive Dry Year	1st	2nd	3rd	4th	5th
Wholesale RWS Demand	162.8	162.8	162.8	162.8	162.8
Wholesale RWS Supply Available	162.8	162.8	162.8	139.1	139.1
Percent Cutback	0%	0%	0%	Tier 2 Plan	Tier 2 Plan

Table O2: Individual Agency Drought Allocations [For Tables 7-1 and 7-4], Base Year 2045, *Without* Bay-Delta Plan (mgd)

	Wholesale RWS Drought Allocations					Tier 2 Drought Cutback
Consecutive Dry Year	1st	2nd	3rd	4th	5th	
ACWD	9.11	9.11	9.11	8.20	8.20	10.0%
Brisbane/GVMID	0.89	0.89	0.89	0.74	0.74	16.8%
Burlingame	4.69	4.69	4.69	4.02	4.02	14.3%
Coastside	1.33	1.33	1.33	1.19	1.19	10.0%
CalWater Total	30.70	30.70	30.70	26.73	26.73	12.9%
Daly City	3.43	3.43	3.43	3.01	3.01	12.4%
East Palo Alto	2.89	2.89	2.89	2.68	2.68	7.3%
Estero	4.38	4.38	4.38	3.94	3.94	10.0%
Hayward	22.14	22.14	22.14	18.67	18.67	15.7%
Hillsborough	3.26	3.26	3.26	2.93	2.93	10.2%
Menlo Park	4.29	4.29	4.29	3.58	3.58	16.5%
Mid-Peninsula	2.93	2.93	2.93	2.63	2.63	10.0%
Millbrae	3.20	3.20	3.20	2.54	2.54	20.7%
Milpitas	7.53	7.53	7.53	6.55	6.55	13.1%
Mountain View	9.93	9.93	9.93	8.91	8.91	10.3%
North Coast	2.34	2.34	2.34	2.11	2.11	10.0%
Palo Alto	10.79	10.79	10.79	9.71	9.71	10.0%
Purissima Hills	2.15	2.15	2.15	1.41	1.41	34.5%
Redwood City	8.90	8.90	8.90	7.92	7.92	11.1%
San Bruno	3.21	3.21	3.21	2.60	2.60	19.1%
San Jose	4.50	4.50	4.50	2.95	2.95	34.5%
Santa Clara	4.50	4.50	4.50	2.95	2.95	34.5%
Stanford	2.70	2.70	2.70	2.27	2.27	16.0%
Sunnyvale	12.10	12.10	12.10	10.11	10.11	16.5%
Westborough	0.84	0.84	0.84	0.76	0.76	10.0%
Total	**162.8**	**162.8**	**162.8**	**139.1**	**139.1**	

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