

**City of Burlingame**



***Draft***  
**Water Supply Assessment**

**for the**  
**300 Airport Boulevard Project**

**November 2011**

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## **1.0 INTRODUCTION**

The City of Burlingame (City or Burlingame) is conducting an environmental review under the requirements of the California Environmental Quality Act (CEQA) for the proposed 300 Airport Boulevard Project (Project). This water supply assessment (WSA) will provide information for use in the CEQA analysis for the Project. The environmental review for the Project includes an assessment of the available water supply to serve the Project along with existing and planned future uses. The requirements for a WSA are set forth in the California Water Code Sections 10910 et seq.

A WSA connects water supply and land use planning with the environmental review process. The law also reflects the growing awareness of the need to incorporate water supply and demand analysis at the earliest possible stage in the land use planning process. The core of this law is an assessment of whether available water supplies are sufficient to serve the demand generated by a project, as well as the reasonably foreseeable cumulative demand in the region over the next 20 years under a range of hydrologic conditions.

This WSA provides information on the available water supply to serve the Project based on California Water Code Sections 10631, and 10910 et seq.

This document is divided into five main sections: Introduction, Water Supply Sources, Demand Analysis and Comparison, Supplemental Supplies, and Summary and Conclusion. The Introduction describes the Project and water supply planning under California Water Code Sections 10910 et seq.

### **1.1 Project Location, Land Use, Zoning and Project Elements and Characteristics**

#### **1.1.1 Regional Location**

The City of Burlingame is located approximately 15 miles south of San Francisco on the San Francisco Peninsula.

Figure 1-1 shows the location of the Project Site as well as key elements of the development program.

### **1.1.2 300 Airport Boulevard Project Location**

The Project Site refers to both the 300 Airport Boulevard Site which is approximately 18.13 acres. The 350 Airport Boulevard Site, which is being reviewed at a program level in the Draft EIR for the project, is approximately 8.58 acres. The 350 Airport Boulevard site will be included in the cumulative analysis, but is not included in the WSA for the project.

In addition, the Project includes 1.57 acres of Eastern Shoreline land to the east of the 300 Airport Boulevard Site. The Project Site is in the northeast portion of the City, within the boundaries of the Bayfront Specific Plan and is mainly in the Anza Point North zoning district of the Specific Plan, with a 0.4 acre portion of the 300 Airport Boulevard Site located in the Anza Point South zoning district (rezoning of this portion of the site to the Anza Point North District is proposed as a part of the project).



The Project Site is to the north of US 101, immediately adjacent to San Francisco Bay (Bay) to the north and east, and Sanchez Channel to the west. The 300 Airport Boulevard Site is currently accessible from Beach Road and is bounded by Airport Boulevard to the north, Airport Boulevard and the Bay to the east, light-industrial buildings along Beach Road to the south, and Sanchez Channel to the west. The 300 Airport Boulevard Site consists of two parcels: Assessor’s Parcel Number (APN) 026-350-130 and 026-350-080. In addition, the Eastern Shoreline area, to the east of the 300 Airport Boulevard Site, is comprised of APN 026-350-100.

### 1.1.3 300 Airport Boulevard Project Components

#### 1.1.4 Site Plan

The Project would include the development at the 300 Airport Boulevard Site, including offsite improvements to the Eastern Shoreline parcel. The purpose of this WSA is to evaluate the potential water demand associated with Project. As such, only a detailed description of the 300 Airport Boulevard site is contemplated in this WSA.

#### **300 Airport Boulevard**

The Project at 300 Airport Boulevard would consist of an office/life science campus development. As shown in Table 1-1, below, the total site area would include 18.13 acres, subdivided into the following elements: development (10.48 acres), roadways and sidewalks (3.52 acres), and open space and landscaping (4.13 acres). In addition, the Project includes improvements along the eastern shoreline of the 300 Airport Boulevard Site including landscaped areas (1.39 acres) and roadways (0.18 acres).

<i>300 Airport Boulevard Site</i>	<i>18.13 acres</i>
Development Areas	10.48 acres
Roadway and Sidewalks	3.52 acres
Open Spaces and Landscape Areas	4.13 acres
<i>Eastern Shoreline Improvement</i>	<i>1.57 acres</i>
Landscaped Area	1.39 acres
Roadway	0.18 acres
<i>Source: DES Architects + Engineers, 2010.</i>	

**Development.** The Project includes the development of a new office/life science campus at 300 Airport Boulevard, consisting of a total of 730,000 square feet (sf). The Project would include two five-story buildings, one seven-story building, and one eight-story building. In addition, there would be a two-story, 37,000 sf amenities building, which would include a childcare facility, exercise facility, and a café and small retail spaces. The development would be divided by the realigned Airport Boulevard and would consist of the East Campus (Buildings B1 and B2) and the West Campus (Buildings B3 and B4, the amenities center, and the parking structure). Please see Proposed Structures, below, for further building descriptions.

**Roadways and Sidewalks.** Airport Boulevard would be realigned to bisect the Project Site. Currently, Airport Boulevard runs to the east of the Project Site and has a 90-degree turn at

Fisherman’s Park. Airport Boulevard the runs along the north side of the 300 Airport Boulevard Site. The Project includes the realignment of Airport Boulevard across the site from the southeast corner to the northwest corner. Although Airport Boulevard would bisect the 300 Airport Boulevard Site, the East Campus and West Campus would be connected by various pedestrian linkages and paths.

**Open Space and Landscaping.** The Project includes open space and landscaping. This would mainly include the Eastern Shoreline and Bay Trail along the Bay, the southeast corner of the site, and the shoreline adjacent to Sanchez Channel and the Bay Spur Trail. No buildings would be constructed within the 100-foot shoreline band, which together with the existing western shoreline revetment would be restored and rehabilitated to provide safe pedestrian access.

### 1.1.5 Proposed Structures

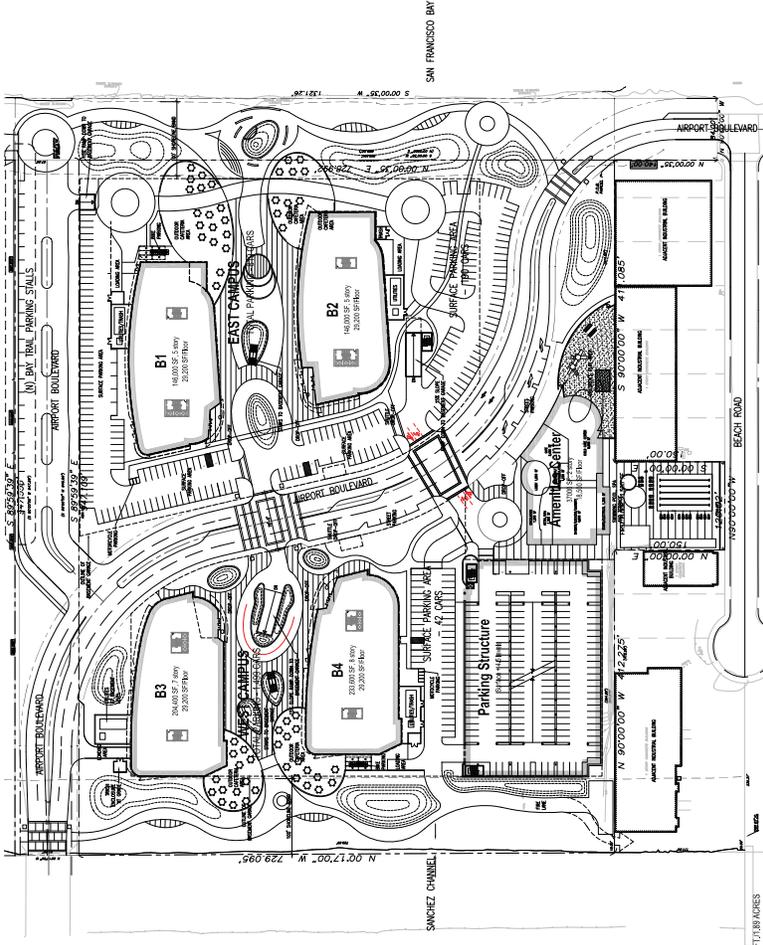
The Project would be comprised of two five-story buildings, one seven-story building, and one eight-story building containing a total of 730,000 sf. These buildings would be oriented in an east-west direction. In addition, the main buildings would be supported by a 37,000 sf amenities center, a multi-level parking structure, and two below-grade parking areas at both the East and West Campuses. Table 1-2, below, shows the building area of each building within the East and West Campuses. In addition, Figure 1-2 depicts the building locations at the Project Site.

<b>Table 1-2: Buildings at 300 Airport Boulevard Site</b>		
<b>Building</b>	<b>Gross Building Area (sf)</b>	<b>No. of Stories</b>
<b>East Campus</b>		
Building B1	146,000	5
Building B2	146,000	5
<b>West Campus</b>		
Building B3	204,400	7
Building B4	233,600	8
Amenities Center	37,000	2
Parking Structure	--	6
<b>Total</b>	<b>767,000</b>	
Source: DES Architects + Engineers, 2010.		

### **East Campus**

**Building B1.** Building B1 would consist of a five-story, 146,000 sf building. Building B1 would be in the northeast corner of the site, to the south of Fisherman’s Park and west of the Bay Trail. The building would measure approximately 97 feet from average top of curb level along Airport Boulevard to the top of the roof screen.

The first floor of Building B1 would include the lobby with elevators, two stairwells, a fire control room, and space for the office/life science tenants. In addition, the first floor could potentially include approximately 5,080 sf of retail space and 5,400 sf of food service area. The other floors (the second floor through fifth floor) would generally consist of 29,200 sf per floor and would include a lobby, a fire control room, and open areas for cubicles, individual offices, and/or laboratories. If Building B1 were to accommodate life science uses, the laboratories could be located throughout the building, with greater intensity of laboratory use on the lower floors. In total, Building B1 would provide at least 135,520 sf of office/life science space. The roof plan



PROJECT SITE: 70,124 SQ. FT. / 1.624 ACRES

ADJACENT TOWNWAY AND OPEN SPACE: 82,418 SQ. FT. / 1.88 ACRES

DEVELOPMENT SITE AREA - 18.48 ACRES/808,373 SQ. FT.

EAST CAMPUS: 220,000 SQ. FT.

WEST CAMPUS: 220,000 SQ. FT.

ROADWAY AND SIDEWALK: 3.52 ACRES/153,504 SQ. FT.

OPEN SPACE AND LANDSCAPE: 4.13 ACRES/179,865 SQ. FT.

EASTERN SIDEWALK IMPROVEMENT

TOTAL: 157 ACRES/6,945,504 SQ. FT.

LANDSCAPED AREA: 1.38 ACRES/60,360 SQ. FT.

ROADWAY: 4.18 ACRES/184,500 SQ. FT.





would include a stair enclosure and elevator penthouse, a spandrel glass parapet wall, and a screened outdoor area for mechanical equipment. Building B1 would also include bicycle commuter facilities, a utilities/trash/recycling enclosure and loading area to the north of the building, and an outdoor cafeteria area to the east of the building.

**Building B2.** Similar to Building B1, Building B2 would consist of a five-story, 146,000 sf building. Building B2 would be to the south of Building B1 and west of the Bay Trail. The building would measure approximately 97 feet from average top of curb level along Airport Boulevard to the top of the roof screen. The floor plan of Building B2 would be similar to Building B1, with slightly more retail and food service space. The first floor could potentially include 5,480 sf of retail space and 5,560 sf of food service area. Approximately 134,960 sf of office/life science space would be included in Building B2. This building would also include a utilities/trash/recycling enclosure and loading area to the south of the building and an outdoor cafeteria area to the east of the building.

### ***West Campus***

**Building B3.** Building B3 would consist of a seven-story, 204,400 sf building. Building B3 would be in the northwest corner of the site, to east of Sanchez Channel and the proposed Bay Trail. The building would measure approximately 129 feet from average top of curb level along Airport Boulevard to the top of the roof screen.

The first floor of Building B3 would include the lobby with elevators, two stairwells, a fire control room, and space for the office/life science tenants. In addition, the first floor could potentially include 3,570 sf of retail space and 5,500 sf of food service area. The other floors (the second floor through seventh floor) would generally consist of 29,200 sf per floor and would include a lobby, a fire control room, and open areas for cubicles, individual offices, and/or laboratories. If Building B3 would accommodate life science uses, then the laboratories could be located throughout the building, with greater intensity of laboratory use on the lower floors. In total, Building B3 would provide at least 195,330 sf of office/life science space. The roof plan would include a stair enclosure and elevator penthouse, a spandrel glass parapet wall, and a screened outdoor area for mechanical equipment. Building B3 would also include utilities at basement level, a trash enclosure at grade, a loading area, and an outdoor cafeteria area, all to the north of the building

**Building B4.** Building B4 would consist of an eight-story, 233,600 sf building. Building B4 would be in the western portion of the site, to east of Sanchez Channel and the proposed Bay Trail, south of Building B3, and north of the parking structure. The building would measure approximately 144 feet from average top of curb level along Airport Boulevard to the top of the roof screen. The floor plan of Building B4 would be similar to Building B3, with slightly more retail and food service space. The first floor could potentially include 3,900 sf of retail space and 5,700 sf of food service area. At least 224,000 sf of office/life science space would be provided in Building B4. This building would also include commuter bicycle facilities to the west of the building, a utilities/trash area to the south of the building, and a loading area and an outdoor cafeteria area to the east of the building.

**Amenities Center.** The amenities center would be a two-story, 37,000 sf building. This building would be in the southern portion of the site, immediately north of the existing Beach

Road driveway and east of the proposed parking structure. The building would measure approximately 48.5 feet from average top of curb level along Airport Boulevard to the top of the roof screen.

The first floor of the amenities center would include a reception/lobby, an office, locker rooms, a laundry room, 1,200 sf of retail space, 2,400 sf of food services, and a childcare center. The second floor would include an exercise area with spinning, yoga, group exercise, and Pilates rooms. To the east of the amenities building would be an outdoor children's play area, which would be accessible from the childcare center. In addition, a swimming pool would be to the south of the amenities center. The roof of the amenities building would include metal trellis, skylights to the first floor, and metal panels and screens, for the mechanical equipment.

**Parking Structure.** The parking structure would include parking on 6.5 levels and would be able to accommodate approximately 901 vehicles.

It should be noted that for conservative water supply planning purposes, this WSA assumes water demand generated by research and development (R&D) facilities, in this case, life sciences and other associated uses. This provides a conservative analysis since this would be a higher demand rate than for office uses.

## 1.2 Water Supply Planning

California has many different processes through which the development and/or maintenance of water supplies are planned for and managed on local and regional levels. In that context municipalities, special districts, and wholesale suppliers will develop and use various planning documents to not only understand but to also guide preservation and allocation of local and regional water resources. Urban Water Management Plans (UWMPs), Groundwater Management Plans, Integrated Regional Water Management Plans, Municipal Service Reviews, and water resources components of General Plans all integrate a degree of regional planning of water supply and demand. The following are brief descriptions of the plans mentioned above.

- UWMPs, pursuant to California Water Code Sections 10610 et seq. are long-range water supply and demand planning documents that provide a connection between land use planning and available water supplies. The plans should make every effort to ensure the appropriate level of reliability in a water service area sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry years.
- Groundwater Management Plans are adaptive management tools and represent a critical step in establishing a framework for maintaining a sustainable groundwater resource for the various users overlying the basins. The Groundwater Management Plans are consistent with the provisions of California Water Code Sections 10750 et seq. Groundwater Management Plans are developed in a consensus-based process, and include stakeholders throughout the overlying basins.
- Integrated Regional Water Management Plans are collaborative efforts to manage all aspects of water resources in a region. Integrated Regional Water Management Plans cross jurisdictional, watershed, and political boundaries; involve multiple agencies, stakeholders, individuals, and groups; and attempt to address the issues and differing perspectives of all the entities involved through mutually beneficial solutions.

- Municipal Service Reviews are comprehensive studies designed to better inform Local Area Formation Commission's (LAFCO), local agencies, and the community about the provision of municipal services. Service reviews capture and analyze information about the governance structures and efficiencies of service providers and identify opportunities for greater coordination and cooperation between providers. The Municipal Service Review is a prerequisite to a Sphere of Influence determination and may also lead a LAFCO to take other actions under its authority.
- General Plans are required by California law for local governments. The General Plan is designed to guide the long-term physical development and conservation of a local jurisdiction's land and environment through a framework of goals, policies, and implementation programs. The General Plan also provides a foundation for more detailed plans and implementation programs to be conducted, such as area or community plans, zoning ordinances, and specific plans.

To complement these large-scale planning processes, California enacted Senate Bills 610 and 221 in 2002, both of which emphasize the interrelationships between land use and water supply planning, and require the incorporation of water supply and demand analysis at the earliest possible stage in the planning process for sizeable land use projects. These statutes primarily apply to the planning of water supplies and identification of sources for defined "projects" (California Water Code, Section 10912) in the case of Senate Bill 610 and for individual residential subdivision projects of more than 500 units in the case of Senate Bill 221. Senate Bill 610 amended portions of the California Water Code, including Section 10631, which contains the Urban Water Management Planning Act, and added Sections 10910, 10911, 10912, 10913, and 10915, which describe the required elements of a WSA to be prepared and relied upon during the CEQA process. WSAs are prepared in connection with the environmental review process for defined "projects" (generally very similar to "projects of statewide, regional, or area wide significance," as defined in "CEQA Guidelines" Section 15206), and provide information (along with Environmental Impact Report [EIR] analysis) to be considered by agency decision-makers at the time of project approval. Nothing in Senate Bill 610 prevents a city or county from approving a Project even in the face of information concluding that there is not sufficient water supply for build-out of the project. Senate Bill 221 requires completion of a Water Supply Verification prior to the approval of certain major subdivision maps (500 or more residential units). Under Senate Bill 221, cities and counties may not approve final subdivision maps absent a showing of water supply availability for the amount of development to be authorized by the tentative map for residential developments of 500 or more units. A condition requiring such a showing must be included within the approved tentative subdivision map.

Under both laws, agencies are required to consider water demands over a 20-year planning horizon, taking into account normal, single dry, and multiple dry water year scenarios in light of the water provider's existing and planned future uses, including agricultural and manufacturing uses.

### **1.3 Water Supply Planning Under Senate Bills 610 and 221**

As the "public water system" that supplies water to customers in Burlingame including the Project, the City is required to prepare WSAs and Water Supply Verifications, under the requirements of Senate Bills 610 and 221, and the Government Code (Sections 65867.5,

66455.3 and 66473.7). There are three primary areas to be addressed in a WSA: (1) a description of all relevant water supply entitlements, water rights, and/or water contracts; (2) a description of the available water supplies and the infrastructure, either existing or proposed, to deliver the water; and (3) an analysis of the demand placed on those supplies, by the project, and relevant existing and planned future uses in the area. Where the description of existing water supply entitlements, water rights, and/or water contracts shows insufficient water supplies to serve the Project as well as existing and planned uses over the 20-year planning horizon, additional information is required to describe how and where sufficient supplies may be obtained. Such information must include the estimated costs, financing methods, and regulatory approvals needed to obtain new supplies, as well as a projected time frame for obtaining them.

As stated previously, under Senate Bill 221, cities and counties may not approve final subdivision maps absent a showing of water supply availability for the amount of development to be authorized by the tentative map. The project, as proposed does not include consideration for approval of a tentative map; therefore, Senate Bill 221 is not applicable.

Senate Bill 610, which is applicable to certain large projects subject to CEQA or considered a “project” under California Water Code Section 10912(a) or (b), builds on the information that is typically contained in an UWMP. The amendments to California Water Code Section 10631 were designed to make WSAs and UWMPs consistent. A key difference between the WSAs and UWMPs is that UWMPs are required to be updated every five years, in years ending with either zero or five, while WSAs are required as part of the environmental review process for large-scale qualifying projects. As a result, the 20-year planning horizons for each type of document may cover slightly different planning periods. Additionally, not all water providers who must prepare a WSA under Senate Bill 610 are required to prepare an UWMP because only public water systems providing water for municipal purposes to more than 3,000 customers, or supplying more than 3,000 acre-feet per year (AFY) must prepare UWMPs.

### **1.3.1 Senate Bill 610 Water Supply Assessment**

The Senate Bill 610 WSA process involves answering the following questions:

- Is the project subject to the California Environmental Quality Act?
- Is it a project under Senate Bill 610?
- Is there a public water system?
- Is there a current UWMP that accounts for the project demand?
- Is groundwater a component of the supplies for the project?
- Are there sufficient supplies available to serve the project over the next 20 years?

#### **1.3.1.1. “Is the Project Subject to the California Environmental Quality Act?”**

The first step in the Senate Bill 610 process is determining whether the project is subject to the CEQA. Senate Bill 610 amended Public Resources Code Section 21151.9 to read: “Whenever a City or county determines that a project, as defined in Section 10912 of the Water Code, is subject to this division [i.e., California Environmental Quality Act], it shall comply with part 2.10 (commencing with Section 10910) of Division 6 of the Water Code” as it requires the lead agency to determine if the project is subject to the CEQA.

Burlingame has determined that the Project is a project subject to the CEQA. The information contained in this assessment will be used to inform and support the EIR for the 300 Airport Boulevard Project, and will be appended thereto.

### **1.3.1.2. “Is It a Project Under Senate Bill 610?”**

The second step in the Senate Bill 610 process is to determine if a project meets the definition of a “Project” under California Water Code Section 10912(a). Under this section, a “Project” is defined as meeting any of the following criteria:

- A proposed residential development of more than 500 dwelling units;
- A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 sf of floor space;
- A commercial building employing more than 1,000 persons or having more than 250,000 sf of floor space;
- A hotel or motel with more than 500 rooms;
- A proposed industrial, manufacturing, or processing plant, or industrial park, planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 sf of floor area;
- A mixed-use project that includes one or more of these elements; or
- A project creating the equivalent demand of 500 residential units.

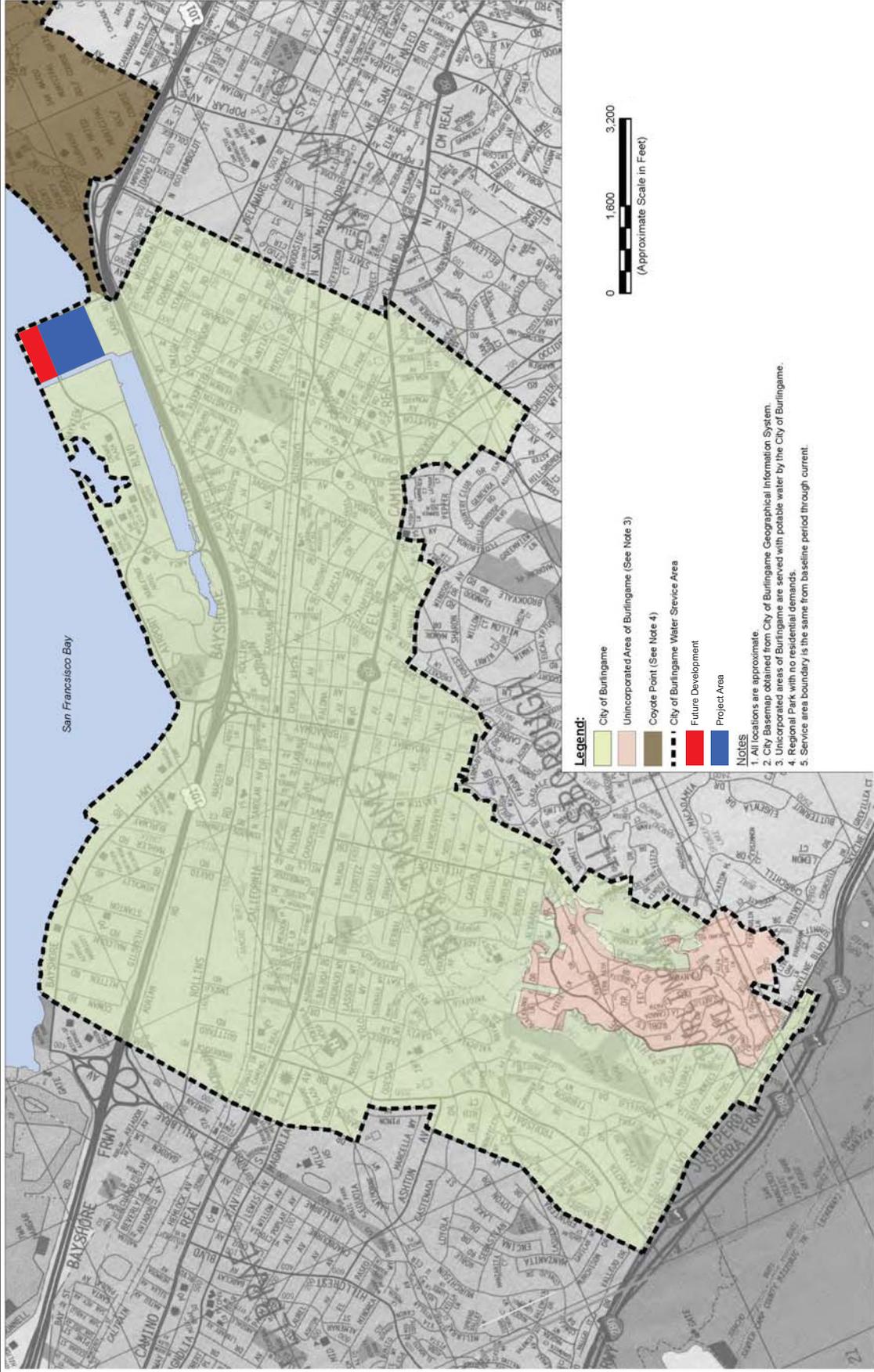
Alternately, in California Water Code Section 10912(b) if a public water system has less than 5,000 service connections, the definition of a “Project” also includes any proposed residential, business, commercial, hotel or motel, or industrial development that would account for an increase of 10 percent or more in the number of service connections for the public water system.

The Project is a mixed-use project that would include one or more of these elements listed above, specifically, “the Project exceeds commercial development of more than 250,000 sf of floor space;” additionally, “the Project is an industrial park having more than 650,000 sf of floor area” and for those reasons, it meets the requirements as a “Project” under the California Water Code. As a result, a WSA pursuant to California Water Code Section 10912 (a) will need to be prepared prior to completion of the EIR.

### **1.3.1.3. “Is There a Public Water System?”**

The third step in the Senate Bill 610 process is determining if there is a “public water system” to serve the project. Section 10912(c) of the California Water Code states: “[A] public water system means a system for the provision of piped water to the public for human consumption that has 3,000 or more service connections.”

The City is located in San Mateo County, approximately 15 miles south of the City of San Francisco, California (Figure 1-3 Service Area and Project Area). The City’s potable water system serves approximately 9,100 connections, both within the City limits and in the unincorporated Burlingame Hills area. The City also supplies potable water, primarily for irrigation purposes, to San Mateo County’s Coyote Point Park. Unincorporated Burlingame Hills



Source: DES, 2010.

FIGURE 1-3  
City of Burlingame Service Area and Project Location

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is west of the City, while Coyote Point is southeast of the City along San Francisco Bay. As such, Burlingame is a public water system that serves the City of Burlingame including the Project area and the unincorporated area of Burlingame Hills and Coyote Point Park.

The City along with the 26 member agencies of the Bay Area Water Supply and Conservation Agency (BAWSCA) receive purchased treated water from the San Francisco Public Utilities Commission's (SFPUC) Regional Water System (RWS). The BAWSCA members purchase approximately two-thirds of the water delivered through RWS and the balance is delivered to the City and County of San Francisco and its Retail Customers. Further discussion of the SFPUC, its RWS and BAWSCA appear in Section 2.0 of this WSA.

**1.3.1.4. “Is There a Current Urban Water Management Plan That Accounts for the Project Demand?”**

Step four in the Senate Bill 610 process involves determining if there is a current UWMP that considers the projected water demand for the project area. The City prepared and approved an UWMP in 2011. The City's 2005 UWMP is currently available online at the Department of Water Resources website and the 2010 UWMP is available for download at City's website (see footnote 1 below). Recent legislation in November 2009 resulted in Department of Water Resources extending the 2010 UWMP deadline. Adoption of the next update of the UWMP is now due on or before July 1, 2011.

California Water Code Section 10910 (c)(2) states: “If the projected water demand associated with the Project was accounted for in the most recently adopted urban water management plan, the public water system may incorporate the requested information from the urban water management plan in preparing the elements of the assessment required to comply with subdivisions (d), (e), (f), and (g) [i.e., the WSA].” The City's 2010 UWMP has been prepared and is currently available on the City's website (see footnote 1 below).<sup>1</sup> Due to the timing of the WSA for this Project and adoption of 2010 UWMP (on or before July 1, 2011), this WSA assumes that adoption of the 2010 UWMP will occur as required. The information (supply and demand data) currently in the 2010 UWMP accounted for the demand of the Project (per California Water Code Section 10910 (c)(2)); therefore, this WSA assumes, the 2010 UWMP can be relied on as foundational document and used accordingly for this WSA for the Project.

**1.3.1.5. “Is Groundwater a Component of the Supplies for the Project?”**

According to the requirements of Senate Bill 610, if groundwater is identified as a possible source, Section 10910 (f) of the California Water Code also applies, as such, a description of the groundwater basin or basins from which the Project will be supplied must be included in the WSA. Groundwater is a small component of the SFPUC's retail supply but is not used to provide water to any of the wholesale customers including the City's service area. The City has used a local groundwater well at Washington Park; however, this groundwater well was constructed for irrigation purposes only, and is used infrequently. In fact, at this time the well is not in operation. Because of the nature and status of the Washington Park well, this WSA assumes groundwater is not a viable or verifiable potable source of supply within the City's service area (including the Project Site) and will not be evaluated further. More information about the groundwater basin that underlies the City can be found in the City's 2010 UWMP (Section 4.3).

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<sup>1</sup> City of Burlingame website access 2010 Urban Water Management Plan <http://www.burlingame.org/Index.aspx?page=81>

### **1.3.1.6. “Are There Sufficient Supplies to Serve the Project Over the Next 20 Years?”**

California Water Code Section 10910(c)(4) states: “If the City or county is required to comply... the water assessment for the project shall include a discussion with regard to whether the total projected water supplies, determined to be available by the City or county (in the case, the City of Burlingame) for the project during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the Project, in addition to existing and planned future uses, including agricultural and manufacturing uses.”

This section briefly discusses the results of the analyses conducted in this WSA. Discussion items 1 - 3 below provide a synopsis of the results and conclusion. Further detailed discussions appear in Section 3.0 and 4.0. The conclusion is found in Section 6.

1. Burlingame’s Individual Supply Guarantee (ISG) from the SFPUC Regional Water System is 5.23 million gallons per day (mgd). In years with normal or above-normal precipitation (years of normal supply), based on the information found in the City’s 2010 UWMP; SFPUC is obligated to provide Burlingame with up to 100 percent of the City’s ISG. Therefore, Burlingame would have adequate supplies available within its water supply portfolio (City’s ISG) to serve the Project’s development plus existing demand and planned future uses between 2010 and 2035.
2. As presented in Section 4.1.2, SFPUC could curtail system-wide water deliveries by up to 20 percent when specific critical dry year events occur or when multiple dry years prevail. This curtailment jeopardizes the availability of water supplies. Notably, in some low-precipitation situations, SFPUC typically requests voluntary 10 percent demand reductions. In the event that SFPUC reduces its deliveries by 20 percent, Burlingame would have insufficient water supplies to meet the projected water demand associated with development at the Project Site, in addition to existing and planned future uses within the service area of the City. In these instances, Burlingame, through its water shortage contingency plan (per California Water code Section 10632) can also impose supply curtailments and implement subsequent stages of demand reductions to balance demand against curtailed supplies.
3. As a result of the analyses conducted in this WSA, and based on the functional uniqueness of the supply operations within the RWS, only under specific dry year conditions when treated water deliveries are curtailed by 20 percent could a potential supply shortfall occur. This WSA concludes that Burlingame has adequate supplies to meet customer demand in all years including the demand of the Project and existing and planned future uses. In the event of a supply shortfall when deliveries are curtailed by 20 percent, the City, through its water shortage contingency plan, can impose supply curtailments and subsequent stages of demand reductions to balance demand against curtailed supplies.

The next step in the Senate Bill 610 process is to prepare the actual assessment of the available water supplies, including the availability of these supplies in all water-year conditions over a 20-year planning horizon pursuant to California Water Code 10910(c)(3), and an assessment of how these supplies relate to project-specific and cumulative demands over that same 20-year period. The best available planning information used in this WSA is found in the City’s 2010 UWMP (forecasted to 2035). Although 20-year projections are required by California Water Code 10910(c)(3) for consistency with the Association of Bay Area Governments (ABAG)

2007 Projections the planning period in this WSA is 25 years and covers the years 2010 to 2035.

There are three primary areas addressed in a WSA:

- relevant water supply entitlements, water rights, and water contracts;
- a description of the available water supplies;
- analysis of the demand placed on those supplies, both by the project and on a cumulative basis.

Water entitlements and contracts are addressed in Section 2; demand analysis is discussed in Sections 3 and 4; supplemental supplies in Section 5, and results and conclusions in Section 6. Section 7 provides references for the preparation of this WSA.

## 2.0 WATER SUPPLY

This section presents the local climate conditions and reviews the City's water supply sources, entitlements, water rights and contracts.

### 2.1 Climate

Burlingame has a temperate Mediterranean climate with cool, wet winters and warm, dry summers. Climatic statistics are shown in Table 2-1. Average temperature is 57° Fahrenheit (F), with an average low of 49°F and an average high of 65°F (Table 2-1). The mean summer temperature (June through September) is 63°F. Precipitation averages 20 inches per year with most precipitation falling between November and March and little to none occurring April through September. The lack of rainfall during the warmer summer months contributes to a higher water demand in the summer, which is exacerbated by high evapotranspiration (ET) rates. ET records indicate an average loss of four (4) inches per month (in/mo), with a high of six (6) in/mo in June and July.

	Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec	Year Totals
ET (in) <sup>1</sup>	1.6	2	3.6	4.8	5.7	6.3	6.5	5.9	4.7	3.4	2.1	1.4	47.9
Precipitation (in) <sup>2</sup>	4.4	3.61	2.8	1.37	0.39	0.11	0.02	0.05	0.18	0.99	2.32	3.75	20.0
Temp <sup>2</sup>	49.1	52.1	53.7	55.8	58.5	61.4	62.7	63.6	64.1	61	55.2	49.8	57.3
Avg. Temp. Max. <sup>2</sup>	55.8	59.1	61.2	63.8	66.8	70	71.4	72.1	73.4	70.1	62.9	56.4	65.3
Avg. Temp. Min. <sup>2</sup>	42.5	45	46.2	47.7	50.3	52.7	54.1	55	54.8	51.9	47.4	43.2	49.2

Notes:  
 1 Evapotranspiration data are from the Department of Water Resources, California Irrigation Management Information System.  
 2 Data from Western Regional Climate Center for Station 047769 SAN FRANCISCO WSO AP from 1 July 1948 to 31 July 2010. All temperatures in Fahrenheit  
 Source: City of Burlingame. 2010. Urban Water Management Plan. p. 8.

According to the Department of Water Resources, eleven droughts have occurred in California since 1850.<sup>2</sup> The year 1977 is recognized as the driest single year of California's measured hydrologic record. The most recent multi-year statewide drought took place between 1987 and 1992. Droughts exceeding three years are relatively rare in Northern California; however, even localized droughts in Northern California have extensive repercussions for water agencies dependent upon Sierra Nevada snowpack and spring runoff.

Most recently, the winter (2010) and spring of 2011 were considerably wetter than previous years and the snowpack was above 100 percent; however, snowmelt runoff has been reduced by highly porous mountain soils and the previous three years of strained storage have influenced total surface water supplies.

2 Department of Water Resources. Background: Droughts in California. <http://watersupplyconditions.water.ca.gov/background.cfm>, accessed September 2007.

## 2.2 Water Supply Entitlements, Water Rights and Contracts

California Water Code Section 10910(d)(1) states: “The assessment required by this section shall include an identification of any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the Project, and a description of the quantities of water received in prior years by the public water system, or the City or county (in this case, City of Burlingame) if either is required to comply... under the existing water supply entitlements, water rights or water service contracts.”

## 2.3 Introduction to the Water Supply Sources

SFPUC currently delivers an annual average of approximately 265 mgd to retail and wholesale customers primarily within the San Francisco Bay Area. Approximately 85 percent of that water supply is provided by the Hetch Hetchy delivery system, which diverts water from the Tuolumne River in the Sierra Nevada. The balance (approximately 15 percent) comes from runoff in the Alameda Creek watershed (stored in the Calaveras and San Antonio reservoirs), and runoff from the San Francisco Peninsula (stored in the Crystal Springs, San Andreas, and Pilarcitos reservoirs, which also provide storage for water delivered from the Hetch Hetchy Project and its delivery system).

Table 2-2 shows the quantities and volumes of supply and the respective percentages. The table also shows the approximate volume of supply when a 20 percent system-wide reduction is imposed by SFPUC on retail and wholesale customers within the regional Bay Area conveyance system over multiple dry years. The frequency and criteria for these reductions is discussed later in this section.

<b>Table 2-2: Supply Sources and System-Wide Reductions</b>					
<b>SFPUC Water Sources</b>	<b>Normal Year Supply Source</b>			<b>Approximate Multiple Dry-Year Supply Source (20% System-wide Reduction)</b>	
	<b>Origin/System</b>	<b>mgd</b>	<b>Approximate % of Supply</b>	<b>mgd</b>	<b>Approximate % of Supply</b>
Local Source	Alameda System <sup>1</sup>	39.75	15	14.84	7
	Peninsula System <sup>2</sup>				
Imported Source	Hetch Hetchy System <sup>3</sup>	225.25	85	197.16	93
<b>Total</b>		<b>265.00</b>	<b>100</b>	<b>212.00</b>	<b>100</b>
Notes:					
1. Calaveras Reservoir, San Antonio Reservoir.					
2. Crystal Springs Reservoirs, San Andreas Reservoir, Pilarcitos Reservoir.					
3. Hetch Hetchy Reservoir, Lake Lloyd, Lake Eleanor, New Don Pedro Reservoir, Tuolumne River System.					
Source: San Francisco Public Utilities Commission. 2005. Urban Water Management Plan. p. 11.					

### 2.3.1 Surface Water Rights

San Francisco holds pre-1914 appropriative water rights to store and deliver water from the Tuolumne River in the Sierra Nevada and locally from the Alameda and Peninsula watersheds. San Francisco also diverts and stores water in the San Antonio Reservoir under an appropriative water right license granted by the State Water Resources Control Board in 1959.

Appropriative water rights allow the holder to divert water from a source to a place of use not connected to the water source. These rights are based on seniority and use of water must be

reasonable, beneficial, and not wasteful. In 1914, California established a formal water rights permit system, which is administered by the State Water Resources Control Board. The State Water Resources Control Board has sole authority to issue new appropriative water rights but cannot define property rights created under a pre-1914 appropriative water right.

The 1912 Freeman Report identified the ultimate diversion rate from the Tuolumne River to the Bay Area as 400 mgd<sup>3</sup> (448,220 AFY) and San Francisco used this as the basis for designing the export capacity of the Hetch Hetchy project for water supply deliveries to San Francisco. San Francisco has sufficient water rights for current diversions and the ultimate planned diversion rate of the Hetch Hetchy Project.

The federal Raker Act, enacted on December 19, 1913, grants to San Francisco rights-of-way and public land use on federal property in the Sierra Nevada Mountains to construct, operate, and maintain reservoirs, dams, conduits, and other structures necessary or incidental to developing and using water and power. It also imposes restrictions, and specific terms and conditions on San Francisco use of the Hetch Hetchy Reservoir. In terms of water rights, in order to divert water from the Tuolumne River a requirement exists that San Francisco recognizes the senior water rights of the Turlock and Modesto Irrigation Districts. Specifically, the Raker Act requires San Francisco to bypass certain flows through its Tuolumne River reservoirs to Turlock Irrigation District (TID) and Modesto Irrigation District (MID) for beneficial use. By agreement, San Francisco, TID, and MID have supplemented these Raker Act obligations to increase the TID and MID entitlements to account for other senior Tuolumne River water rights and to allow San Francisco to “pre-pay” TID and MID their entitlement by storing water in the Don Pedro water bank. San Francisco is required to bypass inflow to TID and MID sufficient to allow these districts to divert 2,416 cubic feet per second (cfs) or natural daily flow, whichever is less, at all times (as measured at La Grange), except for April 15 to June 13, when the requirement is 4,066 cfs or natural daily flow as measured at La Grange, whichever is less. Other terms and conditions specific to this WSA are presented in Section 2.5.3.2.

## 2.4 SFPUC Regional Water System

In 1934, in order to create the RWS, San Francisco combined its newly operational Hetch Hetchy water conveyance system and the existing Spring Valley system on the San Francisco Peninsula, which it had recently acquired with the purchase of the Spring Valley Water Company. With this acquisition, San Francisco also gained water rights to local diversions off existing streams on the San Francisco Peninsula that were originally held by the Spring Valley Water Company.

Currently, the RWS delivers water to 2.5 million users in Tuolumne, Alameda, Santa Clara, San Mateo, and San Francisco counties. As introduced above, the RWS delivers an annual average of approximately 265 mgd<sup>4</sup> – of this, 81 mgd serves the retail customers within the City and County boundaries of San Francisco and the other 184 mgd is delivered to the wholesale

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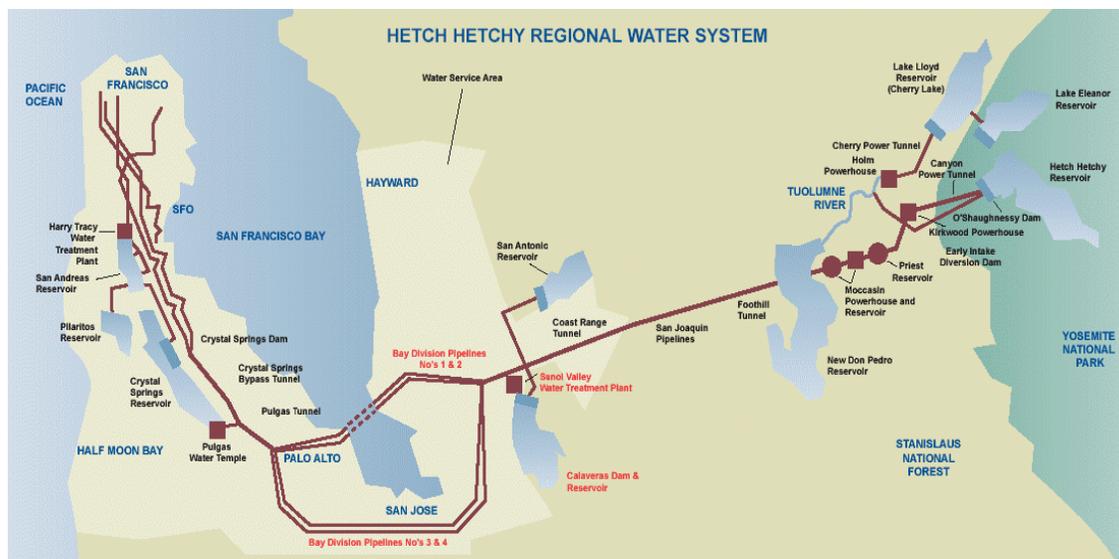
3 San Francisco made numerous water-rights filings on the Tuolumne River between 1901 and 1911. The Tuolumne River water-rights filings support a *prima facie* diversion rate well over 400 mgd. The 1912 Freeman Report, which provided the basis for San Francisco’s proposals to Congress to develop the Hetch Hetchy Project, identified 400 mgd as the ultimate diversion from the Tuolumne River. SF Planning Department, p. 2-39, SFPUC Water System Improvement Program PEIR.

4 Total RWS deliveries in FY07/08 were 256.7 mgd.

customers based primarily on the San Francisco Peninsula. The wholesale customers then sell water to their consumers within the individual service areas.

The RWS is a complex system, shown in Figure 2-1, and supplies water from two primary sources:

- Tuolumne River through the Hetch Hetchy Reservoir; and
- Local runoff into reservoirs in Bay Area reservoirs in the Alameda and Peninsula watersheds.



**Figure 2-1: Regional Water Supply System**

Water from Hetch Hetchy Reservoir, through the Hetch Hetchy facilities represents the majority of the water supply available to SFPUC. During drought periods of low precipitation in the Bay Area, water from the Hetch Hetchy system can amount to over 93 percent of the total water delivered through the RWS.

Bay Area reservoirs provide on average approximately 15 percent of the water delivered by the SFPUC RWS. The local watershed facilities are operated to conserve local runoff for delivery. On the San Francisco Peninsula, SFPUC utilizes Crystal Springs Reservoir, San Andreas Reservoir, and Pilarcitos Reservoir to capture local watershed runoff. In the Alameda Creek watershed, SFPUC constructed the Calaveras Reservoir and San Antonio Reservoir. In addition to capturing runoff, the San Antonio, Crystal Springs, and San Andreas reservoirs also provide storage for Hetch Hetchy diversions. The local watershed facilities also serve as an emergency water supply in the event of an interruption to Hetch Hetchy diversions.

## 2.5 Water Supply Reliability, Improvements and Planning

### 2.5.1 San Francisco Public Utilities Commission Regional Water Supply and Demand Planning

SFPUC uses 83 years of climate data to model water supply reliability. Over the 83 years of climate data, the modeling showed five years of consecutive demand shortfalls based on the

1988-1992 drought climatological condition. In early winter of any year, SFPUC can begin to estimate water supply conditions for the next year using known and anticipated precipitation and snowpack conditions. These factors are used by SFPUC to determine whether the regional supply system will be capable of meeting SFPUC customer demand. Consequently, if the supply system appears incapable of meeting system-wide demand due to drought (dry year conditions), SFPUC is expected to declare a water shortage by March 31 of that year.<sup>5</sup> As total water demand on the RWS grows, the effects, brought on by these water shortages could increase both in frequency and in magnitude.

In fall 2002, SFPUC in conjunction with BAWSCA embarked on a comprehensive water demand projections study to assess 2030 water demand in the wholesale customers' service area. This Wholesale Customer Demand Study documents the methodology used and the resulting 2030 water demand projections. SFPUC also investigated the potential for water conservation savings and recycled water potential in the wholesale and retail service areas in conjunction with the water demand forecasts. The Wholesale Customer Demand Study projects that total demand on SFPUC supplies will increase by 19 percent by 2030.<sup>6</sup>

To improve dry-year supplies and ensure that the future water needs of its retail and wholesale customers will be met in a more reliable (through infrastructure improvements) and sustainable (through water use efficiency improvements) manner, SFPUC has undertaken water supply projects in the Water System Improvement Program. In addition, SFPUC is looking to diversify and enhance San Francisco's water supply portfolio through the development of local water supplies, such as recycled water, groundwater, and water conservation.

## **2.5.2 Water System Improvement Program and the Phased Water System Improvement Program Variant**

The Water System Improvement Program is a multi-billion dollar, multi-year, capital program to upgrade the RWS. The program will deliver improvements that enhance SFPUC's ability to continue to provide reliable, affordable, high quality drinking water to its 27 wholesale customers and regional retail customers in Alameda, Santa Clara, and San Mateo counties, and to 800,000 retail customers in San Francisco, in an environmentally sustainable manner.

Upon implementation, the Water System Improvement Program would improve the regional system with respect to water quality, seismic response, water delivery, and water supply to meet water delivery needs in the service area through the year 2030 and would establish level of service goals and system performance objectives. The Water System Improvement Program would implement a proposed water supply option, modify system operations, and construct a series of facility improvement projects. The proposed program area spans seven counties—Tuolumne, Stanislaus, San Joaquin, Alameda, Santa Clara, San Mateo, and San Francisco.

As required under the CEQA, the San Francisco Planning Department prepared a Program Environmental Impact Report (PEIR) for the Water System Improvement Program. The PEIR evaluated the potential environmental impacts of the proposed Water System Improvement Program and identified potential mitigations to those impacts. The PEIR also evaluated several

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5 San Francisco Public Utilities Commission. 2005. Urban Water Management Plan.

6 San Francisco Public Utilities Commission. 2004. *Wholesale Customer Demand Projection Technical Report*. Prepared by URS. p. 5-2.

alternatives to meet the SFPUC service area's projected increase in water demand to 300 mgd between now and 2030. The water supply improvement options investigated included 10 alternatives using various water supply combinations from the local watersheds; the Tuolumne and Lower Tuolumne; ocean desalination; and additional recycled water, groundwater, and conservation.

The PEIR was certified by SFPUC on October 30, 2008. On the same day SFPUC adopted the Phased Water System Improvement Program Variant option, discussed below.

#### **2.5.2.1. *Phased Water System Improvement Program Variant Discussion***

SFPUC requested that the PEIR include environmental assessment of four variants to the Water System Improvement Program. The Water System Improvement Program variants are essentially the same as the proposed program except for minor differences in water supply sources or rationing limits. The variants are not intended to serve as CEQA alternatives, which are discussed separately in the PEIR. The evaluation of the variants is provided to allow decision-makers to compare the environmental impacts of the variants to those of the Water System Improvement Program.

Of the four variants, the San Francisco Planning Department studied the Phased Water System Improvement Program Variant as part of the environmental analysis. SFPUC identified this variant in order to consider a program scenario that involved full implementation of all proposed Water System Improvement Program facility improvement projects to insure that the public health, seismic safety, and delivery reliability goals were achieved as soon possible, but phased implementation of a water supply program to meet projected water purchases through 2030. Deferring the 2030 water supply element of the Water System Improvement Program until 2018 would allow SFPUC and its wholesale customers to focus first on implementing additional local recycled water, groundwater, and demand management actions while minimizing additional diversions from the Tuolumne River. This strategy allowed SFPUC to proceed with implementation of the projects within the Water System Improvement Program while minimizing potential challenges on the PEIR from the environmental community. The Phased Water System Improvement Program Variant establishes a mid-term planning milestone in 2018 when SFPUC would reevaluate water demands through 2030 in the context of then-current information, analysis and available water resources.

SFPUC currently delivers an annual average of approximately 265<sup>7</sup> mgd from local watersheds (Peninsula and Alameda Creek) and the Tuolumne River Watershed. By 2030, demand on the SFPUC system is expected to increase to an annual average of 300 mgd. The Water System Improvement Program Variant would meet the projected 2018 purchase requests of 285 mgd from the RWS by capping purchases from the watersheds at 265 mgd; the remaining 20 mgd would be met through water efficiencies and conservation, water recycling and local groundwater use—10 mgd by wholesale customers and 10 mgd in San Francisco. Before 2018, SFPUC and the wholesale customers will engage in a new planning process to reevaluate water system demands and supply options, including conducting additional studies and environmental reviews necessary to address water supply needs after 2018.

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7 Total RWS deliveries in FY07/08 were 256.7 mgd. The SFPUC uses 265.0 mgd as its target daily delivery for planning purposes and to comply with its diversion limitations off the Tuolumne River and within the RWS capacities.

The Phased Water System Improvement Program Variant includes the following key program elements:

- Full implementation of all Water System Improvement Program facility improvement projects.
- Water supply delivery to RWS customers through 2018 only of 265 mgd average annual target delivery originating from the watersheds. This includes 184 mgd for wholesale customers and 81 mgd for retail customers.
- Water supply sources include: 265 mgd average annual from the Tuolumne River and local watersheds and 20 mgd of water conservation, recycled water and local groundwater developed within SFPUC's service area (10 mgd retail; 10 mgd wholesale).
- Dry-year water transfers of 2 mgd within the Westside Groundwater Basin Conjunctive Use Project.
- Re-evaluation of 2030 demand projections, potential RWS purchase requests and water supply options by December 31, 2018 and a separate SFPUC decision in 2018 regarding RWS water deliveries after 2018.
- The ability to impose financial penalties is included in the new Water Supply Agreement to limit water sales to an average annual of 265 mgd from the watersheds.<sup>8</sup>

### **2.5.3 Water Supply Sources for the City of Burlingame**

The water furnished to customers in Burlingame is treated water purchased from SFPUC as negotiated through BAWSCA.

#### **2.5.3.1. *Imported Purchased Water from SFPUC***

The City receives 100% purchased treated water from the RWS. By utilizing the storage and conveyance systems within the RWS, SFPUC serves all its retail and wholesale water demands with an integrated operation of imported water from Hetch Hetchy and/or locally produced Bay Area water.

#### **2.5.3.2. *Water Contracts and Agreements***

In 1984, SFPUC executed the Settlement Agreement and Master Water Sales Contract with the 27 member agencies of the BAWSCA. Figure 2-2 presents the entire BAWSCA family of agencies. The BAWSCA members purchase approximately two-thirds of the water delivered by the SFPUC system and the balance is delivered to the City and County of San Francisco and its retail customers.

The Settlement Agreement and Master Water Sales Contract primarily addresses the rate-making methodology used by SFPUC in setting wholesale water rates for its wholesale customers, in addition to addressing water supply and water shortages within the RWS. The Settlement Agreement and Master Water Sales Contract provides 184 mgd as an annual average of "Supply Assurance" to all BAWSCA wholesale customers, but is subject to

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<sup>8</sup> The Agreement allows the SFPUC to purchase additional water from the RWS. If combined Retail and Wholesale RWS deliveries exceed 265 mgd, the SFPUC Retail customers would be required to pay an Environmental Surcharge for RWS deliveries over 265.mgd and surcharge financial penalties are passed on to the agency with excessive usage.(Total RWS deliveries in FY07/08 were 256.7 mgd).

# BAWSCA MEMBERS

Agency Name	Agency Number
Alameda County Water District	1
City of Brisbane	2
City of Burlingame	3
Cal Water Service Co. - Bear Gulch	4a
Cal Water Service Co. - Mid-Peninsula	4b
Cal Water Service Co. - SSF	4c
Coastside County Water District	5
City of Daly City	6
East Palo Alto	7
Estero Municipal Improvement District	8
Guadalupe Valley Municipal Improvement District	9
City of Hayward	10
Town of Hillsborough	11
City of Menlo Park	12
Mid-Peninsula Water District	13
City of Millbrae	14
City of Milpitas	15
City of Mountain View	16
North Coast County Water District	17
City of Palo Alto	18
Purissima Hills Water District	19
City of Redwood City	20
City of San Bruno	21
City of San Jose	22
City of Santa Clara	23
Stanford University	24
City of Sunnyvale	25
Westborough Water District	26



Source: BAWSCA, 2009.

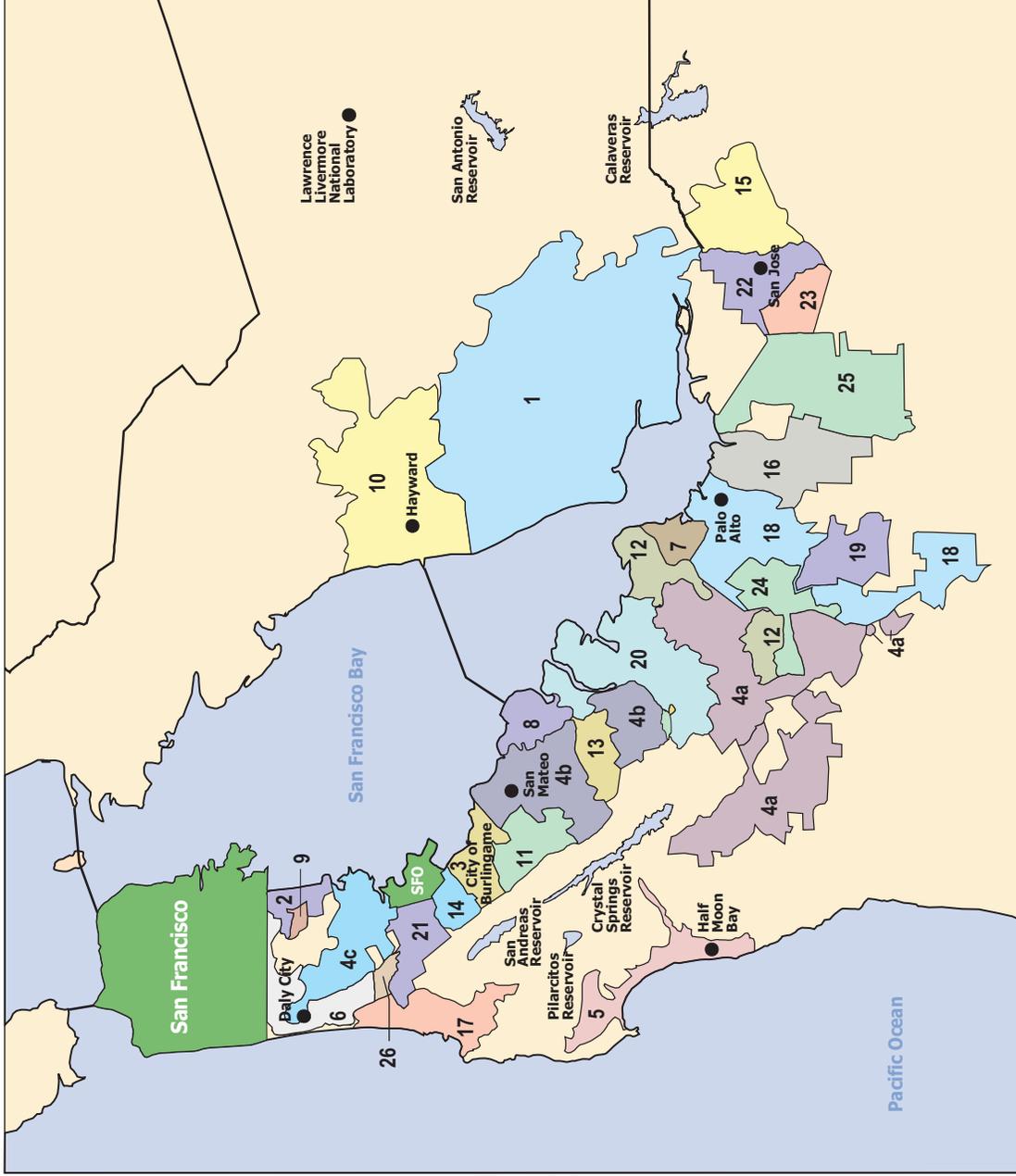


FIGURE 2-2  
BAWSCA Members



reductions in the event of droughts, water shortage, earthquake, other acts of God or system maintenance and rehabilitation.<sup>9</sup> Each member holds an individual water supply contract and the Settlement Agreement and Master Water Sales Contract governs the contract. The original twenty-five year contract ended on June 30, 2009.

The SFPUC approved the new twenty-five year contract, now known as the Water Supply Agreement, in June 2009 and the BAWSCA agencies completed their approval of the Water Supply Agreement in October 2009. This new Water Supply Agreement expires on June 30, 2034. Section 7.01 of the 1984 Settlement Agreement and Master Water Sales Contract states “Supply Assurance continues in effect indefinitely, even after expiration of the Master Water Sales in 2009” and this is still the case in the new Water Supply Agreement. The condition is a reflection of case law, which holds that a municipal utility acts in a trust capacity with respect to water supplied to outside communities (*Durant v. City of Beverly Hills*, 39 Cal. App. 2d 133, 102 P.2d 759 (1940); and *Hansen v. City of San Buenaventura*, 42 Cal. 3d 1172 (1986)). In other words, entire communities have developed in reliance on these water supplies. Consequently, the Supply Assurance of up to 184 mgd will survive the termination of the Water Supply Agreement and the Individual Contracts.

Additional agreements and plans have been developed over the last twenty-five years and are summarized in Table 2-3. The Water Supply Agreement now includes an Individual Supply Guarantee for most Wholesale customers. The Individual Supply Guarantee establishes the minimum quantity of water the SFPUC will supply to each Wholesale customer during times of normal supply. The Water Supply Agreement does not guarantee that SFPUC will meet peak or hourly demands if the individual Wholesaler’s annual usage exceeds the Individual Supply Guarantee. The Individual Supply Guarantee helps the Wholesaler plan for future demands and growth within their service area; for that reason, the Individual Supply Guarantee transcends the Water Supply Agreement expiration and continues indefinitely. The Individual Supply Guarantee for the City secures 5.23 mgd (or approximately 5,857 AFY) for normal year deliveries.<sup>10</sup>

In terms of water supply reliability, the SFPUC’s UWMP assumes “firm” delivery “as amount the system can be expected to deliver during historically experienced drought periods.”<sup>11</sup> The 1987 to 1992 drought is the basis for this plan, plus an additional period of limited water availability.<sup>12</sup> SFPUC plans its water deliveries assuming that the worst drought experience is likely to reoccur and then adds an additional period of limited water availability. An 8.5-year drought scenario is referred to as the “design drought” and is ultimately, the basis for SFPUC water resource planning and modeling. The “design drought” is based on the 1986-1992 drought plus 2.5 years of “prospective drought”, which includes 6 months of recovery period.<sup>13</sup>

In 2000, the SFPUC Water Supply Master Plan identified a 239 mgd annual average delivery over a hydrologic period equivalent to that experienced from 1921 to 1999 with no deficiencies.<sup>14</sup> Currently, under existing operations, the SFPUC system has a firm delivery

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9 San Francisco Public Utilities Commission. April 2000. *Water Supply Master Plan*. p. 23.

10 Bay Area Water Supply and Conservation Agency. March 2007. Annual Survey: FY 2005-06. p. 15.

11 San Francisco Public Utilities Commission. December 2005. *Urban Water Management Plan*. p. 21.

12 San Francisco Public Utilities Commission. December 2005. *Urban Water Management Plan*. p. 21.

13 San Francisco Public Utilities Commission. April 2000. *Water Supply Master Plan*. p. 22.

14 San Francisco Public Utilities Commission. April 2000. *Water Supply Master Plan*. p. 22.

**Table 2-3: Contracts/Agreements, Allocations, Plans and Programs**

Document	Contract Source/ Agreement	Wholesalers	Year Established	Supply Quantity	Expiration	Terms of Plan/Contract/Agreement
Settlement Agreement & Master Sales Contract	City and County of San Francisco	All members	1984; 2009	184 mgd (annual avg.)	2034	Rate making methodology, wholesale rates for wholesale customers; addresses water supply and water shortages; doesn't guarantee SFPUC will peak daily or hourly demands when customer usage exceeds the Supply Assurance Allocation (see - Section Supply Reliability)
Individual Water Supply Contract	City and County of San Francisco	Burlingame	1984;2009	5.23 mgd	2034	Establishes terms and conditions to deliver water.
Individual Supply Guarantee	City and County of San Francisco	All members	1994	184 mgd (annual avg.)	Continues indefinitely	Quantified SFPUC's obligation to supply water to its individual wholesale customers (all members adopted the Supply Assurance Allocation; each wholesale customer has a specified quantity)
		Burlingame	1994	5.23 mgd	Continues indefinitely	SFPUC can meet the demands of customers in years of average and above-average precipitation.
Water Supply Master Plan	SFPUC	BAWSCA Suburban Wholesale Members	2000	219 mgd due to recent operating restrictions on Calaveras Dam	N/A	Planning/guiding document - identified Water System Improvement Program, Capital Improvement Program - cooperative effort b/w SFPUC and BAWSCA
Water Supply Improvement Program	SFPUC	RWS	Program Environmental Impact Report Certified October 30, 2008	Identifies water supply options to meet projected 2030 demand of 300 mgd	N/A	SFPUC capital improvement program to "firm-up" supplies and ensure supply reliability to meet customer purchase requests during both drought and non-drought years; 35 mgd demand increase expected by 2030; options include increased diversions and conservation, water recycling, and groundwater supply programs
Water Shortage Allocation Plan	BAWSCA	Burlingame	2000	Allocates 20% System-Wide Reduction	2018	Two Tier Plan, 1) Allocates and distributes Water b/w SFPUC and BAWSCA - based on level of supply shortage. 2) Allocates the collective wholesale customer share. Allocation is based on Supply Assurance Allocation, purchases during 3 years preceding adoption of the WSAP, and rolling averages of purchases during 3 years immediately preceding onset of shortage

Source: Developed by Atkins January 2006 – Updated June 2011.

capability of 219 mgd.<sup>15</sup> This firm delivery decrease is due to the 2001 California Department of Safety of Dams operational restrictions on Calaveras Dam. Actual annual deliveries greatly exceed 219 mgd – in fact, in 2007-2008 SFPUC delivered approximately 257.8 mgd.

However, as of this writing, the environmental review for the Calaveras Dam Replacement project is currently on-going. Other repairs and improvements at Calaveras Reservoir have been completed or soon will be. The Sunol Valley Water Treatment Plant, located at Calaveras Reservoir is scheduled for expansion and storage capacity improvements; in fact, the Draft EIR was circulated for public review. Upon completion of the expansion, the treatment plant will be able to sustainably produce and deliver 160 mgd, which further improves SFPUC's ability to deliver firm supplies to the retail and wholesale customers.

According to the SFPUC's 2010 UWMP, there is sufficient water to meet all expected future demand in normal and wet hydrologic periods; however, the Water Supply Agreement allows the SFPUC to curtail deliveries during droughts, emergencies and scheduled maintenance activities.<sup>16</sup> SFPUC system operations are designed to allow sufficient water remaining in SFPUC reservoirs after six years of drought to provide some ability to continue delivering water, although at significantly reduced levels.<sup>17</sup> This differs from the "design drought", which is a water supply planning tool and as previously stated is based on the 1986-1992 drought plus 2.5 years of "prospective drought", which includes 6 months of recovery period.<sup>18</sup> In order to meet current demand in the San Francisco Bay area, SFPUC is currently delivering an annual average of 265 mgd,<sup>19,20</sup> about 46 mgd above firm delivery capabilities; consequently, if SFPUC declares a shortage, rationing would be necessary. Rationing is voluntary for up to a 10-percent system-wide reduction, but mandatory at greater than a 10-percent reduction. SFPUC used the historical hydrologic record from 1920 to 2002 (83 years) to assess the availability of water supplies in the future. This methodology assumes that climatic history will repeat itself and similar hydrologic conditions will be experienced. Under 2005 conditions (year of available data), there is a 7.3 percent probability of a 10 percent system wide shortage and a 9.8 percent probability of a 20 percent system wide shortage.<sup>21</sup> However, water supply reliability is expected to increase following the Crystal Springs and Calaveras Reservoir improvements that are expected to be completed by 2012.<sup>22</sup> These improvements would allow surface water storage of an additional 58,700 AF at Calaveras Reservoir and 11,100 AF at Crystal Springs; essentially adding 69,800 AF of stored water.

SFPUC and the wholesale members developed a long-term strategy to accommodate or rectify the potential of future water shortages throughout its wholesale and retail operations.<sup>23</sup> The methodology for determining water supply reliability during drought years is the Water Shortage

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15 City and County of San Francisco: San Francisco Planning Department. October 2008. *Program Environmental Impact Report for the San Francisco Public Utilities Commission Water System Improvement Program*. p. 5.1-12.

16 San Francisco Public Utilities Commission. 2005. *Urban Water Management Plan*. p. 15.

17 San Francisco Public Utilities Commission. April 2000. *Water Supply Master Plan*. p. 20.

18 San Francisco Public Utilities Commission. April 2000. *Water Supply Master Plan*. p. 22.

19 San Francisco Public Utilities Commission. 2005. *Urban Water Management Plan*. p. 11.

20 San Francisco Public Utilities Commission. 2005. *Urban Water Management Plan*. p. 11.

21 City and County of San Francisco: San Francisco Planning Department. October 2008. *Program Environmental Impact Report for the San Francisco Public Utilities Commission Water System Improvement Program*. p. 9-13.

22 San Francisco Public Utilities Commission. 2005. *Urban Water Management Plan*. p. 27.

23 San Francisco Public Utilities Commission. 2005. *Urban Water Management Plan*. p. 22.

Allocation Plan. The Master Water Supply Agreement allocates water between SFPUC retail customers and BAWSCA (Tier 1) and allows BAWSCA to develop a formula to allocate water among its members (Tier 2) for system-wide shortages up to 20 percent. In 2010, BAWSCA members agreed on a Tier 2 allocation formula that will remain in effect until 2018. In 2018, BAWSCA members could extend the current formula or modify it if need be. If BAWSCA members are unable to agree unanimously on a Tier 2 allocation formula, the BAWSCA Board will set the formula.

Under the current Water Supply Agreement, reductions to wholesale customers are to be based on each agency's proportional purchases of water from the SFPUC during the year immediately preceding the onset of shortage, unless this formula is supplanted by a water conservation plan agreed to by all parties. The Water Supply Allocation Plan formula described hereafter is currently being renegotiated by the BAWSCA membership. The Water Supply Allocation Plan was necessary because the Settlement Agreement and Master Water Sales Contract's default formula discouraged the wholesale customers from reducing purchases during normal or wet years by applying demand management programs (conservation measures) or pursuing alternative supplies (groundwater, water recycling, transfers, etc.). The Water Supply Allocation Plan somewhat addressed this issue by basing the allocation formula on the three immediate years preceding the shortage and allowing transfers of banked water credits (water within a drought allotment that is not used).

The Water Supply Allocation Plan has two components. The Tier One component of the Water Supply Allocation Plan allocates water between San Francisco and the wholesale customer agencies collectively. In a called 20 percent reduction by SFPUC, the City and County of San Francisco will only face an 18 percent reduction. The Tier Two component of the Water Supply Allocation Plan allocates the collective wholesale customer shares among each of the 27 wholesale customers and each wholesaler receives a different share. The Tier Two allocation is based on a formula that considers three factors, the first two of which are fixed: (1) each agency's Individual Supply Guarantee from SFPUC, with certain exceptions, and (2) each agency's purchases from SFPUC during the three years preceding adoption of the Plan. The third factor is the agency's rolling average of purchases of water from SFPUC during the three years immediately preceding the onset of shortage.<sup>24</sup>

Burlingame's Individual Supply Guarantee is 5.23 mgd; this is its share of the 184 mgd allocated for the BAWSCA members.<sup>25</sup> The SFPUC 2004 Wholesale Customer Water Demand Projections study analyzed water demands associated with each customer sector and then forecasted demands over a twenty-five year (2005 – 2030) planning horizon. The Tier One (SFPUC to BAWSCA) and Tier Two (BAWSCA to retailer agencies) allocation plans were used to determine supply reductions in single and multiple dry year scenarios. The Water Supply Agreement allocates wholesale supplies up to 184.0 mgd to 2018 and due to the limitations on the RWS Tier One supplies are held constant to 184 mgd through 2035.

Prior to 2018, SFPUC will re-assess its regional supply capacities in order to evaluate the RWS's reliability - at that point in time, SFPUC, in its efforts to provide water supply projections to the BAWSCA agencies is likely to present new water supply planning data out to 2030 or

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24 San Francisco Public Utilities Commission. 2005. *Urban Water Management Plan*. p. 81.

25 Bay Area Water Supply and Conservation Agency. January 2010. Annual Survey: FY 2008-09.

2035. Because water use efficiency and conservation efforts are needed to accommodate new growth throughout the Bay Area and it is unknown how or if new supplies would be available in the RWS, for consistency with the City’s 2010 UWMP, this WSA is holding the Wholesale supplies at 184.0 mgd and Burlingame’s Individual Supply Guarantee to 5.23 mgd.

**2.5.3.3. Interim Supply Allocations**

The Interim Supply Allocations (ISAs) refers to each individual wholesale customer’s share of the ISL. On December 14, 2010, San Francisco established each agency’s ISA through 2018. In general, the Commission based the allocations on the lesser of the projected fiscal year 2017-18 purchase projections or Individual Supply Guarantees. The ISAs are effective only until December 31, 2018 and do not affect the Supply Assurance or the Individual Supply Guarantees, both discussed separately herein. San Francisco’s Interim Supply Allocation is 81 million gallons per day (mgd); Burlingame’s ISA is 4.97 mgd.

**2.5.3.4. Total Water Supplies**

In 2009, Burlingame, along with 26 other Bay Area water suppliers signed a Water Supply Agreement (Agreement) with San Francisco, supplemented by an Individual Water Supply Contract. These contracts provide for a 184 mgd (mgd, expressed on an annual average basis) Supply Assurance to SFPUC’s wholesale customers collectively will expire in 25 years. Burlingame’s Individual Supply Guarantee is 5.23 mgd (or approximately 5,857 AFY). Although the Agreement and accompanying Water Supply Contract expire in 2034, the Supply Assurance (which quantifies SFPUC’s obligation to supply water to its individual wholesale customers) survives their expiration and continues indefinitely. Table 2-4 summarizes Burlingame’s total water supplies now and over the 25-year planning period from 2010-2035. The City intends to use these supplies to meet its customer demands.

<b>Table 2-4: Normal Year Supplies for City of Burlingame Individual Supply Guarantee from SFPUC</b>						
<b>Years</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>	<b>2035</b>
AFY	5,857	5,857	5,857	5,857	5,857	5,857
mgd	5.23	5.23	5.23	5.23	5.23	5.23

Source: City of Burlingame, 2010 Urban Water Management Plan

### 3.0 WATER DEMAND ANALYSIS

This section shows the calculated water demand for the Project as well as projected demand for the entire system and then compares the demand to the supply.

#### 3.1 Project Water Demand

The expected water use of the Project was determined by analyzing similar land uses and assigning a demand factor for each use. This analysis evaluates the net demand at the project-level. Build-out of the Project is expected to occur incrementally over the coming years, as changes in the development market create opportunities for commercial space and employment centers. However, for conservative water supply planning purposes water demand in the Project Site is assumed to occur immediately and is added to existing demand to present the quantitative data needed to analyze current and future demand within the City’s service area. Table 3-1 shows the proposed land uses that could occur at the Project Site as a result of implementation of the Project. The land uses (assuming 100% R&D uses) under Scenario A (most conservative), as shown in Table 3-1 would potentially create a net increase in water demand of up to 206 AFY or an average demand of 0.184 mgd. If the water efficiency hardware, fixtures, and landscapes were installed, demand would be reduced to 155 AFY or 0.138 mgd and under Scenario C optimized water use efficiencies i.e. dual plumbing systems, recycled water for irrigation and toilet flushing, demand would be effectively reduced to 92 AFY or 0.083 mgd. For comparison purposes, if the Project implemented 100 percent office spaces then the resulting water demand is estimated to be 55 AFY or 0.049 mgd.

<b>OPTION 2: 100% Research &amp; Development Land Use Plan</b>									
		<b>SCENARIO A <sup>1</sup> (Max Demand)</b>		<b>SCENARIO B <sup>2</sup></b>		<b>SCENARIO C <sup>3</sup></b>		<b>OPTION 1: 100% Office Use</b>	
<b>Land Use</b>	<b>Area (sf)</b>	<b>Water Demand Factor (gpd/sf)</b>	<b>Avg. Daily Water Demand (gpd)</b>	<b>Water Demand Factor (gpd/sf)</b>	<b>Avg. Daily Water Demand (gpd)</b>	<b>Water Demand Factor (gpd/sf)</b>	<b>Avg. Daily Water Demand (gpd)</b>	<b>Water Demand Factor (gpd/sf)</b>	<b>Avg. Daily Water Demand (gpd)</b>
Building B1	146,000	0.24	35,040	0.18	26,280	0.14	20,440	0.075	10,950
Building B2	146,000	0.24	35,040	0.18	26,280	0.14	20,440	0.075	10,950
Building B3	204,400	0.24	49,056	0.18	36,792	0.14	28,616	0.075	13,140
Building B4	233,600	0.24	56,064	0.18	42,048	0.14	7,849	0.075	10,950
Amenities Ctr	37,000	0.24	8,880		6,660		5,180	0.075	2,775
<b>TOTAL</b>	<b>767,000</b>		<b>184,080</b>		<b>138,060</b>		<b>82,525</b>		<b>48,765</b>
<b>Land Use Scenario</b>		<b>0.184 mgd</b>		<b>0.138 mgd</b>		<b>0.083 mgd</b>		<b>0.049 mgd</b>	
<b>Water Demand</b>		<b>206 AFY</b>		<b>155 AFY</b>		<b>92 AFY</b>		<b>55 AFY</b>	
<b>Notes:</b>									
1. Based on City standard generation rates which represent current, conservative industry standards.									
2. Incorporates state of practice water conservation, such as 0.5 gal/flush urinals, landscape requirements, etc.									
3. Incorporates aggressive water conservation, such as dual plumbing, recycled water for irrigation and flushing toilets/urinals, etc.									
Source: 300 Airport Boulevard Proposed Sewer Demands with Domestic Water Generation Rates, BKF Engineers, July 2009. Demand incorporated into 2010 Urban Water Management Plan for Citywide Water Demand and Purchase Amounts from SFPUC assumes all on-site demands are accounted for and estimated.									

For water supply planning purposes, this WSA assumes demand generated by the Project would come from a development scenario similar to that in Scenario B. This scenario uses water use efficiencies and would incorporate a landscape palette compatible with the San

Francisco Bay Area as identified in landscape reference materials i.e. *Bay-Friendly Gardening – From your backyard to the Bay*.

The City’s 2010 UWMP, based on information provided by the project sponsor (BKF Engineers, July 2009 - the source document used in Table 3-1) assumed daily demand generated by the Project plus additional development at 350 Airport Boulevard could be up to 0.22 mgd or 246 AFY as shown in Table 3-3 below (reference Table 9 in the City’s 2010 UWMP). This calculation was derived by calculating total water demand generated by the proposed mix of uses. Notably, 0.22 mgd represents the worst-case, build-out scenario (of the Project Site (proposed Project and the future development at 350 Airport Boulevard) while incorporating all necessary water savings measures to help the City meet its City-wide conservation target (see Section 3.5 of the City’s 2010 UWMP). Therefore, this WSA assumes the projected water demand generated under any of the development Scenarios (A, B or C) of the Project was accounted for in the City’s 2010 UWMP and is therefore, consistent with the 2010 UWMP and complies with California Water Code Sections 10910 (c)(1,2).

### 3.2 Historical System Demand

Table 3-2 contains historical total water demands, including recycled water demand within the City’s service area over fiscal years (“FY”) 2005-06 through 2009-10. The table shows potable demand fluctuating over the last five years but remaining at or near 4.30 mgd. Total potable water demand for the City is equivalent to the sum of the metered water consumption, the unmetered water consumption, and the Unaccounted-for Water.<sup>26</sup>

	2005-06	2006-07	2007-08	2008-09	2009-10
Potable Water Demand <sup>2</sup>	4.35	4.53	4.50	4.28	3.94
<b>Total Water Demand<sup>3</sup></b>	4.65	4.83	4.80	4.58	4.24

Notes:

- Values are reported in millions of gallons per day ("mgd") for the fiscal years 2005 through 2010. For breakdown of potable use see Table 8 in the City's 2010 UWMP.
- Quantity of water purchased from SFPUC, as recorded in the City's Salesmaster Reports.
- Gross water use includes 0.30 mgd of recycled water that is only used within the City's wastewater treatment plant for irrigation and in-plant process purposes.

Source: City of Burlingame, 2010 Urban Water Management Plan.

Though the relative proportion of water consumed by each sector (single-family, multiple-family, commercial, industrial and institutional with landscape) has remained fairly constant in recent years, the total quantity of potable water consumed by Burlingame has decreased (i.e., demand has decreased from 4.35 mgd in 2005-06 to 3.94 mgd in 2009-10). It is believed that the current total potable water demand is artificially depressed due to the multi-year drought and the current economy. It is anticipated that with an economic recovery and the end of the drought potable water demands will rebound and, with the growth forecasted for the City, water consumption is likely to increase in the future.

<sup>26</sup> UAW - water that is lost or unaccounted for within a water distribution system.

<b>Customer Sectors</b>	<b>2014-15</b>	<b>2019-20</b>	<b>2024-25</b>	<b>2029-30</b>	<b>2034-35</b>
Residential Single-Family	1.92	1.88	1.84	1.81	1.78
Residential Multi-Family <sup>2</sup>	0.89	0.87	0.86	0.85	0.84
Future Low Income Single-Family <sup>3</sup>	0.04	0.08	0.12	0.16	0.20
Future Low Income Multi-Family <sup>3</sup>	0.01	0.02	0.03	0.04	0.05
<b>Subtotal Residential</b>	<b>2.86</b>	<b>2.85</b>	<b>2.85</b>	<b>2.86</b>	<b>2.87</b>
Commercial <sup>4</sup>	0.71	0.72	0.75	0.77	0.78
<i>General Commercial</i>	<i>0.51</i>	<i>0.52</i>	<i>0.55</i>	<i>0.57</i>	<i>0.58</i>
<b>300 Airport Boulevard (Project Site)<sup>7</sup></b>	<b>0.22</b>	<b>0.22</b>	<b>0.22</b>	<b>0.22</b>	<b>0.22</b>
Industrial	0.57	0.62	0.67	0.73	0.74
Institutional	0.17	0.18	0.19	0.19	0.19
<b>Subtotal CII</b>	<b>1.45</b>	<b>1.52</b>	<b>1.60</b>	<b>1.69</b>	<b>1.71</b>
Irrigation	0.21	0.22	0.22	0.23	0.23
Temporary, Firelines <sup>5</sup>	0.004	0.004	0.004	0.004	0.004
<b>Subtotal Other</b>	<b>0.21</b>	<b>0.22</b>	<b>0.22</b>	<b>0.23</b>	<b>0.23</b>
<i>Subtotal Metered</i>	<i>4.52</i>	<i>4.59</i>	<i>4.68</i>	<i>4.78</i>	<i>4.81</i>
Unmetered <sup>5</sup>	0.02	0.02	0.02	0.02	0.02
Unaccounted for Water <sup>6</sup>	0.34	0.35	0.35	0.36	0.36
<b>Estimated Active Conservation Savings</b>	<b>0.08</b>	<b>0.09</b>	<b>0.10</b>	<b>0.11</b>	<b>0.12</b>
<b>Total Estimated Gross Water Use (mgd)</b>	<b>4.88</b>	<b>4.95</b>	<b>5.05</b>	<b>5.17</b>	<b>5.20</b>

Notes:

- Water use values are reported in millions of gallons per day for FY 2014-15 through 2034-35. Water use projections are based on the use Management Decision Support System Model (BAWSCA, 2009) with some modifications (see report text for more details regarding modifications to the DSS Model). These projections incorporate plumbing code impacts on water use and assumptions about the effectiveness of water conservation measures on reducing total potable water use.
- Residential Multi-Family includes residential water use from the Downtown Specific Plan.
- Future low income water use was calculated by multiplying the projected very low income housing units from Reference 1 by 2.24 people per dwelling unit from Reference 2 by the 2007-08 per capita water use of 153 gpcd. This amount was expected to occur every five years. Does not include use from existing low-income units. Water use was split between single-family and multi-family by the average percentage of each type of use from 2005-06 through 2009-10.
- Commercial includes estimates for the currently planned development located at 350 Beach Boulevard Burlingame, CA. Additionally, the commercial use includes those associated with the increased commercial use associated with the Downtown Specific Plan.
- Unmetered water use is assumed to remain constant for the planning period.
- Unaccounted for water assumed to be 7 percent per the DSS model.
- Assumes demand generated by at buildout of land uses at both 300 and 350 Airport Boulevard development.

Source: City of Burlingame 2010 Urban Water Management Plan, Table 9.

### 3.3 City of Burlingame System Demand Forecasts

The City utilized a demand side management model (DSS) Model that was based upon ABAG Population and Employment Projections (2007) and updated the model to include the additional population and employment associated with the Downtown Specific Plan as well as the proposed development of commercial property located along Airport Boulevard, (specifically, the Project as shown in Table 3-3 below) which were not specifically contemplated by ABAG at the time the DSS Model was completed as part of the WCIP. From the DSS Model, the City was able to obtain the projected water demands by water use sector. Burlingame’s potable water demands for each water use sector for the years 2014-15 through 2034-35 are shown in Table 3-3. Based on these projections, the City does not anticipate exceeding its 5.23 mgd Individual Supply Guarantee before 2034-35. Assuming the continued availability of existing non-potable water supply sources, the projected average daily potable water demand for Burlingame’s service area in 2034-35 is 5.20 mgd. A summary of the changes in the City’s future potable water demand projections is as follows:

1. Water consumption in the Commercial, Industrial and Institutional (*CII*) sector will increase by 18% to accommodate planned general commercial development as well as currently proposed development in the vacant parcels along Airport Boulevard (Project);
2. Water consumption in the *Other* sector will only increase slightly through 2034-35;
3. Unmetered water demand will remain constant at 0.02 mgd through 2034-35;
4. The percentage of Unaccounted-for Water will remain constant at 7% of the City's total potable water demand per year through 2034-35.

## 4.0 SUPPLY AND DEMAND COMPARISON

### 4.1 Comparison of Available Water Supplies versus Demand

Section 10910(c)(3) of the California Water Code states, “the water supply assessment for the project shall include a discussion with regard to whether the public water system’s total projected water supplies available for normal, dry and multiple dry water years during a 20-year projection will meet the projected water demand associated with the Project, in addition to the public water system’s existing and planned future uses, including agricultural and manufacturing uses.”

#### 4.1.1 Supply and Demand in a Normal Year based on Burlingame’s 2010 Urban Water Management Plan Projections.

Table 3-3 above shows the possible growth in water demand in the City’s service area based on number of connections that would come online over the next 25 years. This growth scenario projected total demand through 2035. The City’s 2010 UWMP assumed that supplies would not increase; because, as stated previously, per the Water Supply Agreement the City’s Individual Supply Guarantee is set at 5.23 mgd.

During preparation of this WSA, Burlingame provided its 2010 UWMP to show up-to-date projections of potential new demand. As shown in Table 4-1 over the next 25 years, under normal hydrologic conditions supply exceeds demand without employing conservation measures to manage potential demand increases.

	2014-18	2019-20	2024-25	2029-30	2034-35
SFPUC Supplies (ISG) <sup>1</sup>	5.23 <sup>2</sup>	5.23	5.23	5.23	5.23
Total Estimated Gross Water Use Demand (mgd)	4.88	4.95	5.05	5.17	5.20
<b>Difference [Surplus/(Deficit)]</b>	<b>0.09</b>	<b>0.28</b>	<b>0.18</b>	<b>0.06</b>	<b>0.03</b>
Note: 1 ISA is only effective until 2018 and then the City’s supply reverts to its ISG of 5.23. Both supply amounts are shown here for comparison purposes. 2 Burlingame’s ISG for these years is in fact 5.23. However, if total RWS demand exceeds 265 mgd, and if Burlingame use in excess of its [interim water supply allocation] 4.97 mgd, then the City would pay a surcharge for use above this [4.97 mgd] amount.					

#### 4.1.2 System-wide Supply and Demand Comparison in Normal, Single Dry and Multiple Dry Years with No Net Gain in Demand

SFPUC can meet the current and future demands of its retail and wholesale customers in years of normal and above-normal precipitation as shown in Table 4-1. The Agreement and Water Supply Allocation Plan allow SFPUC to reduce water deliveries to wholesale customers during periods of declared water shortages. SFPUC used the historical hydrologic record from 1920 to 2002 to compare water supplies and demands into the future. This methodology assumes that climatic history will repeat itself and similar hydrologic conditions will be experienced.

Table 4-2 includes the projected future supply and demand by varying hydrologic conditions over the 25-year planning horizon through 2035, as required by Senate Bill 610. It should be noted that Table 4-2 shows a worst-case SFPUC allocation scenario based on straight 20 percent curtail and does not account for Burlingame’s three-previous year’s usage, other

**Table 4-2: 2010-2035 Supply and Demand Comparison for Normal and Critical Dry and Multiple Dry Years under 20% Systemwide Reductions to BAWSCA Members - Burlingame-No Net Demand Increase Scenario with No Conservation**

	Normal Year Purchase Request		One Critical Dry Year <sup>(a)</sup>		Multiple Dry Year Event <sup>1</sup>					
					Year 1		Year 2		Year 3	
	mgd	%	mgd	%	mgd	%	mgd	%	mgd	%
<b>2011</b>										
SFPUC/BAWSCA Allocation	184.0	100%	152.5	82.9%	152.5	82.9%	132.5	72.0%	132.5	72.0%
Burlingame Allocation <sup>(1,2)</sup>	5.23	100%	4.09	78.2%	4.09	78.2%	3.58	68.5%	3.58	68.5%
Burlingame Demand	3.94		3.94		3.94		3.94		3.94	
Difference (Surplus/Deficit)	1.29		0.15		0.15		-0.36		-0.36	
<b>Conservation Requirement</b>	~	~	~	~	~	~		<b>9.1%</b>		<b>9.1%</b>
<b>2015</b>										
SFPUC/BAWSCA Allocation	184.0	100%	152.5	82.5%	152.5	82.9%	132.5	72.0%	132.5	72.0%
Burlingame Allocation <sup>(1,2)</sup>	5.23	100%	4.09	78.2%	4.09	78.2%	3.58	68.5%	3.58	68.5%
Burlingame Demand	4.88		4.88		4.88		4.88		4.88	
Difference (Surplus/Deficit)	0.35		-0.79		-0.79		-1.30		-1.30	
<b>Conservation Requirement</b>				<b>16.2%</b>		<b>16.2%</b>		<b>26.6%</b>		<b>26.6%</b>
<b>2020</b>										
SFPUC/BAWSCA Allocation	184.0	100%	152.5	82.5%	152.5	82.9%	132.5	72.0%	132.5	72.0%
Burlingame Allocation <sup>(1,2)</sup>	5.23	100%	4.09	78.2%	4.09	78.2%	3.58	68.5%	3.58	68.5%
Burlingame Demand	4.95		4.95		4.95		4.95		4.95	
Difference (Surplus/Deficit)	0.28	94.65%	-0.86		-0.86		-1.37		-1.37	-38.2%
<b>Conservation Requirement</b>				<b>17.4%</b>		<b>17.4%</b>		<b>27.6%</b>		<b>27.6%</b>
<b>2025</b>										
SFPUC/BAWSCA Allocation	184.0	100%	152.5	82.5%	152.5	82.9%	132.5	72.0%	132.5	72.0%
Burlingame Allocation <sup>(1,2)</sup>	5.23	100%	4.09	78.2%	4.09	78.2%	3.58	68.5%	3.58	68.5%
Burlingame Demand	5.05		5.05		5.05		5.05		5.05	
Difference (Surplus/Deficit)	0.18	96.56%	-0.96		-0.96		-1.47		-1.47	
<b>Conservation Requirement</b>				<b>19.0%</b>		<b>19.0%</b>		<b>29.1%</b>		<b>29.1%</b>
<b>2030</b>										
SFPUC/BAWSCA Allocation	184.0	100%	152.5	82.5%	152.5	82.9%	132.5	72.0%	132.5	72.0%
Burlingame Allocation <sup>(1,2)</sup>	5.23	100%	4.09	78.2%	4.09	78.2%	3.58	68.5%	3.58	68.5%
Burlingame Demand	5.17		5.17		5.17		5.17		5.17	
Difference (Surplus/Deficit)	0.06	98.85%	-1.08		-1.08		-1.59		-1.59	
<b>Conservation Requirement</b>				<b>20.9%</b>		<b>20.9%</b>		<b>30.7%</b>		<b>30.7%</b>
<b>2035</b>										
SFPUC/BAWSCA Allocation	184.0	100%	152.5	82.5%	152.5	82.9%	132.5	72.0%	132.5	72.0%
Burlingame Allocation <sup>(1,2)</sup>	5.23	100%	4.09	78.2%	4.09	78.2%	3.58	68.5%	3.58	68.5%
Burlingame Demand	5.20		5.20		5.20		5.20		5.20	
Difference (Surplus/Deficit)	0.03	99.43%	-1.11		-1.11		-1.62		-1.62	
<b>Conservation Requirement</b>				<b>21.3%</b>		<b>21.3%</b>		<b>31.1%</b>		<b>31.1%</b>

Notes:

1. It should be noted that this table (4-2) shows a worst-case allocation scenario based on straight 20 percent curtail and does not account for Burlingame's three-previous year's usage, other demands influencing the RWS's 265 mgd limiting and other RWS supply-demand factors.
2. BAWSCA Allocation based on the 2009 Settlement Agreement and Master Water Sales Contract currently being approved by all parties in interest. Pursuant to the 2009 Settlement Agreement and Master Water Sales Contract, BAWSCA and its member agencies will receive 184 mgd. After 2018 SFPUC could obtain additional supplies from the Tuolumne River watershed; however, at this time that remains an unknown. Therefore, in order to meet potential growth now and beyond 2018 to 2030, BAWSCA and its member agencies must optimize conservation measures and pursue local water supply sources, i.e. groundwater, stormwater and recycled water. The Settlement Agreement and Master Water Sales Contract determined that the BAWSCA members are responsible for obtaining 25 mgd collectively.
3. The tentative agreement among BAWSCA members is to use the results of Case 16A. It shows that in a 20% system-wide shortage, the average reduction among BAWSCA members is 26.88%.

Source: BAWSCA Table 1 REVISED - DRIP Case 16A Results Plus Options 1, 2 (corrected), and 3 (corrected) to Address EPA Needs.

demands influencing the RWS's 265 mgd limiting and other RWS supply-demand factors. As previously discussed, SFPUC can deliver an average of 239 mgd based on a hydrologic period equivalent to that experienced from 1921 to 1999 with no deficiencies and can meet the demand of its retail and wholesale customers in normal years.<sup>27</sup> In recent years, SFPUC has delivered 265 mgd, and in fiscal year 2007 – 2008, SFPUC delivered approximately 254 mgd – these are above the firm delivery capabilities of 219 mgd. In terms of water supply reliability, the SFPUC's UWMP assumes "firm" delivery "as amount the system can be expected to deliver during historically experienced drought periods."<sup>28</sup> In recent years (2007-2009), when many water suppliers declared drought conditions in their service areas, SFPUC did not declare a drought and did not impose a limitations or supply reductions on the RWS. As such, SFPUC was able to deliver adequate supply to meet all demand. However, during this 2007-2009 period, SFPUC did request a voluntary 10 percent reduction from BAWSCA members.

As shown in Table 4-2, only in normal or above-normal precipitation years (with the exception of 2011 as a critical dry year) can SFPUC meet the demand generated in Burlingame's service areas – this assumes that demand is held constant in each 5-year period over consecutive years and without conservation measures applied to reduce demand. For example, in 2015 and the following three years demand is held to 4.88 mgd.

Within the next 25 years, as shown Table 4-2, during critical dry and over multiple dry years when a 20 percent system-wide reduction could be imposed, SFPUC is incapable of sufficiently meeting citywide demand. In fact, under a 20 percent system-wide reduction even without implementation of new projects throughout SFPUC's service area, SFPUC is incapable of meeting local and regional demands under these specific dry year conditions. Under present regional water supply conditions, if a critical dry year is declared and SFPUC imposes a 10 or 20 percent system-wide reduction, water supplies to BAWSCA would be reduced accordingly; as such, BAWSCA members would be required to reduce their individual demands according to the Tier Two Water Supply Allocation Plan formula (Section 2 of this WSA).

Further as shown in Table 4-2, in years following 2015 the City would need to reduce its system-wide demand to 3.58 mgd and conserve 0.79 mgd in a critical dry year and up to 1.30 over multiple dry years in order to balance supply and demand. In future years the amount of conservation needed to balance demand against supply increases in each five-year period; by 2025, the City would need to conserve 19.0% in a critical dry year and up to 29.1% or 1.47 mgd over multiple dry years. The following section (WSA Section 4.1.3) discusses the measures to achieve such water savings. In order to achieve this level of savings, Burlingame would need to implement more aggressive water use efficiencies and increase the level of conservation as would all other wholesale agencies.

As discussed in Section 2.5.2., the Phased Water System Improvement Program Variant would meet the projected 2018 purchase requests of 285 mgd from the RWS by capping purchases from the watersheds at 265 mgd; the remaining 20 mgd would be met through water efficiencies and conservation, water recycling and local groundwater use—10 mgd by wholesale customers and 10 mgd in the SFPUC retail service area. As such, efficient use of water and more effective conservation measures are necessary to keep demand at current levels and also reduce

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27 San Francisco Public Utilities Commission. April 2000. *Water Supply Master Plan*. p. 22.

28 San Francisco Public Utilities Commission. December 2005. *Urban Water Management Plan*. p. 21.

demand further over the next seven years to accommodate new growth. In this case, for conservative water supply planning purposes, the WSA consistent with the 2010 UWMP<sup>29</sup> forecasts a supply shortfall without additional conservation. However, this approach presents a likely need for greater water savings within the City's service area and achieving its 20x2020 water conservation pursuant to Senate Bill x 7-7 (Section 3.5 2010 UWMP).

#### **4.1.3 Mandatory Conservation to Balance Supply and Demand**

As shown in Table 4-2, for example Burlingame would need to reduce its system-wide demand to 3.58 mgd and conserve 0.36 mgd in order to balance supply and demand in years following 2011. In order to achieve this level of savings, Burlingame would need to implement more aggressive water use efficiencies and increase the level of conservation in order to balance supply and demand as would all other Wholesale agencies.

Senate Bill x 7-7 (the Water Conservation Act of 2009) calls for reducing demand by 10 percent conservation per capita in 2015 and 20 percent by 2020. Assuming the City could achieve as much as 20 percent conservation in dry years when regional supplies are reduced by 20 percent, further aggressive conservation may not be necessary. This assumes that SFPUC reductions to Burlingame would be based on the City's Individual Supply Guarantee of 5.23 mgd and not the previous year's deliveries since the Water Supply Allocation Plan encourages annual demand reductions. As shown in Table 4-3, by 2015 pursuant to Senate Bill x 7-7, the City could reduce its overall demand by 10 percent and reduce the level of aggressive conservation to balance demand against reduced supply. In 2020, assuming the City achieves a 20 percent overall citywide demand reduction, in critical dry years no additional conservation measures would be necessary. Under multiple dry year events, the City would need to achieve an additional 9.5 percent (or 0.38 mgd) reduction in consumption to balance supply and demand. This would likely be achieved through a voluntary process without mandating water use restrictions. If based on Burlingame's SBx 7-7 water demand reduction achievements it is possible that the City's demand would be equal to SFPUC dry year allocation and no further conservation would be necessary; however, that is speculative at this time but is shown for comparison purposes. Against that, for conservative water supply planning this WSA maintains a supply shortfall under these multiple and critical dry year scenarios. The following section discusses the measures to achieve water savings.

#### **4.2 Water Conservation Best Management Practices**

Water conservation is a method available to reduce water demand, thereby reducing water supply needs for Burlingame. The unpredictable water supply and ever-increasing demand on California's complex water resources have resulted in a coordinated effort by the Department of Water Resources, water utilities, environmental organizations, and other interested groups to develop a list of urban Best Management Practices (BMPs) for conserving water, also commonly known as Demand Management Measures (DMMs) within the Urban Water Management Planning Act. This consensus-building effort resulted in a Memorandum of Understanding Regarding Urban Water Conservation in California, as amended September 16, 2009, among parties, which formalizes an agreement to implement these BMPs and makes a cooperative effort to reduce the consumption of California's water resources. The Memorandum

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29 City of Burlingame, 2010 Urban Water Management Plan pp. 43-44.

**Table 4-3: Mandatory Conservation to Balance Supply and Demand**

	Normal Year Purchase Request		One Critical Dry Year		Multiple Dry Year Event					
	mgd	%	mgd	%	Year 1		Year 2		Year 3	
					mgd	%	mgd	%	mgd	%
<b>2011</b>										
SFPUC/BAWSCA Allocation	184.0	100%	152.5	82.9%	152.5	82.9%	132.5	72.0%	132.5	72.0%
Burlingame Allocation	5.23	100%	4.09	78.2%	4.09	78.2%	3.58	68.5%	3.58	68.5%
Burlingame Demand	3.94		3.94		3.94		3.94		3.94	
Difference	1.29		0.15		0.15		-0.36		-0.36	
<b>Additional Conservation Requirement</b>								<b>9.1%</b>		<b>9.1%</b>
<b>2015 (10% Demand Reduction)</b>										
SFPUC/BAWSCA Allocation	184.0	100%	152.5	82.5%	152.5	82.9%	132.5	72.0%	132.5	72.0%
Burlingame Allocation	5.23	100%	4.09	78.2%	4.09	78.2%	3.58	68.5%	3.58	68.5%
Burlingame Demand	4.39		4.39		4.39		4.39		4.39	
Difference	0.84		-0.30		-0.30		-0.81		-0.81	
<b>Additional Conservation Requirement</b>								<b>18.4%</b>		<b>18.4%</b>
<b>Beyond SBx 7-7 Achievement - Greater than 10 % demand reduction<sup>1</sup></b>										
SFPUC/BAWSCA Allocation	184.0	100%	152.5	82.5%	152.5	82.9%	132.5	72.0%	132.5	72.0%
Burlingame Allocation	5.23	100%	4.09	78.2%	4.09	78.2%	3.58	68.5%	3.58	68.5%
Burlingame Demand <sup>1</sup>	4.39		4.09		4.09		3.58		3.58	
Difference	0.84		0		0		0		0	
<b>Additional Conservation Requirement</b>								<b>0</b>		<b>0</b>
<b>2020 – 2035 (20% Demand Reduction)</b>										
SFPUC/BAWSCA Allocation	184.0	100%	152.5	82.5%	152.5	82.9%	132.5	72.0%	132.5	72.0%
Burlingame Allocation	5.23	100%	4.09	78.2%	4.09	78.2%	3.58	68.5%	3.58	68.5%
Burlingame Demand	3.96		3.96		3.96		3.96		3.96	
Difference	1.27		0.13		0.13		-0.38		-0.38	
<b>Additional Conservation Requirement</b>								<b>9.5%</b>		<b>9.5%</b>
<b>Beyond SBx 7-7 Achievement - Greater than 20 % demand reduction<sup>1</sup></b>										
SFPUC/BAWSCA Allocation	184.0	100%	152.5	82.5%	152.5	82.9%	132.5	72.0%	132.5	72.0%
Burlingame Allocation	5.23	100%	4.09	78.2%	4.09	78.2%	3.58	68.5%	3.58	68.5%
Burlingame Demand <sup>1</sup>	3.96		3.96		3.96		3.58		3.58	
Difference	1.27		0.13		0.13		0		0	
<b>Additional Conservation Requirement</b>								<b>0</b>		<b>0</b>
1. If based on Burlingame's SBx 7-7 water demand reduction achievements it is possible that the City's demand would be equal to SFPUC dry year allocation and no further conservation would be necessary; however, that is speculative at this time but is shown for comparison purposes. Against that, for conservative water supply planning this WSA maintains a supply shortfall under these multiple and critical dry year scenarios. Source: City of Burlingame, 2010 Urban Water Management Plan derived and adapted by Atkins, April 2011.										

of Understanding is administered by the California Urban Water Conservation Council. The Memorandum of Understanding was recently revised to reflect current conditions, new technologies and methodologies to use water more efficiently and improve conservation efforts. The BMPs as defined in the Memorandum of Understanding are generally recognized as standard definitions of water conservation measures.

Although Burlingame is not a signatory of the Memorandum of Understanding, the City has agreed to implement the DMMs (and must also comply through its adoption of its 2010 UWMP – see Adoption and Implementation Section 1.5.3) and track its conservation progress through these measures. Burlingame and the other members of BAWSCA have partnered with SFPUC and other Bay Area water suppliers to implement numerous water conservation incentives and educational programs.

Briefly, the following DMMs outlined by the California Urban Water Conservation Council and other demand management programs that are currently in effect (by the City) to reduce demand

now and in future years. These DMMs along with the City's water shortage contingency plan, its policies and prohibitions would reduce demand in the event of supply cutbacks. These current DMMs included the following:

1. Water Survey Programs for Residential Customers;
2. Residential plumbing retrofit;
  - Water Conservation Kits (high-efficiency showerheads, hose nozzles, etc)
  - Residential High-Efficiency Toilet Rebates
3. Leak reductions through constant maintenance, system repair audits, leak detection, and repair;
4. Metering with commodity rates for all new connections and retrofit of existing connections;
5. Large landscape conservation programs and incentives;
6. High-efficiency washing machine rebate programs;
7. School education programs, and public outreach, includes water efficient landscaping;
  - Restaurant Table Tents
  - Radio Public Service Announcements
  - Fact Sheets
  - Direct Mailers/Bill Inserts
  - Resource Action Programs – Water Wise Program
8. Conservation programs for commercial, industrial, and institutional accounts.
  - Rebates Programs for:
    - High-Efficiency Toilet; High-Efficiency Clothes Washers; High-Efficiency Urinal; Pressurized Waterbroom; and, X-Ray Film Processor Re-Circulation System
9. Conservation pricing;
10. Water conservation coordinator;
11. Water waste prohibition;
12. Residential ultra-low-flush toilet replacement programs; and
13. System Pressure Control Program.

These programs and conservation measures are currently in affect by Burlingame along with other regional (BAWSCA) programs. Each of these programs work to reduce customer demand and reduce or eliminate the supply shortfalls. See Section 6 of the UWMP for complete list and description of the City's current DMMs. It should be noted that savings due to water conservation measures are difficult to measure and reports because the savings are achieved through per capita behavioral changes, use of water reducing fixtures and hardware, regulatory plumbing code modifications, distribution of recycled water to offset potable uses. Quantifying

these data are beyond the scope of this WSA.<sup>30</sup> Prior to development of the City’s 2015 UWMP, these data could be developed for inclusion in similar water supply planning studies.

#### 4.2.1 Dry-Year Shortage and Demand Reduction

Pursuant to the Urban Water Management Planning Act (California Water Code Section 10632), water suppliers with an existing dry year water shortage contingency plan can implement subsequent stages of demand reduction measures listed in its UWMP as a strategy to balance supply and demand.

Section 5 of the City’s 2010 UWMP is the dry year shortage contingency plan that allows Burlingame to reduce water deliveries to customers and implement demand reductions during periods of water shortage. Therefore, to overcome the potential supply deficit expected to occur when SFPUC reduces its deliveries by 20 percent during specific critical dry years or over multiple dry years, Burlingame would follow its adopted water shortage contingency plans to implement drought-planning sequences and associated operating procedures that subsequently initiate different levels of demand management relative to regional water supply rationing imposed by SFPUC.

Burlingame has developed a five-stage rationing plan as shown in Table 4-4. The plan includes voluntary and mandatory stages. Refer to Section 5 of the City’s 2010 UWMP for descriptions of each of these stages.

<b>Stage of Action</b>	<b>Customer Demand Reduction</b>	<b>Percent Reduction</b>
I (Watch)	Voluntary (Indoor 5%; Outdoor 5%)	10%
II (Alert)	Voluntary or Mandatory (Indoor 5%; Outdoor 25%)	10%
III (Warning)	Mandatory (Indoor 10%; Outdoor 50%)	20%
IV (Crisis)	Mandatory (Indoor 15%; Outdoor 75%)	30%
V (Emergency)	Mandatory (Indoor 35 %; Outdoor 100%)	50%

Source: City of Burlingame 2010 Urban Water Management Plan, Table 15.

30 SFPUC uses a demand-side model that accounts for water usage savings based on numerous factors and variables to determine its future demand but the accuracy of the results of this model has not been fully investigated.

## **5.0 SUPPLEMENTAL SUPPLY PROGRAMS**

According to the requirements of California Water Code Section 10910(c)(3), the WSA shall include a discussion of “whether the public water system’s total projected water supplies available... will meet the projected water demand associated with the Project, in addition to the public water system’s existing and planned future uses.” According to the requirements of California Water Code Section 10911(a), if the results of the assessment conclude that the water supplies are, or will be, insufficient, the WSA shall include plans for acquiring additional water supplies. Those plans may include, but are not limited to, information on costs, financing, permits, and timeframes.

In years of normal supply, Burlingame has sufficient supplies within its supply portfolio to meet demand over the 25-year planning horizon. As discussed in the previous section, water supplies are insufficient to meet existing and planned uses within the Burlingame when the SFPUC reduces its deliveries by 20 percent under specific critical dry events or over multiple-dry years. In fact, water supplies are insufficient to meet current demands in the City under these same dry years conditions without implementation of the Project or growth projected in the Association of Bay Area Governments 2007 Projections.

Based on a determination of insufficient supplies, it is necessary to investigate the potential for acquiring additional supplies to serve Burlingame. BAWSCA has completed the Phase I Scoping Report for the Long-Term Reliable Water Supply Strategy. This report marks the completion of the first step in the development and implementation of BAWSCA’s Long-Term Reliable Water Supply Strategy to reliably meet the projected normal and drought year water needs of BAWSCA member agencies and their customers through 2035.

### **5.1 Supply Reliability Projects (BAWSCA)**

Projects or programs Burlingame and BAWSCA are investigating to improve local supplies are discussed below.

#### **5.1.1 Long-Term Reliable Water Supply Strategy**

The Long-Term Reliable Water Supply Strategy is proceeding in three phases (a complete description of BAWSCA Long-Term Reliable Water Supply Strategy is available in the City’s 2010 UWMP in Section 5): Phase I (now complete) defined the magnitude of the water supply issue and the scope of work for the Long-Term Reliable Water Supply Strategy; Phase II will continue the development of the Long-Term Reliable Water Supply Strategy through detailed analysis of the water supply management projects, and development of the implementation plan for the Long-Term Reliable Water Supply Strategy; and Phase III will include the implementation of specific water supply management projects of the Long-Term Reliable Water Supply Strategy.<sup>31</sup>

A variety of potential water supply management projects are available to meet the supply need. These projects represent the building blocks for the water supply management portfolios

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<sup>31</sup> Long-Term Reliable Water Supply Strategy, p. ES-1.

(portfolios) that will be developed and evaluated in Phase II of the Long-Term Reliable Water Supply Strategy.<sup>32</sup>

The initial inventory of possible projects to be evaluated in Phase II was developed based on the following principle: *“The Strategy will not result in any uncompensated or involuntary reallocation of agency assets.”*<sup>33</sup>

The following approach was then used to develop the initial project inventory:<sup>34</sup>

- An initial project list was compiled based on review of BAWSCA member agency 2005 UWMPs and other publically-available documents (many of which are more than five years old);
- Based on the document review, projects that could potentially be developed to create new sources of supply were identified;
- Based on the document review, potential projects were identified where either there appeared to be the potential to increase project yield beyond what an agency had planned to meet its own needs, or where the project timeline could potentially be accelerated to bring the supply online sooner than currently planned; and
- BAWSCA member agencies removed, added, and updated projects to be evaluated in Phase II of the Long-Term Reliable Water Supply Strategy. Projects that will not be evaluated were removed from the inventory by member agencies.

The projects are categorized based on the source of water. These potential sources include groundwater, recycled water, water transfers, surface water and reservoirs, desalination, expanded conservation, and localized water capture and reuse. Figure 5-1<sup>35</sup> presents which source types provide potable and/or non-potable supply, have the ability to meet normal or drought year demands, and are located within or outside the BAWSCA service area.<sup>36</sup>

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32 Long-Term Reliable Water Supply Strategy, p. 4-1.

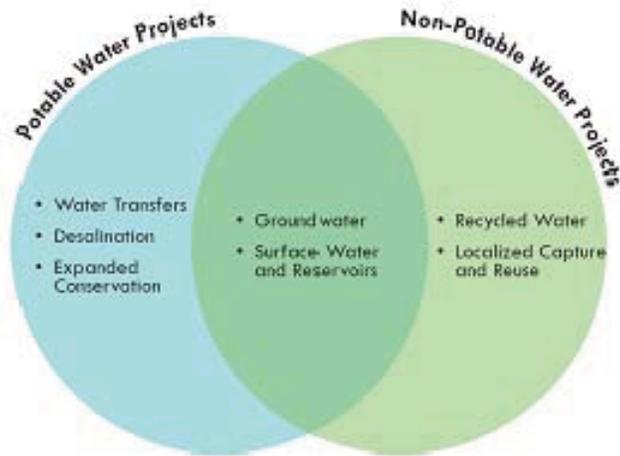
33 Long-Term Reliable Water Supply Strategy, p. 4-1.

34 Long-Term Reliable Water Supply Strategy, p. 4-2.

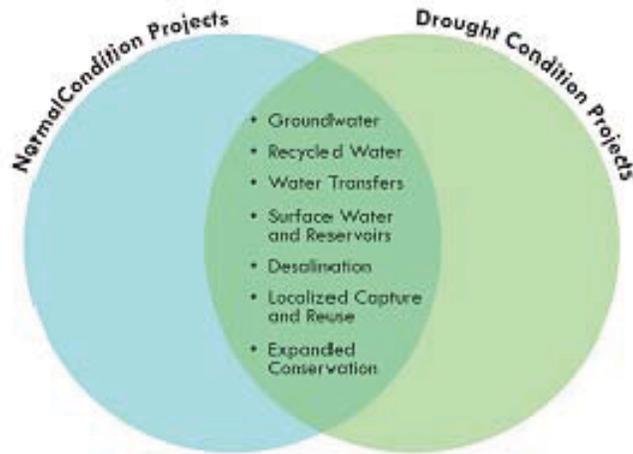
35 Long-Term Reliable Water Supply Strategy, p. 4-3.

36 Long-Term Reliable Water Supply Strategy, p. 4-2.

### A Mix of Potable and Non-Potable Projects are Available



### Potential Projects May Provide Yield in Both Normal and Drought Conditions



### Potential Projects Within and Outside the BAWSCA Service Area will be Evaluated

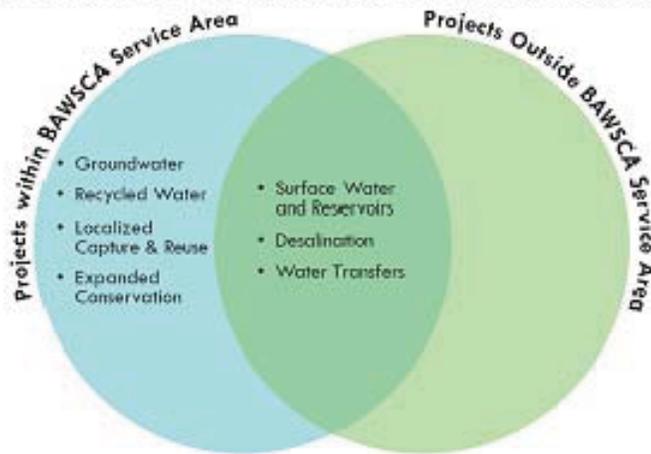


Figure 5-1: Water Supply Management Project Classifications

## 6.0 SUMMARY AND CONCLUSION

Implementation of the Project (0.20 mgd) in combination with existing and planned future uses would result in net increases in the average day demand within the City's service area in 2011 and out to 2035.

In years with normal or above-normal precipitation (years of normal supply), based on the analysis in this WSA and consistent with the City's 2010 UWMP, Burlingame would have supplies available within its water supply portfolio (Burlingame Individual Supply Guarantee) to serve the Project's development plus existing demand and planned future uses between 2011 and 2035.

A challenge remains within the regional water supply and demand context as well as throughout California; growth in demand is projected to occur while statewide supplies are waning. Regionally, as growth continues within BAWSCA member service areas, demand will incrementally reach BAWSCA's 184.0 mgd maximum. As stated in the BAWSCA Long-Term Water Supply Strategy document.

If the water supplies currently available to the BAWSCA member agencies continue to be unreliable and subject to cutbacks, then existing and future customers will be increasingly affected. This is not only true under normal conditions, but is exacerbated during drought events. ...The water supply challenges faced by the BAWSCA member agencies are regional and not limited to individual cities or water districts as the residents and voters in one community typically work or own businesses in another community within the BAWSCA service area. Therefore, a water supply shortfall in one BAWSCA agency that results in loss of jobs or other impacts can detrimentally affect the customers of another BAWSCA agency, even if that agency itself is not facing a supply shortfall.<sup>37</sup>

As presented in Section 4.1.2, SFPUC could curtail system-wide treated water deliveries by 20 percent only when specific critical dry year events occur or by 20 percent when multiple dry years prevail, which further jeopardize the availability of water supplies. In most low-precipitation situations, SFPUC typically requests voluntary 10 percent demand reductions. In the event that SFPUC reduces its deliveries by 20 percent (or 10 percent in critical dry years), Burlingame would have insufficient water supplies to meet the projected water demand including existing and planned future uses within its service area. This assumes current demands would not decline over the projected planning period; furthermore, even if SBx 7-7 conservation measures curtail demand under those specific dry year conditions with SFPUC reductions (of 10 or 20 percent) the City could experience a supply shortfall. In these instances Burlingame, through its water shortage contingency plan can also impose supply curtailments and implement subsequent stages of demand reductions to balance demand against curtailed supplies.

As presented in Section 5, BAWSCA is actively planning and investigating numerous ways to improve supply reliability and reduce demand within its service areas. Although these efforts are in the early planning stages of the Long-Term Reliable Water Supply Strategy, it would appear, based on the projects and programs presented in the Strategy document that even modest success in these efforts would improve water supply reliability on the San Francisco Bay Peninsula.

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<sup>37</sup> Long-Term Reliable Water Supply Strategy, p. ES-2.

Although there is an anticipated increase in SFPUC supply reliability as a result of SFPUC implementing the capital improvements in the Water Supply Improvement Program or increases of annual diversions from the Tuolumne River under existing water rights after 2018, demand in the SFPUC service area will continue to increase. In terms of water supplies purchased through SFPUC to 2018, BAWSCA's collective RWS demand can only increase to an annual average of 184 mgd as agreed upon in the Water Supply Agreement. Demand (above 184 mgd) associated with new growth in BAWSCA member agency's service areas has to be met with local supply improvements and conservation measures as discussed in Sections 2.5.2.

As discussed in Section 2.5.2, the Water Supply Improvement Program Phased Variant PEIR was certified in October 2008. As of this writing, many of SFPUC system reliability improvements are currently underway; others are currently undergoing environmental review but have not yet received environmental clearance to proceed. Without the assumed increase in SFPUC system reliability, the effects of water supply shortfalls would increase; conservation would be necessary in over 50 percent of all years.

As a result of the analyses conducted in this WSA (consistent with the City's 2010 UWMP), it appears based on the functional uniqueness of the supply operations within the RWS, only under specific dry year conditions when treated water deliveries are curtailed by 10 or 20 percent would a potential supply shortfall occur. City implemented SBx 7-7 conservation measures could curtail future demand and alleviate demand pressure on the RWS; however, the success of these SBx 7-7 reductions are not yet known. Therefore, this WSA consistent with the City 2010 UWMP concludes that Burlingame would have adequate supplies to meet customer demand in all years including the demand of the Project combined with existing and planned future uses. In the event of a supply shortfall when deliveries are curtailed by 10 or 20 percent, Burlingame, through its water shortage contingency plan (California Water Code Section 10632) can impose supply curtailments and subsequent stages of demand reductions to balance demand against curtailed supplies.

## **6.1 WSA Findings**

Regarding the availability of water supplies to serve the Project, beginning in 2010 this WSA finds as follows:

- In years of normal and above-normal precipitation combined with development of SFPUC's local WSIP water supply sources, Burlingame would have adequate supplies to serve the Project including existing and planned future uses.
- In critical dry and multiple-dry-year events, when SFPUC could impose 10 or 20 reductions in its supply during critical dry or over multiple dry years, Burlingame has in place a water shortage contingency plan to balance supply and demand. With a water shortage contingency plan in place, plus the addition of supplies developed through BAWSCA Long-Term Water Supply Strategy combined with SFPUC's Water Supply Improvement Program improvements, this WSA (consistent with the City's 2010 UWMP) finds that Burlingame has sufficient water supplies available to serve its customers including the demand of the Project in combination with existing and planned future uses.

## 7.0 REFERENCES

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