

# 7 Growth-Inducement Potential and Indirect Effects of Growth

# CHAPTER 7

## Growth-Inducement Potential and Indirect Effects of Growth

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### 7.1 Overview and Summary

#### 7.1.1 Approach to Analysis and Chapter Organization

This chapter analyzes the growth inducement potential and associated secondary effects of growth impacts of the San Francisco Public Utilities Commission’s (SFPUC’s) Water System Improvement Program (WSIP), as required by the California Environmental Quality Act (CEQA). CEQA requirements, other laws and regulations pertinent to land use and water supply planning, and how the project’s growth inducing impacts were assessed, are discussed below.

## CEQA Requirements

CEQA requires that an environmental impact report (EIR) evaluate the growth-inducing impacts of a proposed project<sup>1</sup>. A growth-inducing impact is defined as follows:

[T]he ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth.... It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

## Regulatory Context for Water Supply and Land Use Planning

The SFPUC does not have authority to make land use decisions in its service area. It cannot approve or deny development proposals; that is the responsibility of the cities and counties to which the SFPUC provides water. However, the SFPUC and its wholesale customers are required, through laws and agreements, to provide water service. Numerous laws are intended to ensure that water supply planning like the WSIP and land use planning (such as the approval of, or establishment of constraints to, development) proceed in an orderly fashion. The laws and agencies described below provide the regulatory and planning context for coordination among water agencies and cities and counties, and yield key documents (e.g., general plans and regional projections) used in this analysis.

- *General Plan Requirements.* Pursuant to state law<sup>2</sup>, each city and county is required to adopt a comprehensive, long-term general plan for the physical development of the jurisdiction. The general plan is a statement of development policies and is required to include land use, circulation, housing, conservation, open space, noise, and safety elements. The land use element designates the proposed general distribution, location, and extent of land uses and includes a statement of the standards of population density and building intensity recommended for lands covered by the plan. The city or county is required to prepare the water section of the conservation element in coordination with any countywide water agency and with all districts and/or city agencies that develop, serve, control, or conserve water for that jurisdiction. The water section must include discussion and evaluation of water supply and demand information contained in any applicable urban water management plan that has been submitted to the city or county by a water agency.
- *Urban Water Management Planning Act.* Every urban water supplier is required to prepare an urban water management plan (UWMP) for the purpose of “actively pursu[ing] the efficient use of available supply.”<sup>3</sup> In preparing the UWMP, the water supplier is required to coordinate with other appropriate agencies, including other water suppliers that share a common source, water management agencies, and relevant public agencies. When a city or county proposes to adopt or substantially amend a general plan, the water agency is required to provide the planning agency with the current version of the adopted UWMP, the current version of the water agency’s capital improvement program or plan, and other information about the system’s sources of water supply. The Urban Water Management Planning Act requires urban water suppliers, as part of their long-range planning activities,

<sup>1</sup> CEQA Guidelines Section 15126.2(d).

<sup>2</sup> California Government Code, Section 65300 *et seq.*

<sup>3</sup> California Water Code, Section 10610.2 *et seq.*

to make every effort to ensure the appropriate level of reliability in their water service sufficient to meet the needs of their various categories of customers during normal, dry, and multiple dry water years.

- Senate Bills 610 and 221. In 2001, the California legislature adopted two bills pertaining to coordination between land use and water supply planning and decision making:
  - *Senate Bill (SB) 610*. Pursuant to SB 610<sup>4</sup>, CEQA review for most large projects<sup>5</sup> is required to include a water supply assessment. The water supply assessments must address whether existing water supplies will suffice to serve the proposed project and other planned development over a 20-year period in average, dry, and multiple-dry year conditions, and must set forth a plan for finding additional supplies necessary to serve the proposed project. Cities and counties can approve projects notwithstanding identified water supply shortfalls provided that they address such shortfalls in their findings.
  - *SB 221*. Pursuant to SB 221<sup>6</sup>, land use agencies must require, at the time the subdivision map is considered for approval, that an applicant for a large subdivision<sup>7</sup> demonstrate that sufficient water supply is available to support the development. Proof of available supply must be based on written verification from the applicable public water system and must be supported by substantial evidence (which may include the public water system's UWMP). Water supply verification should require a showing of "real" water as a condition of final subdivision map approval.

### The Association of Bay Area Governments

A key regional agency involved in forecasting growth in the SFPUC service area is the Association of Bay Area Governments (ABAG). An advisory organization, ABAG is the official regional planning agency of the San Francisco Bay Region; its mission is to strengthen cooperation and coordination among local governments. Since its inception (1961), ABAG has examined regional issues such as housing, transportation, economic development, and the environment. ABAG members include the nine Bay-Area counties and 99 of 101 cities within the Bay Area, and represent nearly all of the Bay Area's population. ABAG's biennial *Projections* series provides long-term population and economic forecasts through a series of computer models. ABAG's model results are relied on by transportation and air quality agencies, water agencies, local governments, and others. ABAG forecasts are cited by many jurisdictions in their general plans, and were selected by many SFPUC water customers to forecast future water demand.

<sup>4</sup> Codified at California Water Code Sections 10631, 10656, 10910, 10911, 10912, and 10915.

<sup>5</sup> Large projects include residential developments with more than 500 units; retail uses with more than 500,000 square feet of floor space; office buildings with more than 250,000 square feet of floor space; hotels or motels with more than 500 rooms; industrial uses occupying more than 40 acres or having more than 650,000 square feet of floor area; and mixed-use projects that include any use or combination as large as the above uses.

<sup>6</sup> Codified at California Business and Professional Code Section 65867.5 and Government Code Sections 66455.3 and 66473.7.

<sup>7</sup> A large subdivision is defined as more than 500 dwelling units.

## Approach to Analysis and Chapter Organization

On the basis of the CEQA definition of growth stated above, assessing the growth-inducement potential of the WSIP involves answering the question: *Would construction and/or operation of planned improvements proposed as part of the WSIP directly or indirectly support economic or population growth or residential construction?*

By removing the lack of a reliable water supply and supply system as one potential obstacle to growth within the SFPUC service area, the WSIP would have an indirect growth-inducing effect according to the CEQA definition above.<sup>8</sup> Implementation of the WSIP would improve supply reliability for existing water system customers and meet customer purchase requests through the year 2030, as discussed in Chapter 3. Meeting additional purchase requests would provide water to serve additional residential and business customers in the existing SFPUC service area. A variety of factors influence new development or population growth in the area served by SFPUC water, including economic conditions of the region, adopted growth management policies in the affected communities, and the availability of adequate infrastructure (e.g., water service, sewer service, public schools, and roadways, etc.), with economic factors generally the lead driver. While water service is only one of many factors affecting the growth potential of a community, it is one of the chief public services needed to support urban development, and lack of a reliable water supply as well as a service capacity deficiency could constrain future development.

Pursuant to CEQA, growth *per se* is not assumed to be necessarily beneficial, detrimental, or of little significance to the environment; it is the secondary, or indirect, effects of growth that can cause adverse changes to the physical environment. The indirect effects of population and/or economic growth and accompanying development can include increased demand on community services and public service infrastructure; increased traffic and noise; degradation of air and water quality; and conversion of agricultural land and open space to urban uses. Local land use plans (e.g., general plans and specific plans) of the jurisdictions served by the SFPUC establish land use development patterns and growth policies that are intended to allow for the orderly expansion of urban development supported by adequate public services, including water supply, roadway infrastructure, sewer service, and solid waste service. Local jurisdictions conduct CEQA environmental review on their general and specific plans to assess the secondary effects of their planned growth. A project that would induce growth that is inconsistent with local land use plans and policies could indirectly cause adverse environmental impacts, as well as impacts on public services, that the local land use jurisdictions have not previously addressed in the CEQA review of their land use plans and development proposals.

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<sup>8</sup> The WSIP would not *directly* induce growth as it does not involve the development of new housing to attract additional population, nor would it indirectly induce growth by establishing substantial permanent or even short-term construction employment opportunities that could stimulate population growth. Construction of the WSIP projects is not expected to involve employment opportunities substantially beyond what would normally be available to construction workers in the area, and workers are expected to be drawn from the local labor pool.

To assess the growth inducement potential of the WSIP and characterize the secondary effects of growth, this chapter also investigates the following questions:

- *What assumptions did the SFPUC and its wholesale customers make regarding growth (population and employment) in projecting future (2030) total water demand and customer purchases from the SFPUC?*
- *Are these assumptions consistent with forecasts prepared and used by local and regional planning agencies (e.g., ABAG, counties and cities) within the service area? What are the growth trends in the Bay Area region?*
- *Are there any notable inconsistencies between the population and employment forecasts used by the SFPUC and the wholesale customers and those of the local and regional planning agencies that suggest that the water supply planning efforts are inconsistent with land use planning efforts?*
- *Is the level of growth projected for 2030 consistent with that identified and planned for in existing adopted general plans?*
- *What are the potential environmental impacts (secondary effects) associated with growth projected to occur in the service area? Have these impacts been evaluated in previous CEQA review documents on existing general and specific plans?*
- *What mitigation measures and findings have the local jurisdictions adopted as part of approving their future growth plans?*

The issues raised in these questions are addressed through the following analyses (the section where the analyses can be found is indicated in parentheses); a summary of the chapter's conclusions follows in Section 7.1.2.

- *SFPUC Projections (Section 7.2)*. Accurate demand projections are important in ensuring that future water supplies will be adequate while not surpassing the needs of planned growth. SFPUC and its customers used computer models to forecast future water demand. Section 7.2 presents an overview of the SFPUC water service area, and describes key factors (assumptions, inputs, and methodologies) used in estimating future demand that relate to growth and inform comparisons between water demand and land use planning projections. These factors include baseline population, methodology used to determine existing water usage by land use/account type, the current water supply agreement between the SFPUC and its wholesale customers, and assumptions regarding future land use patterns, water conservation and recycling, and water from other (non-SFPUC) sources through 2030. The demand estimates, in conjunction with estimates of savings from conservation and use of other water sources, provide the basis for the 2030 purchase estimates.
- *Growth Inducement Potential (Section 7.3)*. This section analyzes the WSIP's growth inducement potential: whether the demand to be met by the WSIP would be consistent with local plans and policies or could contribute to growth in the service area beyond that called for in the existing general plan. To gauge the consistency of the WSIP with growth planned in the jurisdictions served by the SFPUC, the analysis compares the growth assumed in the SFPUC projections with growth forecasts (a) developed by ABAG and (b) reflected in adopted land use plans in the service area. With respect to ABAG, this section also

describes ABAG's changing expectations about growth as reflected in its updated projections issued in 2002, 2003 and 2005.

- *Indirect Effects of Growth (Section 7.4)*. Growth (whether planned or unplanned) can cause environmental impacts. Section 7.4 describes the potential impacts of growth that could be supported, in part, by implementation of the WSIP. This section also identifies measures adopted to reduce, eliminate or otherwise mitigate the impacts of planned growth.

## 7.1.2 Summary of Conclusions

The following bullet items highlight the key findings of this chapter.

### **Service Area Characteristics, Growth Trends, and Policies**

A review of historical growth trends of a selection of jurisdictions in the service area, based primarily on information in general plans and Bay Area Water Supply and Conservation Association (BAWSCA) profiles, shows that:

- Cities in the service area are largely urbanized, most having experienced their most rapid growth in the postwar decades through the 1970s.
- Milpitas and East Palo Alto have experienced high rates of growth more recently.
- San Francisco's population fluctuated somewhat but on average has been essentially stable over the past 50 years.
- Many jurisdictions cannot grow laterally and their general plans include policies to manage growth; many general plans identify strategies consistent with "smart growth" principles, such as encouraging infill development and the redevelopment of previously developed areas, as means to accommodate future growth.
- The SFPUC's wholesale customers vary widely, in a variety of ways: by size, overall demand projected for 2030, the change that the 2030 demand represents in absolute terms and as a percentage of 2001 demand, and the degree to which the customers depend on the SFPUC for their water supply. As such, the WSIP would remove growth obstacles to varying degrees within the service area.

### **Growth Assumptions Used to Develop 2030 Water Demand and Purchase Requests Compared with ABAG Growth Projections**

As discussed in Sections 7.2.2 through 7.3.2, each SFPUC wholesale customer selected a published source for growth projections to use in developing its service area's projections for total water demand in 2030 and subsequently identified its estimated level of water purchase in 2030 from the SFPUC. The majority of customers (about two-thirds) selected the most current ABAG projections available at the time (*Projections 2002*); while the others (about one third) selected other published sources (such as Urban Water Management Plans) for their population growth projections. *Projections 2002* was used by for almost all of the employment growth

projections. These customer-selected growth projections were compared to ABAG's most recent projections series, *Projections 2005*.

- The growth assumptions used to derive the 2030 water demand estimates and subsequently the water customer purchase requests from the SFPUC are generally consistent with the most recent ABAG projections for jurisdictions in the service area. For the most part, the analysis demonstrates that, compared to the forecasts in ABAG's *Projections 2005*, the customer-selected projections used to derive water demand in the wholesale and retail service areas indicate:
  - somewhat less growth in employment and population (fewer added jobs and residents) through 2030, due largely to the expectation of more existing jobs in the area in 2005 than ABAG's *Projections 2005* estimates
  - more total employment in 2030 than ABAG's *Projections 2005* projects by about 5 percent overall
  - less total population in 2025 and 2030 by about 5 percent overall
- The growth that would be supported by the WSIP is generally consistent with current ABAG 2005 projections for jurisdictions in the service area. Because of differences in geographic area covered by most of the water customers and the jurisdictions they serve, they do not match exactly, and a few cannot be reasonably compared.

### **Growth Assumptions Used to Develop 2030 Water Demand and Purchase Requests Compared with General Plan Growth Assumptions**

As discussed in Section 7.3.3, the existing, adopted general plans for cities within the SFPUC wholesale customer service area and for San Francisco were reviewed to compare the level of growth projected in these land use plans with that reflected in the growth assumptions used in the WSIP planning studies. The key findings of this review are:

- The horizon years for projections in the general plans considered in the analysis vary from 2005 to 2025; none of the plans extend out to 2030, which is the WSIP planning horizon. Due to the WSIP's longer planning horizon, in some areas the WSIP could support a degree of growth that has not been addressed in adopted land use plans.
- Comparison of the growth assumed in the development of the WSIP demand projections with growth forecasted in locally adopted land use plans indicates that much of the WSIP-related growth has been addressed in the adopted plans. A comparison of general plan projections with those selected by the water customers shows that:
  - The population growth assumed in the demand projections for most (15 of 19) of the water customers for which comparable general plan projections are available is similar to the growth anticipated in the general plans of the cities served by them.
  - The employment growth assumed in the demand projections for most (11 of 16) of the water customers for which comparable general plan projections are available are



generally consistent with (within 20 percent of) the employment growth anticipated in the general plans of the cities served by them. This general consistency was found despite the extraordinary job growth that occurred as a result of the economic boom in the 1990s, which was substantially reflected in employment projections used for the water demand projections (*Projections 2002*) but was not reflected to the same degree in earlier projections series used for many of the general plan employment estimates.

- The employment growth assumed for four wholesale customers is substantially greater (between 20 and 70 percent greater) than the growth anticipated in the respective general plans, due to the economic boom that occurred in the 1990s in the Bay Area, which affected various jurisdictions differently. This difference in growth assumptions suggests that a degree of commercial and industrial growth assumed in the demand projections is not fully addressed in the respective general plans.
- The general plans of jurisdictions in the SFPUC service area vary substantially in age, whereas the ABAG projections are updated every two years.

## **Indirect Effects of Growth**

The indirect effects of growth expected in the general plans of jurisdictions in the service area have been identified in the EIRs prepared for those plans. A table of impacts commonly identified as significant and unavoidable and those commonly identified as significant but mitigable is presented in Section 7.4.

- The most commonly identified significant and unavoidable impacts of growth are:
  - Increased traffic congestion
  - Deterioration of air quality
  - Cumulative effects of increased air pollutant emissions and noise
- Mitigation measures have been adopted by local jurisdictions as part of their general plan approval processes to address the secondary effects of planned growth. These measures are summarized in Appendix E.
- Two cities identified increased demand for potable water supply as a significant and unavoidable effect of growth; the WSIP would address this issue in those two cities.
- Overriding considerations commonly adopted by the decision-making bodies in adopting their general plans include the following:
  - Accommodation of growth in an orderly, fiscally sound manner
  - Economic diversification and job generation
  - Creation of housing, furtherance of regional housing share objectives, and provision of affordable housing

- Improvements of the local jobs/housing balance
- Increased sales revenue and positive fiscal impact
- Promotion of alternative modes of travel to reduce reliance on private vehicles
- Establishment of policies to preserve natural areas and open space lands
- For many cities that receive water from the SFPUC regional system, the supply to be provided under the WSIP supports and is consistent with the planned growth reflected in their existing adopted general plans. For other communities, it appears that the WSIP supply (in combination with other supply sources available to those communities), could serve a level of growth beyond that identified in the existing general plans. In those cases, secondary effects of such growth could include impacts related to increased density and impacts related to development of new land areas.
  - Density related impacts could include, e.g., increased traffic congestion, air pollution, traffic noise, construction noise, and demand on public services.
  - Land area related impacts could include, e.g., loss of open space and agricultural land, loss of wildlife habitat, potential impacts on cultural resources, and interference with groundwater recharge and degradation of water quality due to increases in impervious surface area.

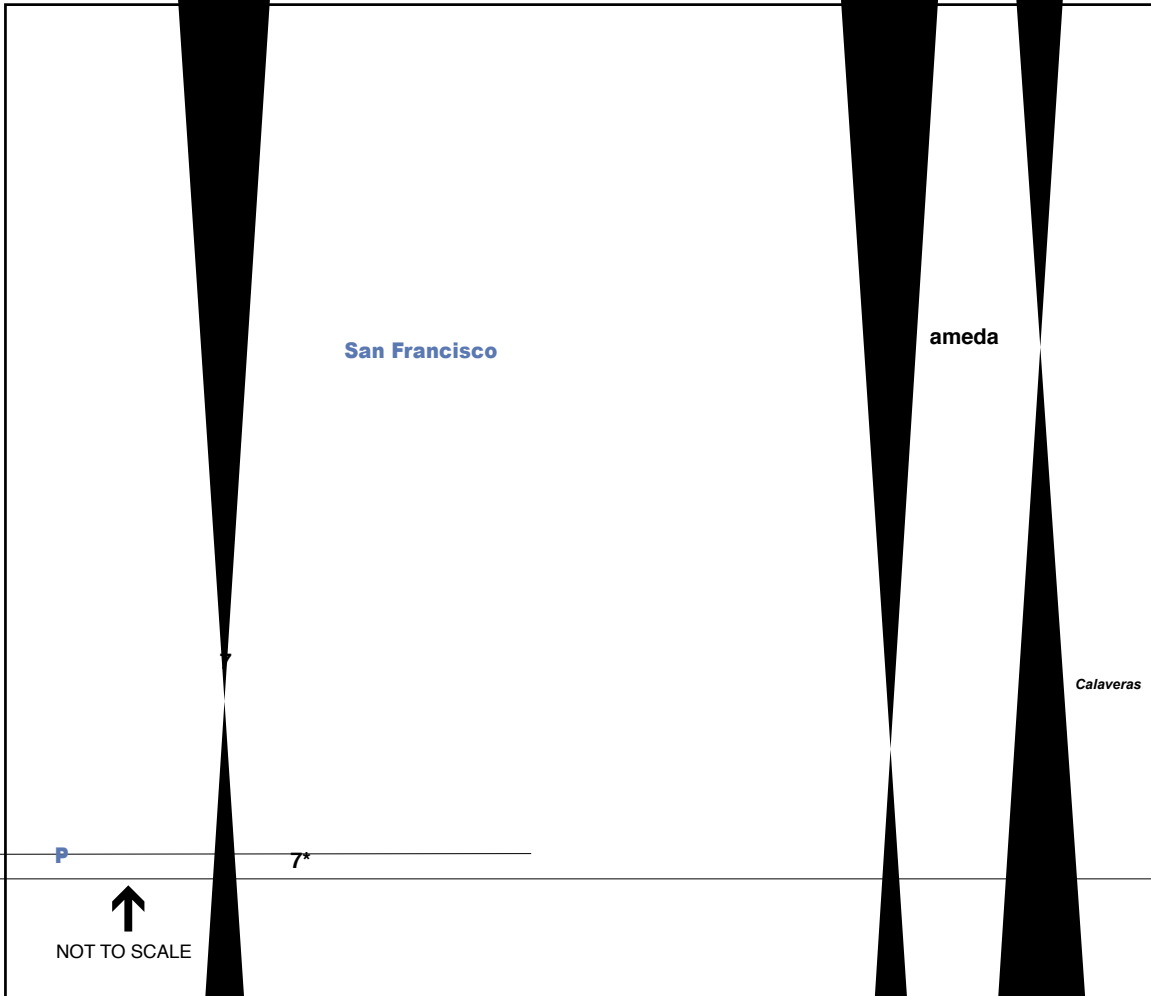
## 7.2 SFPUC Regional Water System: Customers and Water Demand Projections

### 7.2.1 SFPUC Service Area

The SFPUC serves retail customers in San Francisco and in Tuolumne County, and primarily wholesale customers in San Mateo, Santa Clara, and Alameda Counties (see Chapter 3, Program Description). **Figure 7.1** shows the SFPUC regional water service area, including the wholesale customers. **Figure 7.2** shows the city and county boundaries of the jurisdictions served by the wholesale customers. **Table 7.1** shows the jurisdictions served by the SFPUC's 27 wholesale customers.<sup>9</sup> Some of the water districts encompass more than one jurisdiction; Table 7.1 shows the percentage of the water district that is located within applicable jurisdictional boundaries. For about half the wholesale customers, the SFPUC is one of several sources of supply.<sup>10</sup>

<sup>9</sup> There are 27 wholesale customers, but California Water Service Company (CWS), which is counted as one customer, serves three distinct subgroups—Bear Gulch District, Mid-Peninsula District, and South San Francisco District—which are tracked separately in the SFPUC reports. One former wholesale customer, Los Trancos County Water District, which was purchased by CWS and is now part of the Bear Gulch District, is also tracked separately in most of the SFPUC reports. Therefore, Table 7.1 lists 30 rather than 27 wholesale customer entities.

<sup>10</sup> In 2001, the base year used for the demand projections, 14 of the 27 wholesale customers relied on other supply sources for at least some of their water (URS, 2004a).



**Legend**

(Wholesale customers and members of)

- |   |   |
|---|---|
| 1 Alameda County Water District             | 16 City of Millbrae                     |
| 2 City of Berkeley                          | 17 City of Milpitas                     |
| 3 City of Burlingame                        | 18 City of Mountain View                |
| 4 CWS – Bay Area                            | 19 North Coast Community Water District |
| 5 CWS – Mid-Peninsula                       | 20 City of Palo Alto                    |
| 6 CWS – South San Francisco                 | 21 Purissima Hill Water District        |
| 7 Coastside Community Water District        | 22 City of Redwood City                 |
| 8 City of Daly City                         | 23 City of San Bruno                    |
| 9 City of East Palo Alto                    | 24 City of San Jose North               |
| 10 Estero Municipal Improvement District    | 25 City of San Mateo                    |
| 11 Guadalupe Municipal Improvement District | 26 Skyline Community Water District     |
| 12 City of Hayward                          | 27 Stanford University                  |
| 13 Town of Hillsborough                     | 28 City of Sunnyvale                    |
| 14 City of Menlo Park                       | 29 Westborough Community District       |
| 15 Mid-Peninsula Water District             |   |

\* Portions of Coastside Community Water District served by the SFPUC Water Service Area

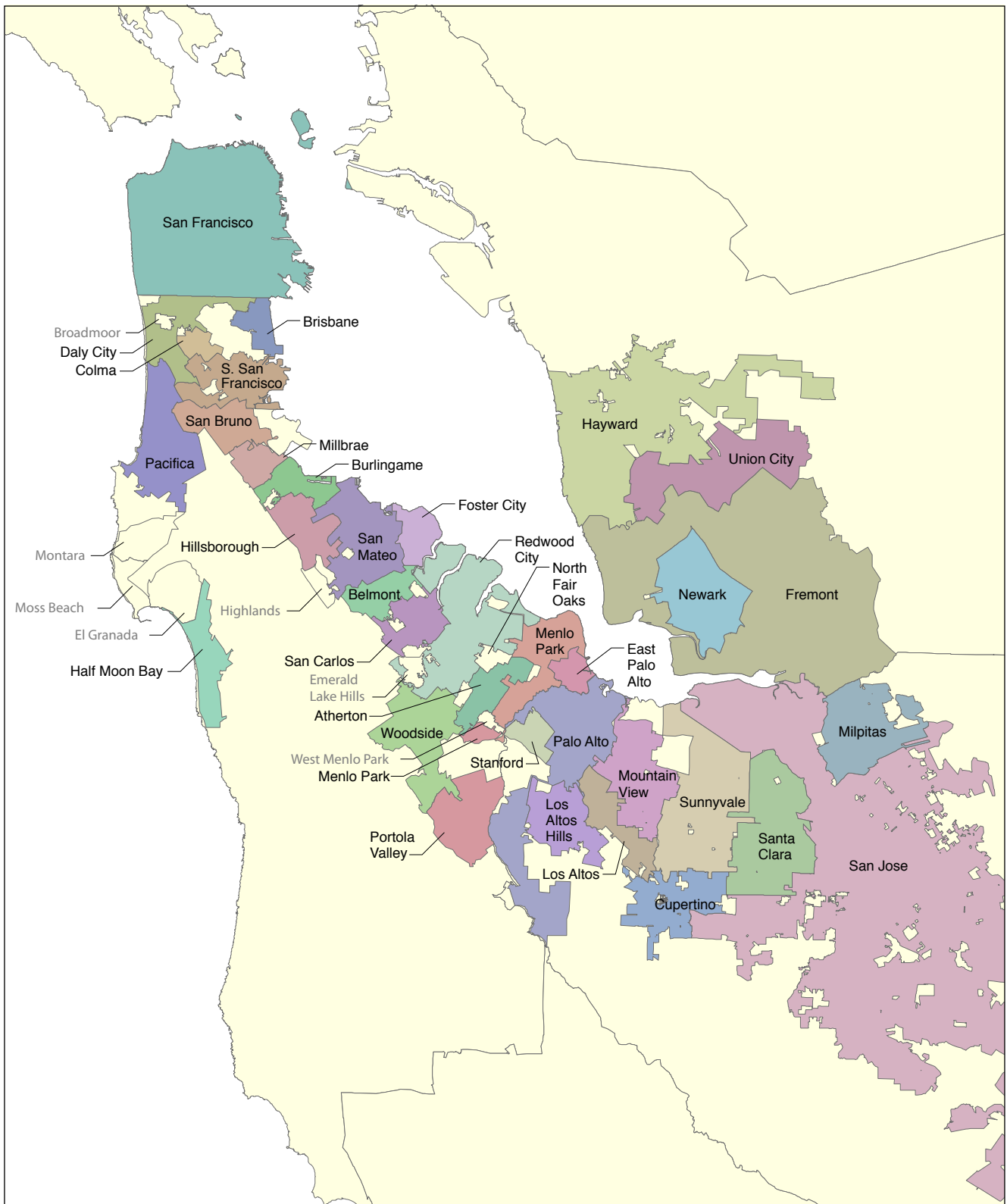
NOTE: For the purposes of this map, the California Water Service (CWS) Company is a single wholesale customer of several different water service districts.

SOURCE: BAWSCA, 2006a

SFPUC Water Service Area - 2003287

**(Revised)**

San Francisco and Alameda Counties Water Service Area - Wholesale Customers



SOURCE: US Census Bureau, 2005

SFPUC Water System Improvement Program Program EIR, Case No. 2005.0159E . 203287

**Figure 7.2**  
 City/County Jurisdictions Served by SFPUC  
 and Its Wholesale Customers

**TABLE 7.1  
JURISDICTIONS SERVED BY SFPUC WHOLESALE CUSTOMERS**

<b>Wholesale Customer</b>	<b>Jurisdictions Served (Percentage of Wholesale Customer Service Area in Jurisdictional Boundary [each totals 100%<sup>a</sup>])</b>
Alameda County Water District	Fremont (65%) Newark (14%) Union City (21%)
City of Brisbane	Brisbane (100%)
City of Burlingame	Burlingame (98%) Other Unincorporated San Mateo County (2%)
CWS–Bear Gulch District <sup>b</sup>	Atherton (11%) Menlo Park (28%) Portola Valley (6.7%) Woodside (6.6%) Other Unincorporated San Mateo County (47.7%)
CWS–Mid-Peninsula District <sup>b</sup>	San Mateo (77%) San Carlos (23%)
CWS–South San Francisco District <sup>b</sup>	South San Francisco (91%) Colma (2%) Daly City (0.1%) Other Unincorporated San Mateo County (7%)
Coastside County Water District	Half Moon Bay (65%) Half Moon Bay Unincorporated (35%)
City of Daly City	Daly City (100%)
City of East Palo Alto	East Palo Alto (100%)
Estero MID <sup>c</sup>	Foster City (90%) San Mateo (10%)
Guadalupe Valley MID <sup>c</sup>	Brisbane <sup>d</sup> (100%)
City of Hayward	Hayward (100%)
Town of Hillsborough	Hillsborough (100%)
Los Trancos County Water District <sup>e</sup>	Portola Valley (10%) Other Unincorporated Mateo County (90%)
City of Menlo Park	Menlo Park (100%)
Mid-Peninsula Water District	Belmont (95%) Other Unincorporated San Mateo County (4%) San Carlos (1%)
City of Millbrae	Millbrae (100%)
City of Milpitas	Milpitas (100%)
City of Mountain View	Mountain View (100%)
North Coast County Water District	Pacifica (98%) Other Unincorporated San Mateo County (2%)
City of Palo Alto	Palo Alto (100%)
Purissima Hills Water District	Los Altos Hills (96.8%) Other Unincorporated Santa Clara County (3.2%)
City of Redwood City	Redwood City (91%) San Carlos (0.1%) Woodside (5.9%) Other Unincorporated San Mateo County (3.3%)
City of San Bruno	San Bruno (98%) Other Unincorporated San Mateo County (2%)
City of San Jose (North)	San Jose (100%)
City of Santa Clara	Santa Clara (100%)
Skyline County Water District	Woodside (63.6%) Other Unincorporated San Mateo County (36.4%)
Stanford University	Not applicable <sup>f</sup>
City of Sunnyvale	Sunnyvale (100%)
Westborough Water District	South San Francisco (100%)

<sup>a</sup> Due to rounding, totals may not be exactly 100%.

<sup>b</sup> CWS = California Water Service Company.

<sup>c</sup> MID = Municipal Improvement District.

<sup>d</sup> Guadalupe Valley MID is within the city of Brisbane.

<sup>e</sup> Los Trancos County Water District was purchased by CWS and is now part of the CWS–Bear Gulch District. Jurisdictions served are shown here for informational purposes.

<sup>f</sup> The Stanford University water system serves the Stanford campus only, primarily the central campus, rather than any distinct jurisdictions. The central campus is located in unincorporated Santa Clara County adjacent to the city of Palo Alto.

SOURCE: URS, 2004a.

Because water demand is projected to remain constant from 2000 to 2030 for the generally small and discrete retail customers located outside San Francisco (e.g., Lawrence Livermore National Laboratory, the community of Sunol, and the Groveland Community Services District), this analysis assumes that the potential for the WSIP to induce growth in these areas is negligible; therefore, the analysis focuses on the program's growth-inducement potential in the Bay Area in the areas served by the SFPUC's wholesale customers and in San Francisco.

## **SFPUC Wholesale Customers' Master Sales Agreement**

As described in Chapter 2, Existing Regional Water System, the SFPUC holds contractual agreements with its wholesale customers. Wholesale water rates are set in accordance with the 1984 Settlement Agreement and Master Sales Water Contract (Master Sales Agreement) between the City and County of San Francisco and each of the wholesale customers (City and County of San Francisco, et al., 1984). The current master contract expires in 2009. Under the Master Sales Agreement, the City and County of San Francisco is required to supply up to 184 mgd (the "Supply Assurance") on an annual average basis to the wholesale customers collectively, subject to reductions in the event of a drought, water shortage, earthquake, or other natural disaster, and for rehabilitation and maintenance of the system. The agreement requires that wholesale customers employ best efforts to use all sources of water owned or controlled by them, including groundwater. The SFPUC and each of the wholesale customers, except for San Jose and Santa Clara, have negotiated individual supply assurance contracts (individual supply assurances) that cumulatively total 184 mgd. San Jose and Santa Clara do not have supply assurance contracts with the SFPUC.

In general, the individual supply assurances specify the amount of water a customer is entitled to purchase from the SFPUC according to a multi-step formula and multi-step vesting process. The contracts with Hayward and the Estero Municipal Improvement District (Estero MID) are exceptions to this type of contract, as they do not specify a quantified limit on purchases from the SFPUC. A specified amount of the total 184 mgd is set aside for growth in consumption by Hayward and Estero MID.<sup>11</sup> If the combined usage by Hayward and Estero MID exceeds this amount, the Master Sales Agreement provides a method for proportional reduction in the other water customers' supply guarantee (Bay Area Water Users Association [BAWUA], 1993; BAWSCA, 2006b).

The individual supply assurances for the wholesale customers under the current Master Sales Agreement are shown in Appendix E, Section E.1. Of the 23 wholesale customers that have individual supply assurance contracts with a specified quantity, 12 submitted 2030 purchase estimates (discussed in Section 7.2.2, below) that exceed their current individual supply assurance, while 11 submitted purchase estimates that are less than or equal to their current individual supply assurance. Consistent with CEQA requirements, the existing base year (2001) demand, not the supply assurances, is considered the baseline for the analysis presented in this

<sup>11</sup> A 1993 memorandum from BAWSCA (then BAWUA) to its member agencies regarding allocation of the supply assurance indicated that the combined usage for Hayward and Estero MID at the time was 21.782 mgd, and that an additional 6.2 mgd was set aside to allow for growth in Hayward and Estero MID consumption (BAWUA, 1993) for a total of 28 mgd. The current BAWSCA annual survey (BAWSCA, 2006b) shows combined usage in FY 2004/2005 of 24.10 mgd for Hayward and Estero MID and a reserve amount of 3.9 mgd (equaling the same combined amount allocated for Hayward and Estero MID (28 mgd) as in the 1993 memorandum).

chapter. The information on current supply assurances is presented for informational purposes. BAWSCA estimates that, excluding Santa Clara and San Jose (which, as noted, do not have supply assurance contracts), wholesale customer purchases from the SFPUC will approach the current 184 mgd wholesale customer supply assurance by about 2020, and that, including San Jose and Santa Clara, purchases from the SFPUC will approach 184 mgd by about 2008 (BAWSCA, 2006b).

## 7.2.2 Demand Projections

Future water demand projections for both retail and wholesale customers were developed using end-use demand models that break down total water use, by water service account, to specific end uses such as toilets, faucets, and irrigation. Projections for the wholesale service area were developed in close consultation with the wholesale customers, who provided critical inputs to the demand model – including selection of the source of population and employment projections to be used – and subsequently submitted statements concurring with the demand projections. Most (about two-thirds) of the customers selected ABAG’s *Projections 2002* as the source of population projections used in their demand model;<sup>12</sup> other customers selected the BAWSCA annual survey, urban water management plans, or city planning sources for growth projections. Projections for San Francisco were developed based on information provided by the San Francisco Planning Department.

To develop yearly projections to 2030, the population and employment increase for each five- or ten-year increment was divided evenly and applied yearly throughout the five- or ten-year period to form a linear yearly projection between increments. The selected projections were then input into the demand model, which applied the growth rate from the selected projection to growth in the applicable water customer accounts. In general, population projections were used as the source of growth rates for residential, institutional, and other miscellaneous water accounts and employment projections were applied to commercial and industrial accounts.

**Table 7.2** shows the 2030 water demand projections for the SFPUC wholesale and retail service area. The 2030 demand projections take into account expected growth in population and employment, the influence of plumbing codes (which include water efficiency requirements), and assumptions about rates of water fixture replacement. Thus, the 2030 demand projections factor in some “passive” water savings due to plumbing code changes, as well as the effects of conservation savings accrued prior to the base year. As part of WSIP planning, the SFPUC also undertook studies to determine the potential for continuation of existing conservation programs as well as additional conservation programs and recycled water projects that could be implemented to offset demand for potable water supplies. These studies, and the wholesale and retail service area demand studies, are described in detail in Appendix E, Section E.2.

<sup>12</sup> Because *Projections 2002* provides forecasts only to 2025, population and employment projections for 2025-2030 were estimated using the 2020-2025 population/employment growth rate, which was applied to the 2025 estimate and carried forward linearly at that rate to 2030.

**TABLE 7.2  
SUMMARY OF 2030 DEMAND PROJECTIONS, WATER SUPPLY ASSUMPTIONS, AND SFPUC PURCHASE ESTIMATES**

Customer	A	B	C	D	E	F	G	H	I	J
	2030 Projected Demand (with Plumbing Code Savings) (mgd <sup>a</sup> )	2030 Projected Conservation Savings (mgd <sup>a</sup> )	2030 Demand Adjusted for Conservation (mgd <sup>a</sup> )	2030 Projected Use of Recycled Water (mgd <sup>a</sup> )	2030 Projected Use of Ground-water Sources (mgd <sup>a</sup> )	2030 Projected Use of Other Surface Water Sources (mgd <sup>a</sup> )	2030 Projected Demand Adjusted for Use of Other Sources and Conservation (mgd <sup>a</sup> )	2030 Purchase Estimates (mgd <sup>a</sup> )	Percent of Total 2030 Demand (with Plumbing Code Savings) met by SFPUC Purchases	Percent of 2030 Demand Adjusted for Conservation met by SFPUC Purchases
	(A - B)		(C - D - E - F)						(H/A)	(H/C)
Alameda County Water District	59.3	3.16	56.14	1.40	13.98	27.00	13.76	13.76	23%	25%
City of Brisbane	0.93	0.04	0.89				0.89	0.89	96%	100%
City of Burlingame	4.9	0.20	4.7				4.70	4.70	96%	100%
CWS-Bear Gulch District <sup>b,c</sup>	14.06	0.93	13.13			1.37	11.76	11.76	84%	90%
CWS-Mid-Peninsula District <sup>b</sup>	18.1	0.86	17.24				17.24	17.24	95%	100%
CWS-South San Francisco District <sup>d</sup>	9.9	0.56	9.34		1.37		7.97	7.97	81%	85%
Coastside County Water District <sup>d</sup>	3.2	0.18	3.02		0 - 0.30	0 - 0.48	2.24 - 3.02	2.24 - 3.02	70 - 94%	74 - 100%
City of Daly City <sup>e</sup>	9.1	0.44	8.66		1.34 - 3.76		4.90 - 7.32	4.90 - 7.32	54 - 80%	57 - 85%
City of East Palo Alto	4.8	0.16	4.64				4.64	4.64	97%	100%
Estero MID <sup>f</sup>	6.8	0.00 - 0.60	6.2 - 6.8				6.20 - 6.80	6.20 - 6.80	91 - 100%	100%
Guadalupe Valley MID <sup>f</sup>	0.81	0.10	0.71				0.71	0.71	88%	100%
City of Hayward	28.7	0.76	27.95				27.95	27.95	97%	100%
Town of Hillsborough	3.9	0.20	3.7				3.70	3.70	95%	100%
City of Menlo Park	4.7	0.16	4.54				4.54	4.54	97%	100%
Mid-Peninsula Water District	3.8	0.10	3.70				3.70	3.70	97%	100%
City of Millbrae <sup>g</sup>	3.3	0.08 - 0.11	3.19 - 3.27				3.19 - 3.22	3.19	97%	99 - 100%
City of Milpitas	17.7	0.61	17.09	1.77		7.13	8.19	8.20	46%	48%
City of Mountain View	14.8	0.24 - 1.21	13.59 - 14.56		0.05	1.30	12.24 - 13.21	13.20	89%	91 - 97%
North Coast County Water District	3.8	0.00 - 0.19	3.62 - 3.80				3.62 - 3.80	3.61 - 3.80	95 - 100%	100%
City of Palo Alto <sup>h</sup>	14.4	0.60	13.76	0.76			13.00	13.00	91%	94%
Purissima Hills Water District	3.3	0.08	3.22				3.22	3.22	98%	100%
City of Redwood City <sup>i</sup>	13.4	0.59 - 1.02	12.38 - 12.81	0 - 1.00			11.38 - 12.81	11.60 - 12.60	87 - 94%	94 - 98%
City of San Bruno	4.5	0.19	4.32				4.32	4.30	96%	100%
City of San Jose (North) <sup>j</sup>	6.5	0.16	6.34				6.34	6.34	98%	100%
City of Santa Clara	33.9	1.00	32.90	4.00	19.99	4.00	4.91	4.90	14%	15%
Skyline County Water District	0.31	0.01	0.30				0.30	0.30	97%	100%
Stanford University	6.8	0.70	6.10			1.90	4.20	4.20	62%	69%
City of Sunnyvale	26.8	0.70	26.10	1.50	2.60	9.90	12.10	12.10	45%	46%
Westborough Water District <sup>k</sup>	1.03	see note k	1.03				1.03	1.03	100%	100%
<b>Total, Wholesale Service Area</b>	<b>324</b>	<b>13 - 15</b>	<b>308 - 311</b>	<b>9.4 - 10.4</b>	<b>39.3 - 42.1</b>	<b>52.6 - 53.1</b>	<b>203 - 209</b>	<b>204 - 209</b>	<b>63 - 65%</b>	<b>66 - 67%</b>
<b>SFPUC Retail Service Area<sup>l</sup></b>	<b>93.4</b>	<b>0 - 4</b>	<b>89.4 - 93.4</b>	<b>0 - 4</b>	<b>2.5 - 4.5</b>	<b>0</b>	<b>81 - 91</b>	<b>80 - 91</b>	<b>86 - 97%</b>	<b>89 - 97%</b>
<b>TOTAL</b>	<b>417</b>	<b>13 - 19</b>	<b>398 - 404</b>	<b>9.4 - 14.4</b>	<b>41.8 - 46.6</b>	<b>52.6 - 53.1</b>	<b>284 - 300</b>	<b>284 - 300</b>	<b>68 - 72%</b>	<b>71 - 74%</b>

NOTE: Numbers may not sum due to rounding.

- <sup>a</sup> mgd = million gallons per day.
- <sup>b</sup> CWS = California Water Service Company.
- <sup>c</sup> CWS-Bear Gulch District includes the former Los Trancos County Water District.
- <sup>d</sup> The upper range purchase estimate assumes loss of all local water sources (surface water and groundwater) and the lower range estimate assumes continuation of local sources; both estimates assume Level B water conservation.
- <sup>e</sup> The purchase estimate range reflects a range of potential groundwater usage established under a pilot project, from the sustainable yield (3.76 mgd) to the lowest annual production yield (1.34 mgd), according to Daly City's best estimate of 2030 water purchases (SFPUC, 2004).
- <sup>f</sup> MID = Municipal Improvement District.
- <sup>g</sup> 2030 conservation savings is based on URS 2004c and the City's UWMP as confirmed by the City (Popp, 2007).
- <sup>h</sup> 2030 demand and conservation savings are based on information provided by the City of Palo Alto to the SFPUC (City of Palo Alto, 2005a).
- <sup>i</sup> In November 2005, Redwood City informed the SFPUC that it would be purchasing its low-range estimate of 11.6 mgd due to anticipated implementation of 1 mgd of recycled water in 2030 (City of Redwood City, 2005a). The high-range purchase estimate total of 300 mgd published in URS 2004b remains the SFPUC 2030 purchase estimate total for planning purposes, to be consistent with the previous and ongoing WSIP studies. The purchase estimate range originally submitted apparently reflects the average of the City's estimated conservation savings range plus the originally estimated range of recycled water use.
- <sup>j</sup> Portion of north San Jose only.
- <sup>k</sup> Demand and purchase estimates are based on Westborough Water District's 2005 UWMP, as requested by the District in a letter to the SFPUC (Westborough Water District, 2007). The UWMP discusses ongoing and planned future demand management programs but does not quantify conservation savings in relation to the demand and purchase estimate. The District's original estimate of water purchases indicated conservation savings of 0.020 mgd (SFPUC 2004).
- <sup>l</sup> The low range of the SFPUC retail customer purchase estimate reflects the identified groundwater, recycled water, and conservation programs totaling 10 mgd in San Francisco that are included as part of the WSIP proposed water supply option.

SOURCES: URS, 2004a; URS, 2004b; URS, 2004c; URS, 2006; SFPUC, 2004; SFPUC, 2007; City of Palo Alto, 2005a; Popp, 2007; City of Redwood City, 2005a; Westborough Water District, 2005 ; Westborough Water District 2007.



## 2030 Purchase Estimates

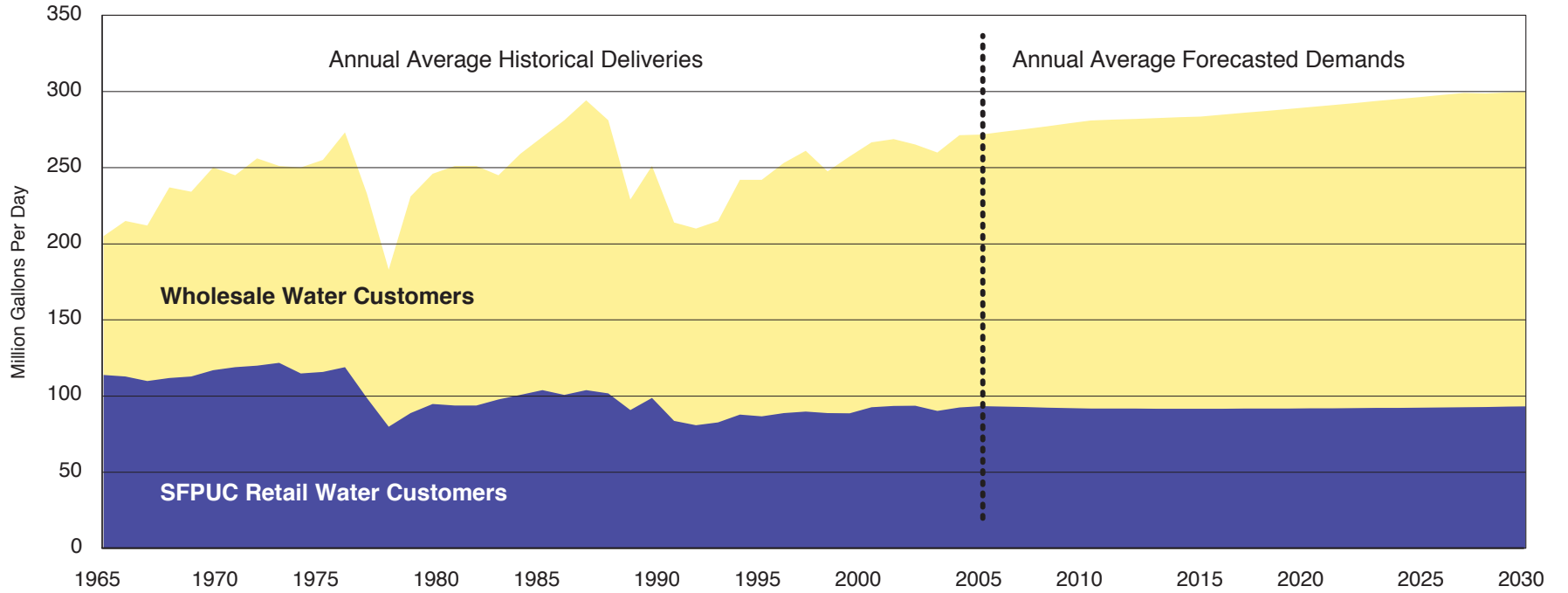
Each wholesale customer is responsible for its own water management planning decisions and for determining the percentage of its future water demand that it desires to meet with SFPUC supplies. Following completion of 2030 demand modeling and the conservation potential and recycled water potential studies, the wholesale customers considered conservation potential and other water supply sources and submitted purchase estimates for SFPUC water for 2030 (URS, 2004b). The purchase estimates include the effects of continuing current conservation programs and additional conservation programs that the SFPUC and/or its wholesale customers plan to implement, as well as the use of recycled water and other supply sources (see Table 7.2). Conservation and demand management programs are an integral component of water suppliers' supply portfolio, as shown in Table 7.2. Table 7.2 shows the percentage of total 2030 demand met by purchases from the SFPUC for each customer and also shows the percentage of all "physical" water supply sources (including recycled water) met by SFPUC purchases (i.e., the percentage of demand after conservation savings are taken into account). As shown, purchases from the SFPUC in 2030 of 300 mgd represent approximately 72 percent of the total SFPUC service area demand (with plumbing code savings) and about 74 percent of demand adjusted for additional conservation.<sup>13</sup> **Figure 7.3** depicts historical water deliveries for the wholesale and retail service areas as well as the projected demand on the SFPUC system (i.e., estimated purchases) to 2030.

## Change in Water Demand and Purchases from Base Year

**Table 7.3** shows the base-year demand estimates for each wholesale customer and the retail service area (2001 and 2000, respectively), the 2000/2001 purchases from the SFPUC, and the change in demand and purchases forecasted for 2030. The base-year demand estimate is based on actual consumption data (adjusted for unaccounted-for water<sup>14</sup>) and therefore reflects the effects of conservation programs implemented to date. As Table 7.3 shows, overall customer demand (wholesale and retail customers) in the service area is expected to increase by about 51 mgd in 2030 and purchases from the SFPUC regional water system are expected to increase by about 24-39 mgd from the base year 2000/2001. As shown in the table, essentially no change is projected in total demand for the SFPUC retail service area, which is predominantly the City and County of San Francisco. For purposes of planning future 2030 water delivery requirements for the regional system, the SFPUC selected the high range purchase estimates of 300 mgd as the target goal for the average annual water delivery by 2030. This is an increase of approximately 39 mgd from the 2001 deliveries and 35 mgd from the current normal-year average annual demand estimates.

<sup>13</sup> The demand studies also calculated the effects of plumbing codes (which include efficiency requirements) on water savings, and found that a total savings of 35.7 mgd is expected to be achieved in 2030 as a result of plumbing code requirements. Table E.2.4 in Appendix E.2 shows 2030 plumbing code savings for the retail service area and each wholesale customer.

<sup>14</sup> Unaccounted-for water refers to the difference between total water produced in a system and total water billed to customers (i.e., water consumed). Unaccounted-for water includes water delivery system leaks, water not billed or tracked in the system, such as water used for fire fighting and system flushing, and any unauthorized use.



SOURCE: SFPUC, 2005

SFPUC Water System Improvement Program . 203287

**Figure 7.3**

Total SFPUC Water System Demands:  
Historical and Projected Water Purchases

**TABLE 7.3  
SUMMARY OF BASE-YEAR AND PROJECTED 2030 DEMAND AND PURCHASE ESTIMATES**

Customer	Base-Year (2001) Demand Estimate (mgd <sup>a</sup> ) <sup>b</sup>	Fiscal Year 2001/2002 Purchases from the SFPUC (mgd <sup>a</sup> )	Percent of 2001 Demand Met by Purchases from the SFPUC <sup>c</sup>	2030 Projected Demand (with Plumbing Code) (mgd <sup>a</sup> )	Projected Change in Demand from 2001 (mgd <sup>a</sup> )	Projected Percent Change in Demand from 2001	2030 Purchase Estimates (mgd <sup>a</sup> )	Change in Water Purchases from the SFPUC 2001-2030 (mgd <sup>a</sup> )	Percent Change in Purchases 2001-2030 (mgd <sup>a</sup> )
Alameda County Water District	51.1	11.99	24.3%	59.3	8.20	16%	13.76	1.77	15%
City of Brisbane	0.44	0.39	100%	0.93	0.49	111%	0.89	0.50	128%
City of Burlingame	4.8	4.64	100%	4.9	0.12	3%	4.70	0.06	1%
CWS-Bear Gulch District <sup>d</sup>	13.4	11.12	90.6%	13.9	0.48	4%	11.60	0.48	4%
CWS-Mid-Peninsula District <sup>d</sup>	17.2	16.75	100%	18.1	0.94	5%	17.24	0.49	3%
CWS-South San Francisco District <sup>d</sup>	8.9	7.56	88.9%	9.9	1.00	11%	7.97	0.41	5%
Coastside County Water District	2.6	1.8	70.3%	3.2	0.63	25%	2.24 - 3.02	0.44 - 1.22	24 - 68%
City of Daly City	8.7	5.08	63.6%	9.1	0.44	5%	4.90 - 7.32	-0.18 - 2.24	-4 - 44%
City of East Palo Alto	2.5	2.04	100%	4.8	2.30	92%	4.64	2.60	127%
Estero MID <sup>e</sup>	5.8	5.62	100%	6.8	0.98	17%	6.20 - 6.80	0.58 - 1.18	10 - 21%
Guadalupe Valley MID <sup>e</sup>	0.32	0.3	100%	0.81	0.49	153%	0.71	0.41	138%
City of Hayward	19.3	17.61	100%	28.7	9.40	49%	27.95	10.34	59%
Town of Hillsborough	3.7	3.56	100%	3.9	0.20	5%	3.70	0.14	4%
Los Trancos County Water District <sup>f</sup>	0.11	0.11	100%	0.14	0.03	32%	0.16	0.05	45%
City of Menlo Park	4.1	3.57	96%	4.7	0.61	15%	4.54	0.97	27%
Mid-Peninsula Water District	3.7	3.46	100%	3.8	0.15	4%	3.70	0.24	7%
City of Millbrae	3.1	2.47	100%	3.3	0.17	5%	3.19	0.72	29%
City of Milpitas	12.0	6.83	59.3%	17.7	5.74	48%	8.20	1.37	20%
City of Mountain View	13.3	10.97	89.4%	14.8	1.53	12%	13.20	2.23	20%
North Coast County Water District	3.6	3.45	100%	3.8	0.17	5%	3.61 - 3.80	0.16 - 0.35	5 - 10%
City of Palo Alto <sup>g</sup>	14.2	13.19	99.4%	14.4	0.20	1%	13.00	-0.19	-1%
Purissima Hills Water District	2.2	2.2	100%	3.3	1.12	51%	3.22	1.02	46%
City of Redwood City <sup>h</sup>	11.9	11.64	100%	13.4	1.54	13%	11.60 - 12.60	-0.04 - 0.96	0 - 8%
City of San Bruno	4.4	2.7	64.4%	4.5	0.07	2%	4.30	1.60	59%
City of San Jose (North) <sup>i</sup>	5.2	4.42	96%	6.5	1.31	25%	6.34	1.92	43%
City of Santa Clara	25.8	3.84	16.2%	33.9	8.10	31%	4.90	1.06	28%
Skyline County Water District	0.17	0.17	100%	0.31	0.14	82%	0.30	0.13	76%
Stanford University	3.9	2.36	68%	6.8	2.94	76%	4.20	1.84	78%
City of Sunnyvale	24.8	9.69	43.6%	26.8	1.99	8%	12.10	2.41	25%
Westborough Water District <sup>j</sup>	1.02	1.02	100%	1.03	0.01	1%	1.03	0.01	1%
<b>Total, Wholesale Service Area</b>	<b>272</b>	<b>171</b>	<b>63%</b>	<b>324</b>	<b>52</b>	<b>19%</b>	<b>204 - 209</b>	<b>34 - 38</b>	<b>20 - 23%</b>
<b>SFPUC Retail Service Area</b>	<b>93.6</b>	<b>90</b>	<b>96%</b>	<b>93.4</b>	<b>-0.2</b>	<b>-0.2%</b>	<b>80 - 91</b>	<b>-10 - 1</b>	<b>-11 - 1%</b>
<b>TOTAL</b>	<b>366</b>	<b>261</b>	<b>71%</b>	<b>417</b>	<b>51</b>	<b>14%</b>	<b>284 - 300</b>	<b>24 - 39</b>	<b>9 - 15%</b>

NOTE: Numbers may not sum due to rounding.

<sup>a</sup> mgd = million gallons per day.<sup>b</sup> Demand estimates shown here include unaccounted-for water, which is the difference between total water produced and total water billed to customers (water consumed). Unaccounted-for water includes fire fighting use, maintenance requirements, system flushing, leaks, and any unauthorized use.<sup>c</sup> Based on URS 2004b.<sup>d</sup> CWS = California Water Service Company.<sup>e</sup> MID = Municipal Improvement District.<sup>f</sup> The former Los Trancos County Water District is now part of CWS-Bear Gulch District; information presented here reflects information in background reports (URS, 2004a, 2004b).<sup>g</sup> 2030 demand is based on information provided by the City of Palo Alto to the SFPUC (City of Palo Alto, 2005a).<sup>h</sup> In November 2005, Redwood City informed the SFPUC that it would be purchasing its low range estimate of 11.6 mgd due to anticipated implementation of 1 mgd of recycled water in 2030 (City of Redwood City, 2005a).<sup>i</sup> The high-range purchase estimate total published in URS 2004b of 300 mgd remains the SFPUC 2030 purchase estimate for planning purposes to be consistent with the previous and ongoing WSIP studies.<sup>j</sup> Portion of north San Jose only.<sup>k</sup> Demand and purchase estimates are based on Westborough Water District's 2005 UWMP, as requested by the district in a letter to the SFPUC (Westborough Water District, 2007). Base year demand shown here is based on 2001 total water production presented in the UWMP (which is equal to 2001-02 purchases from the SFPUC).

SOURCES: URS, 2004a; URS, 2004b; URS, 2006, City of Palo Alto, 2005a; City of Redwood City, 2005a, Westborough Water District, 2005; Westborough Water District 2007.

## 7.3 Growth Inducement Analysis

As discussed in the approach to analysis, above, evaluation of the WSIP's growth-inducing impacts involves considering whether the growth that would be supported by implementation of the WSIP is planned growth, anticipated by the land use planning agencies in the areas served by SFPUC water and reflected in their adopted general plans. This section compares the population and employment projections used in the water demand models (referred to herein as customer-selected projections) with the population and employment projections of the regional planning agency, ABAG, and the projections in the general plans (or related land use planning documents) of cities in the service area. The water customers' UWMPs (which have been prepared since the demand studies for the wholesale and retail service areas [URS, 2004a, Hannaford and Hydroconsult, 2004] were completed) are also compared with the population projections used in the demand model. These comparisons establish whether the employment and population growth that the SFPUC and its water customers used as a basis to derive their water demand projections is also forecasted by ABAG and anticipated by local jurisdictions in their general plans. The major conclusions of these comparisons are summarized in Section 7.1, above.

### 7.3.1 Analysis Assumptions

#### Use of Demand Model Population and Employment Assumptions

While the 2030 water demand projections are based on projected growth in residential and non-residential water accounts and cannot be directly correlated to demographic projections (because they include various customer-specific model inputs and adjustments), the customer-selected population and employment projections provide a basis of comparison with other growth forecasts for the area. The projections of employment and population selected by the wholesale customers and the SFPUC as the basis for growth in water accounts and future water demand are shown in **Table 7.4** and summarized by county in **Table 7.5**. Wholesale customers are sorted by county to facilitate the analysis of consistency of these projections with ABAG's projections.

#### Geographic Areas

ABAG projections are published for cities and their planning areas and for unincorporated county areas. The boundaries of most of the water customer service areas are not congruent with city boundaries (as shown in Table 7.1). Therefore, in order to evaluate the consistency of the customer-selected projections with ABAG projections, the ABAG city and county jurisdiction information had to be made to "fit" the wholesale customer service area boundaries. For purposes of comparing population and employment projections this analysis uses the following assumptions about the correspondence between wholesale customers' service areas and "ABAG jurisdictions."<sup>15</sup> Because there is no "perfect fit" between the wholesale customer service area

<sup>15</sup> For this analysis, ABAG's projections for subregional study areas, rather than projections for the cities as defined by their corporate limits, were used. The subregional study areas include the named incorporated city and any adjacent unincorporated area within the city's planning area.

**TABLE 7.4  
EMPLOYMENT AND POPULATION PROJECTIONS USED FOR WATER DEMAND ESTIMATES<sup>a</sup>**

	Employment			Population		
	2001	2030	% Change	2001	2030	% Change
<b>Alameda County</b>						
Alameda County Water District	151,092	221,858	46.8%	316,523	379,931	20.0%
Hayward	87,473	113,843	30.1%	140,439	162,757	15.9%
<b>Santa Clara County</b>						
Milpitas	53,566	76,129	42.1%	62,756	88,841	41.6%
Mountain View	75,629	95,669	26.5%	71,160	81,670	14.8%
Palo Alto	105,432	114,224	8.3%	59,954	69,199	15.4%
Purissima Hills Water District	420	457	8.8%	6,032	6,763	12.1%
San Jose (North)	2,500	3,353	34.1%	11,098	13,686	23.3%
Santa Clara	138,163	177,027	28.1%	104,349	140,698	34.8%
Stanford University	na	na	na	19,738	27,924	41.5%
Sunnyvale	125,476	168,950	34.6%	131,365	151,610	15.4%
<b>San Mateo County</b>						
Brisbane	3,789	19,575	416.6%	3,174	4,606	45.1%
Burlingame	31,205	36,160	15.9%	30,154	34,967	16.0%
CWS – Bear Gulch District <sup>b</sup>	42,899	47,774	11.4%	66,197	73,719	11.4%
CWS – Mid-Peninsula District <sup>b</sup>	79,493	100,568	26.5%	120,856	139,834	15.7%
CWS – South San Francisco District <sup>b</sup>	49,288	62,344	26.5%	49,207	59,584	21.1%
Coastside County Water District	5,402	6,795	25.8%	18,319	24,973	36.3%
Daly City	26,941	33,981	26.1%	106,117	115,651	9.0%
East Palo Alto	3,289	8,673	163.7%	24,395	32,712	34.1%
Estero MID <sup>c</sup>	24,318	31,840	30.9%	34,568	40,096	16.0%
Guadalupe Valley MID <sup>c</sup>	4,442	5,668	27.6%	446	1,558	249.3%
Hillsborough	1,216	1,380	13.5%	11,618	12,708	9.4%
Los Trancos County Water District <sup>d</sup>	na	na	na	740	1,094	47.8%
Menlo Park	10,053	13,287	32.2%	12,153	13,655	12.4%
Mid-Peninsula Water District	14,705	22,221	51.1%	26,443	27,997	5.9%
Millbrae	6,664	8,009	20.2%	21,460	25,174	17.3%
North Coast County Water District	5,797	7,478	29.0%	40,457	47,829	18.2%
Redwood City	66,389	83,678	26.0%	81,888	93,535	14.2%
San Bruno	16,622	25,770	55.0%	40,727	48,229	18.4%
Skyline County Water District	224	224	0.0%	1,210	2,683	121.7%
Westborough Water District <sup>e</sup>	1,610	1,631	1.3%	13,056	14,300	9.5%
<b>Total Wholesale Customers</b>	<b>1,134,097</b>	<b>1,488,566</b>	<b>31.3%</b>	<b>1,626,599</b>	<b>1,937,983</b>	<b>19.1%</b>
<b>San Francisco<sup>f</sup></b>	<b>638,840</b>	<b>795,400</b>	<b>24.5%</b>	<b>760,075</b>	<b>849,942</b>	<b>11.8%</b>
<b>Total Area Served</b>	<b>1,772,937</b>	<b>2,283,966</b>	<b>28.8%</b>	<b>2,386,674</b>	<b>2,787,925</b>	<b>16.8%</b>

<sup>a</sup> For all customers, a variable annual growth rate for population and employment was established for use in the model, based on annual interpolations from 5 or 10-year incremental demographic projections published by the selected projection sources.

<sup>b</sup> CWS = California Water Service Company.

<sup>c</sup> MID = Municipal Improvement District.

<sup>d</sup> The former Los Trancos County Water District is now part of CWS–Bear Gulch District; information presented here reflects information in background reports.

<sup>e</sup> Population estimates from Westborough Water District's 2005 Urban Water Management Plan.

<sup>f</sup> Estimates for 2001 for San Francisco were interpolated linearly for the PEIR analysis from estimates for 2000 and 2005 presented in the SFPUC technical memorandum (Hannaford and Hydroconsult, 2004).

SOURCE: Hannaford and Hydroconsult, 2004; URS, 2004a; Westborough Water District, 2005; Mundie & Associates, 2006.

**TABLE 7.5  
EMPLOYMENT AND POPULATION PROJECTIONS USED FOR WATER DEMAND ESTIMATES:  
SUMMARY BY COUNTY<sup>a</sup>**

	Employment			Population		
	2001	2030	% change	2001	2030	% change
<b>Wholesale Customers</b>						
Alameda County	238,565	335,701	41%	456,962	542,688	19%
Santa Clara County	501,186	635,809	27%	466,452	580,391	24%
San Mateo County <sup>b</sup>	394,346	517,056	31%	703,185	814,904	16%
<b>Total Wholesale Customers</b>	<b>1,134,097</b>	<b>1,488,566</b>	<b>31%</b>	<b>1,626,599</b>	<b>1,937,983</b>	<b>19%</b>
<b>Retail Customers</b>						
San Francisco (City and County) <sup>c</sup>	638,840	795,400	25%	760,075	849,942	12%
<b>Total</b>	<b>1,772,937</b>	<b>2,283,966</b>	<b>29%</b>	<b>2,386,674</b>	<b>2,787,925</b>	<b>17%</b>

<sup>a</sup> Figures shown by county are the projections used in demand modeling for the water customers in that county, not the county as a whole. (The SFPUC serves a limited portion of Alameda County and Santa Clara County, which are predominately served by East Bay Municipal Utilities District and Santa Clara Valley Water District, respectively.)

<sup>b</sup> Population estimates for San Mateo County include updated figures for Westborough Water District from its Urban Water Management Plan.

<sup>c</sup> Estimates for 2001 for San Francisco interpolated linearly for the PEIR analysis from estimates for 2000 and 2005 presented in the SFPUC technical memorandum (Hannaford and Hydroconsult, 2004).

SOURCES: Hannaford and Hydroconsult, 2004; URS, 2004a; Westborough Water District, 2005; Mundie & Associates, 2006.

boundaries and the ABAG city and county jurisdiction boundaries, the population and employment projections will differ somewhat simply as a result of this imperfect geographic fit.

- Wholesale customers that serve most or all of one or more cities are assumed to correspond to those cities.
- Wholesale customers that serve most or all of a city plus smaller portions (i.e., less than half) of other cities and any unincorporated county areas are assumed to correspond only to the cities they serve most or all of.
- ABAG does not provide separate or segregable projections for most unincorporated county areas. Therefore, unincorporated areas served by wholesale customers are not captured in the correspondence established for this analysis. (The exception to this is unincorporated Half Moon Bay, for which ABAG provides separate projections and which is assumed, along with the incorporated city, to correspond to the Coastside County Water District service area).<sup>16</sup>

Refer to Appendix E, Section E.3 (Table E.3.A.2 of Attachment E.3.A) for the list of ABAG jurisdictions assumed in this analysis to correspond to respective water customer service areas and vice versa. The same correspondence between service areas and cities is also assumed for the comparison of water customer-selected projections with growth projections in the general plans of jurisdictions in the SFPUC service area.

<sup>16</sup> Because this analysis uses ABAG's subregional study area projections, the projections may include population and employment forecasts for some portion of the unincorporated areas within a wholesale customer's service area. However, it is not known whether, or the degree to which, the unincorporated areas served by a wholesale customer encompass the same geography as the unincorporated areas within the corresponding ABAG subregional study area. With the exception of unincorporated Half Moon Bay, unincorporated areas are identified as "nonsegregable unincorporated areas" in Table E.3.A.1 of Appendix E (Section E.3, Attachment E.3.A) and are assumed not to be captured in the correspondence established for this analysis.

## Time Periods

The base year for the wholesale water customers' projections is 2001 and the base year for the retail customer's (i.e., San Francisco's) projections is 2000. Projections for both the wholesale customers and San Francisco extend through 2030. ABAG projections are provided in five-year intervals (for the first year of each decade as well as mid-decade); *Projections 2003* and *Projections 2005* provide forecasts through 2030, but *Projections 2002* extends only through 2025.

To establish a consistent time period for comparison in this PEIR analysis, the customer-selected projections from the respective base years (2000 and 2001) through 2030 presented in the SFPUC's published demand studies were interpolated to establish estimates for 2005 and 2025. An estimate for 2001 was interpolated for the retail service area, from the 2000 base year population and employment estimates, to establish a consistent base year. The years 2005, 2025, and 2030 were then used to evaluate consistency between the customer projections and the ABAG projections. The base year estimates for 2001 and projections for 2005, 2025, and 2030 are shown in Appendix E, Section E.3 (Table E.3.4).

### 7.3.2 ABAG Projections

Every two years ABAG publishes regional projections of employment and population growth for the nine-county San Francisco Bay Area. These projections are the most comprehensive set of employment and population projections that cover the area served by the SFPUC. *Projections 2002* and *Projections 2003* (ABAG, 2001; ABAG, 2002) were reviewed in preparation of this analysis. ABAG's most recent projections set, *Projections 2005* (ABAG, 2004) is the basis for the comparison presented here. The sidebar reviews the findings of a comparison between ABAG *Projections 2002*, *2003*, and *2005*.

ABAG projections are used for various planning purposes by many of the cities in the nine-county area covered by ABAG. Many of the SFPUC wholesale customers selected the ABAG's *Projections 2002* (the projections set that was current at the time) for use in the water demand model. Since that set was published, ABAG has issued two subsequent sets of projections—*Projections 2003* and *Projections 2005*. These two subsequent projections incorporate a fundamental shift in ABAG's projections methodology. Rather than taking existing local land use policy as a given (as had previously been the case), in the projections following *Projections 2002* ABAG assumes that local policy will be amended in the future to adopt "smart growth" principles. Specifically, the projections assume that higher density growth will be focused in urban core areas, and that more housing will be produced in those areas, compared to that previously assumed. The result of these assumptions is to increase the expected population in already developed areas. Most of the SFPUC service area is located in such already developed areas. Another difference reflected in *Projections 2003* and *Projections 2005* is more current and accurate reflection of effects of the dot com recession, especially the estimates of employment in 2005.

To assess whether ABAG's changing assumptions about future growth principals in the region combined with the updated information on current population and employment levels would result in substantially revised estimates of population or employment levels in the areas served by SFPUC water by 2030, an analysis was undertaken to compare the three sets of projections. First *Projections 2002* was compared to *Projections 2003* and then *Projections 2003* was compared to *Projections 2005*.

Based on the improved understanding of the extent of job and population losses that had been sustained in the first part of the decade, employment and population estimates for 2005 in *Projections 2003* are lower than had been projected in *Projections 2002*, and lower still in *Projections 2005*. At the same time, as might be expected from the assumption of more growth occurring in the urban core areas with the adoption and implementation of smart growth principles that ABAG assumes will occur, *Projections 2003* and *Projections 2005* have somewhat steeper growth curves between the present and 2030. Nevertheless, the general trends for the three are similar. The net result of the two principal changes in the later projection sets (that is, lower current population and employment estimates combined with more growth between now and 2030) is that the estimates for the WSIP horizon year of 2030 are similar among all three sets of ABAG projections. (Although *Projections 2002* only extends to 2025, projections for WSIP planning were extrapolated to 2030.) Section 7.3 text includes the key points from the comparison of the projections used in the demand study with ABAG *Projections 2005* projections. More detailed information on the comparison of the three ABAG projection sets is presented in Appendix E, Section E.3. Figures E.3.1 and E.3.2 in Appendix Section E.3 illustrate the differences in forecasted growth rates for the nine Bay Area counties and the four counties of the SFPUC service area reflected in the three projections sets.

## Employment Projections

**Table 7.6** compares the water customer-selected employment projections to the ABAG *Projections 2005* forecasts for the corresponding geographic areas for the years 2005, 2025, and 2030. The projections selected by the individual water customers (and interpolations for 2005 and 2025 prepared for this analysis) are shown in Table E.3.4 in Appendix E.3; Table 7.6 groups the projections by county. As shown, for the service area as a whole, the customer-selected employment projections forecast about 5 percent more jobs in 2030 than does *Projections 2005*. Thus, on the whole, the projections used in the water demand analysis remain generally consistent with current regional employment growth projections. The table supports the following observations:

- On a countywide basis, customer-selected projections of total employment in 2005 are consistently higher than *Projections 2005* estimates for 2005. The customer-selected projections were prepared a number of years prior to 2005, and therefore these 2005 employment estimates are truly forecasts. The *Projections 2005* estimates for 2005, in contrast, are based on observed data that reflect a more recent understanding of the impact of the “dot com bust” on the Bay Area economy. That is, the higher estimates of the customer-selected projections for 2005 reflect the experience of economic growth experienced by many Bay Area jurisdictions in the 1990s, without the benefit of information about the extent to which a slow down in employment growth occurred in the late 1990s and early 2000s. In contrast, *Projections 2005*, which was prepared a short time before 2005, reflects observed data on the continuing effects of the economic slow down, and shows lower 2005 employment estimates. Nevertheless, because *Projections 2005* also forecasts more growth in employment (i.e., more added jobs) between 2005 and 2030 than do the customer-selected projections, overall employment predicted by *Projections 2005* in 2030 (relying on more accurate 2005 estimates), is within a few percentage points of the overall employment predicted in 2030 by the customer-selected projections (relying on projected 2005 numbers).
- Water customer-selected employment projections for 2030 for Alameda and San Mateo County jurisdictions and San Francisco are generally consistent with (within 10 percent of) *Projections 2005*. Customer-selected projections for Santa Clara County jurisdictions are higher than *Projections 2005*. Customer-selected projections for 2025 are also generally consistent with *Projections 2005* for Alameda County jurisdictions and San Francisco.
- In each county, the numbers of new jobs expected in the customer-selected projections between 2005 and 2030 are smaller than the numbers forecasted in *Projections 2005*. The additional new job growth in *Projections 2005* reflects an increased understanding of the job loss that occurred between 2000 and 2005 combined with the expectation that, over the long term, the losses will be recovered and new jobs will be attracted to the area (but not enough new jobs to attain the totals that were predicted in *Projections 2002*).
- In each county, the customer-selected projection sources show employment growing at a slower rate during the 2005-2030 period as compared to the average rate of change



**TABLE 7.6**  
**COMPARISON OF EMPLOYMENT PROJECTIONS:**  
**SFPUC CUSTOMERS AND ABAG PROJECTIONS 2005 (SUMMARY BY COUNTY)<sup>a,b</sup>**

	2005	2025	2030	Change 2005–2030
<b>SFPUC Customer-selected Projections</b>				
Alameda County	251,963	318,953	335,701	83,738
Santa Clara County	519,755	612,598	635,809	116,054
San Mateo County	411,273	495,898	517,056	105,783
Total Wholesale Customers	1,182,991	1,427,449	1,488,566	305,575
San Francisco (City and County)	656,480	770,500	795,400	138,920
Total	1,839,471	2,197,949	2,283,966	444,495
<b>ABAG Projections 2005</b>				
Alameda County	212,560	308,120	329,800	117,240
Santa Clara County	393,700	512,830	544,610	150,910
San Mateo County	309,470	435,600	469,900	160,430
Total Wholesale Customers	915,730	1,256,550	1,344,310	438,580
San Francisco (City and County)	575,800	776,100	829,090	253,290
Total	1,491,530	2,032,650	2,173,400	681,870
<b>Customer-selected Projections as a Percentage of ABAG Projections 2005</b>				
Alameda County	119%	104%	102%	71%
Santa Clara County	132%	119%	117%	77%
San Mateo County	133%	114%	110%	66%
Total Wholesale Customers	129%	114%	111%	70%
San Francisco (City and County)	114%	99%	96%	55%
Total	123%	108%	105%	65%

<sup>a</sup> Includes only those portions of each county served by SFPUC wholesale water customers or served directly by the SFPUC (i.e., San Francisco); see Appendix E, Section E.3 (Table E.3.A.2 of Attachment E.3.A) for correspondence assumed between ABAG jurisdictions and water customer service areas. (The SFPUC serves a limited portion of Alameda County and Santa Clara County, which are predominately served by East Bay Municipal Utilities District and Santa Clara Valley Water District, respectively.)

<sup>b</sup> Wholesale customer-selected projections for 2005 and 2025 interpolated linearly for the PEIR from estimates for 2001 and 2030 presented in the Wholesale Customer Demand Projections Technical Report (URS, 2004a).

SOURCES: Hannaford and Hydroconsult, 2004; URS, 2004a; ABAG, 2004; Mundie & Associates, 2006

predicted in *Projections 2005* for the same period.<sup>17</sup> The growth rate in the customer-selected projection sources (e.g., *Projections 2002*) is what was used in the model to help forecast future water demand. (Note that the estimates of employment in 2005 provided in *Projections 2005* are noticeably lower than the customers' estimates of employment for that same year. This accounts for the fact that even though the average rate of change is faster in *Projections 2005*, as compared to the customer-selected projection sources, the number of jobs in 2030 in the customer-selected projections is higher than those in *Projections 2005*. (See Tables E.3.37 and E.3.38 in Appendix E, Section E.3, for employment and population growth rates in *Projection 2005* and the water customer projections, respectively.)

<sup>17</sup> This comparison refers to the average rate of change over the 25-year period (2005-2030) reflected in Table 7.6. To predict non residential water use, the change in base year and projected employment through 2030 was used to develop annual growth rates for each customer. The demand model applied this annual growth rate to base year non-residential water use to estimate future water use.

- For Santa Clara County the customer-selected projections predicted 17 percent more jobs in 2030 than are currently forecasted by ABAG in *Projections 2005*. Similar to the other counties, customer-selected projections expect fewer *new* jobs through 2030 than are forecasted in *Projections 2005*; however, because the number of jobs estimated for 2005 was more than 30 percent higher than the number estimated in *Projections 2005*, the expectations of future total employment remain higher than the ABAG forecast. Similarly, for San Mateo County, the customer-selected projections predicted 14 percent more jobs in 2025 than are forecasted by ABAG in *Projections 2005*. As in the other counties, the customer-selected projections expect fewer new jobs through 2025 than are forecasted in *Projections 2005*. However, because the number of jobs estimated for 2005 was more than 30 percent higher than the number estimated in *Projections 2005*, the expectations of future total employment remain higher than estimated in *Projections 2005*. By 2030, because of the faster rate of job growth reflected in *Projections 2005* (compared with the customer-selected projections), the difference in expected jobs is narrowed to 10 percent.
- Overall, the job projections selected by the wholesale customers are about 11 percent higher in 2030 than those of *Projections 2005*, and projections selected by San Francisco are about 4 percent lower than those of *Projections 2005*. With less than 10 percent variation for the service area as a whole, the employment projections used in the water demand studies remain consistent with ABAG's current long-term projections for job growth within the regional service area.

## Population

**Table 7.7** compares the population projections used by the SFPUC and its wholesale customers to develop future water demand projections to the ABAG *Projections 2005* forecasts for the corresponding geographic areas, for 2005, 2025, and 2030. The projections selected by the individual water customers (and the interpolations for 2005 and 2025 done for this analysis) are shown in Table E.3 4 in Appendix E, Section E.3; Table 7.7 groups the projections by county. As shown, for the service area as a whole, the customer-selected projections forecast about 5 percent less population in 2030 than does *Projections 2005*. Thus, on the whole, the projections used in the water demand analysis remain consistent with current regional population projections.

Table 7.7 supports the following conclusions:

- On a countywide basis, water customer projections of total population in 2005 are about the same as (within 5 percent of) *Projections 2005* estimates for 2005.
- *Projections 2005* population estimates for 2025 and 2030 are also similar to, although consistently higher (by 4 percent and 5 percent, respectively) than, the customer-selected projections in those years. The difference is likely attributable in large part to the extent of ABAG's smart growth assumptions, which would locate approximately 150,000 additional households (compared to *Projections 2002*) in the more urban communities of the Bay Area between 2010 and 2030.
- The numbers of new residents expected in the customer-selected projections between 2005 and 2030 are smaller in all counties than the numbers expected by *Projections 2005*.

**TABLE 7.7**  
**COMPARISON OF POPULATION PROJECTIONS:**  
**SFPUC CUSTOMERS AND ABAG PROJECTIONS 2005 (SUMMARY BY COUNTY)<sup>a,b</sup>**

	2005	2025	2030	Change 2005–2030
<b>SFPUC Customer-selected Projections</b>				
Alameda County	468,786	527,908	542,688	73,902
Santa Clara County	482,168	560,746	580,391	98,223
San Mateo County <sup>c</sup>	718,517	795,642	814,904	96,387
Total Wholesale Customers	1,669,471	1,884,296	1,937,983	268,512
San Francisco (City and County)	772,470	834,448	849,942	77,472
Total	2,441,941	2,718,744	2,787,925	345,984
<b>ABAG Projections 2005</b>				
Alameda County	473,900	552,700	576,200	102,300
Santa Clara County	463,100	561,700	585,100	122,000
San Mateo County	716,100	818,800	840,900	124,800
Total Wholesale Customers	1,653,100	1,933,200	2,002,200	349,100
San Francisco (City and County)	798,000	890,400	924,600	126,600
Total	2,451,100	2,823,600	2,926,800	475,700
<b>Customer-selected Projections as a Percentage of ABAG Projections 2005</b>				
Alameda County	99%	96%	94%	72%
Santa Clara County	104%	100%	99%	81%
San Mateo County	100%	97%	97%	77%
Total Wholesale Customers	101%	97%	97%	77%
San Francisco (City and County)	97%	94%	92%	61%
Total	99%	96%	95%	73%

<sup>a</sup> Includes only those portions of each county served by SFPUC wholesale water customers or served directly by the SFPUC (i.e., San Francisco); see Appendix E, Section E.3 (Table E.3.A.2 of Attachment E.3.A) for the correspondence assumed between ABAG jurisdictions and water customer service areas.

<sup>b</sup> Wholesale customer-selected projections for 2005 and 2025 interpolated linearly for the PEIR analysis from estimates for 2001 and 2030 presented in the Wholesale Customer Demand Projections Technical Report (URS, 2004a).

<sup>c</sup> Estimates for San Mateo County include updated figures for the Westborough Water District from its Urban Water Management Plan.

SOURCES: Hannaford and Hydroconsult, 2004; URS, 2004a; ABAG, 2004; Westborough Water District, 2005; Mundie & Associates, 2006.

- On a countywide basis, the customer-selected projection sources show population growing at a slower rate during the 2005-2030 period as compared to the average rate of change predicted in *Projections 2005* for the same period.<sup>18</sup> The growth rate in the customer-selected projection sources (e.g., *Projections 2002*) is what was used in the model to help forecast future water demand. (See Tables E.3.37 and E.3.38 in Appendix E, Section E.3, for employment and population growth rates in *Projection 2005* and the water customer projections, respectively.)

<sup>18</sup> This comparison refers to the average rate of change over the 25-year period (2005-2030) reflected in Table 7.7. To predict residential water use, the change in base year and projected population through 2030 was used to develop annual growth rates for each customer. The demand model applied this annual growth rate to base year residential water use (and other non-industrial and non-commercial water use) to estimate future water use.

### 7.3.3 General Plan Projections

#### Comparison of General Plan and Demand Study Projections

A comparison for consistency between the growth projections used as the basis for water demand and purchase requests estimates in the WSIP planning studies and the growth projections presented in the general plans of jurisdictions in the SFPUC service area helps determine whether the growth that would be supported by implementation of the WSIP would be planned growth reflected in adopted general plans, or is somehow more than or different from what is called for in current general plans (in terms of amount and/or location). The general plans of 21 cities that are served in whole or part by SFPUC and its wholesale customers have population projections that are generally comparable to the water customer-selected population projections.<sup>19,20</sup>

**Table 7.8** presents a comparison of the population projections selected by the water customers for use in the WSIP demand models with the population projected in the general plan for the respective cities. The table shows the difference (in number and percentage) in projected population from these two sources. Because the general plans vary considerably in age and have a range of projection years, none of which extends to 2030, ABAG's *Projections 2005* forecasts for 2030 are also included in the table for reference. The population projections assumed in the water customers' UWMPs, which were prepared more recently than the demand forecasts, also are included for reference. The comparison indicates the following:

- The population projections used for two of the wholesale customers (East Palo Alto and Sunnyvale) in the water demand studies are less than (from 2 to 6 percent less) the projections assumed in the general plans of the jurisdictions served by them.
- The population projections assumed for 13 of the water customers (ACWD, CWS-South San Francisco in combination with Westborough Water District, Daly City, Hayward, Hillsborough, Mid-Peninsula Water District, Millbrae, Mountain View, Palo Alto, San Bruno, San Francisco, and Santa Clara) are higher but within 1 to 10 percent of the projections presented in the respective general plans.
- Based on the two summary points above, the population growth assumed in the demand models for most of the water customers (17 of 20), for which comparable general plan projections are available, is similar to the growth anticipated in the general plans of the cities served by them. That is, the growth assumed in the demand models would be planned growth that is reflected in currently adopted general plans.

<sup>19</sup> General plans with projection years earlier than 2005 were not considered comparable to the 2030 population and employment projections used in the water demand studies. In addition, a few general plans did not include population or employment estimates in a form that could be compared to the customer-selected projections (e.g., where population growth is considered in terms of needed new housing units without information on assumed household size from which population estimates could be derived). Several wholesale customers' service areas do not correspond to jurisdictional boundaries closely enough to allow meaningful comparisons; refer to the discussion of correspondence between water customers and jurisdictions in Appendix E.3 and the correspondence assumptions shown in Table E.3.A.2 of Attachment E.3.A, Appendix E.3. The 21 cities, served by 19 water customers, represent approximately two-thirds of 32 cities served by the SFPUC regional system.

<sup>20</sup> The 21 cities are served by 18 wholesale customers and the SFPUC (for the retail service area), referred to collectively here as 19 water customers.

**TABLE 7.8  
COMPARISON OF WATER DEMAND POPULATION ESTIMATES AND GENERAL PLAN POPULATION ESTIMATES**

Customer	UWMP Population in 2030	Projections 2005 Population in 2030	Water Customer- Selected Population Projection for 2030	General Plan Population Projection for General Plan Projection Year <sup>a</sup>	General Plan Projection Year <sup>a</sup>	Difference: Water Customer Population and General Plan Population	% Difference (Water Customer Population and General Plan Population)
<b>Customer-selected projection less than or equal to general plan projection</b>							
City of East Palo Alto	32,712	43,600	32,712	34,600	2020	-1,888	-5.5%
City of Sunnyvale <sup>b</sup>	159,100	159,100	151,610	154,600	2020	-2,990	-1.9%
<b>Customer-selected projection 1–10% greater than general plan projection</b>							
Alameda County Water District	405,900	404,700	379,931	359,113		20,818	5.8%
Fremont	257,100	257,200		229,213	2020		
Newark	53,500	53,400		49,800	2020		
Union City	95,300	94,100		80,100	2020		
CWS–South San Francisco District and Westborough Water District <sup>c, d</sup>	83,450	73,660	73,884	68,685	2020	5,199	7.6%
City of Daly City	115,651	127,200	115,651	113,000	2020	2,651	2.3%
City of Hayward	162,800	171,500	162,757	160,300	2025	2,457	1.5%
Town of Hillsborough		11,800	12,708	11,800	2025	908	7.7%
Mid-Peninsula Water District <sup>e</sup>	28,930	28,800	27,997	27,800	2010	197	0.7%
City of Millbrae	24,200	24,500	25,174	24,860	2015	314	1.3%
City of Mountain View	81,700	89,600	81,670	75,200	2010	6,470	8.6%
City of Palo Alto	69,199	92,200	69,199	62,880	2010	6,319	10.0%
City of San Bruno	See note f	50,700	48,229	46,400	2020	1,829	3.9%
City and County of San Francisco <sup>g</sup>	849,942	903,300	849,942	811,100	2020	38,842	4.8%
City of Santa Clara	140,698	142,100	140,698	129,900	2010	10,798	8.3%
<b>Customer-selected projection more than 10% greater than general plan projection</b>							
City of Burlingame <sup>g, h</sup>	31,900	31,900	34,967	31,500	2010	3,467	11.0%
City of Milpitas <sup>i</sup>	91,400	91,400	88,841	94,400	2020	5,559	-5.9%
Coastside County Water District <sup>j</sup>	24,973	27,100	24,973	21,065	2020	3,908	18.6%
Estero Municipal Improvement District (MID) <sup>j, k</sup>	40,866	32,500	40,096	30,803	2010	9,293	30.2%

NOTE: Most wholesale customer service areas are not contiguous with city limits (or with the city and its planning area), and therefore the population projections from the jurisdictions' general plans and ABAG should be considered as general comparisons only. The following are not included, because the water service area and jurisdictional boundaries are not comparable or the general plan of the corresponding jurisdiction does not provide a comparable population projection: Brisbane, CWS–Bear Gulch, CWS–Mid-Peninsula, Menlo Park, North Coast County Water District, Purissima Hills Water District, Redwood City, San Jose North, Skyline County Water District, and Stanford University.

<sup>a</sup> The general plan population projection and projection year are the most distant population projection and the year of the most distant population projection available in the general plan or general plan element.

<sup>b</sup> The service area of Sunnyvale's water district is contiguous with the city limits; however, another water utility (CWS) serves several small areas within the city.

<sup>c</sup> CWS = California Water Service Company.

<sup>d</sup> CWS–South San Francisco serves South San Francisco, Colma, a small portion of Daly City, and the unincorporated area of Broadmoor. The water customer estimate for the Westborough Water District is from the district's Urban Water Management Plan. The general plan figure is the combined total projected population in the South San Francisco and Colma general plans (67,400 and 1,285 respectively); the general plan projection year shown (2020) is for South San Francisco, the projection year for Colma is 2005. The *Projections 2005* figure is for South San Francisco and Colma (71,800 and 1,860, respectively).

<sup>e</sup> The Mid-Peninsula Water District serves Belmont, portions of San Carlos, and unincorporated areas of San Mateo County. The general plan figure is for the city of Belmont, from the 2002 housing element.

<sup>f</sup> The San Bruno UWMP (City of San Bruno, 2007) shows two population projections for 2030: 50,700, based on ABAG's *Projections 2005*, and 48,229, based on the City's Adjusted Draft General Plan.

<sup>g</sup> UWMP and *Projections 2005* figures are for household population, since the customer-selected figure is for household population.

<sup>h</sup> Burlingame's water system also serves portions of unincorporated Burlingame and a few properties in the city of San Mateo and town of Hillsborough.

<sup>i</sup> The general plan population is based on the 2002 Milpitas General Plan.

<sup>j</sup> The general plan figure is for the city of Half Moon Bay only, from the 1993 Half Moon Bay Local Coastal Program Land Use Plan (Table 9.3, Chapter 9, page 189). In addition to incorporated Half Moon Bay, the Coastside County

Water District serves unincorporated areas of Half Moon Bay and the unincorporated communities of El Granada, Miramar, and Princeton by the Sea.

<sup>k</sup> Estero MID serves Foster City and a portion of the city of San Mateo. The general plan figure is for Foster City.

SOURCES: ABAG, 2004; ACWD, 2005; CWS–South San Francisco, 2006; City and County of San Francisco, 2004; City of Belmont, 2002a; City of Burlingame, 2002a; City of Burlingame, 2005; City of Daly City, 2004a; City of Daly City, 2005; City of East Palo Alto, 1999a; City of East Palo Alto, 2006; City of Foster City, 2001a; City of Fremont, 2003a; City of Half Moon Bay, 1993; City of Hayward, 2002a; City of Hayward, 2005; City of Millbrae, 1998a; City of Millbrae, 2005; City of Milpitas, 2002a; City of Milpitas, 2005; City of Mountain View, 2002a; City of Mountain View, 2005; City of Newark, 2002a; City of Palo Alto, 1998a; City of Palo Alto, 2005b; City of San Bruno, 2003a; City of San Bruno, 2007; City of Santa Clara, 2002a; City of Santa Clara, 2005; City of South San Francisco, 2002a; City of Sunnyvale, 2002a; City of Sunnyvale, 2005; City of Union City, 2002a; Coastside County Water District, 2005; Estero MID, 2005; Hannaford and Hydroconsult, 2004; Mid-Peninsula Water District, 2006; SFPUC, 2005; Town of Colma, 1999a; Town of Hillsborough, 2002a; URS, 2004a, Westborough Water District, 2005.

- The population projections assumed by four of the water customers (Burlingame, Coastside County Water District, Estero Municipal Improvement District, and Milpitas) appear to be more than 10 percent greater than the projections assumed in the respective general plans. The difference in these projections results from the longer 2030 planning horizon used for water planning and differences in the geographic area covered by the two sets of projections. Based on the difference in projections, however, the growth assumed in the demand models of these wholesale customers does not appear to be fully addressed in the general plans of the cities served by these customers.
- Two of the four customers assuming greater population growth than is reflected in the respective general plan also show somewhat greater growth than is forecasted in *Projections 2005*. Both of these customers (Burlingame and Estero MID) serve unincorporated areas outside the city's jurisdictional boundaries and ABAG subregional areas. In addition, Estero MID serves a non-segrable part of the city of San Mateo that is not included with the *Projections 2005* forecast for Foster City used in this comparison. The other customer (Coastside County Water District) assumes less growth than is forecasted in *Projections 2005* for 2030.

Compared to the population forecasts, fewer general plans (or general plan elements) prepared by jurisdictions served by the wholesale customers include comparable employment forecasts. The general plans of 18 cities that are served in whole or part by 16 SFPUC water customers have employment projections that are generally comparable to the water customer-selected employment projections.<sup>21</sup> **Table 7.9** presents a comparison of the employment projections selected by the water customers for use in the WSIP demand models with the employment projected in the general plan for the respective cities. The table shows the difference (in number and percentage) in employment estimates in these two sources. Because the general plans vary considerably in age and have a range of projection years, ABAG's *Projections 2005* forecasts for 2030 are included in the table for reference. The comparison indicates the following:

- The employment projections assumed for four wholesale customers are lower than the projections in their respective general plans. The projection for Millbrae is substantially less (33 percent); the combined projection for CWS-South San Francisco and Westborough Water District is about 10 percent less, and the projection for Daly City is slightly less (1 percent).
- The employment growth assumed for eight water customers is greater than but within 20 percent of the growth assumed in the respective general plans. The water customer-selected employment projections of two wholesale customers (Hayward, and Hillsborough) and of San Francisco are within 10 percent of the projections assumed in their respective general plans, and the customer-selected projections of five wholesale customers (Milpitas, Mountain View, Palo Alto, Santa Clara, and Sunnyvale) are 10 to 20 percent greater than the projections assumed in the respective general plan.

<sup>21</sup> General plans with projection years earlier than 2005 were not considered comparable to the employment projections used in the demand studies. A few general plans did not include population or employment estimates in a form that could dependably be compared to the customer-selected projections (e.g., where employment growth [additional jobs] is discussed without the baseline employment levels being provided). Several wholesale customers have service areas that do not correspond to jurisdictional boundaries closely enough to allow meaningful comparisons with the general plan projections. Table E.3.A.2 of Attachment E.3.A, Appendix E.3, shows the jurisdictions that are assumed to correspond to wholesale customers for purpose of comparing population and employment projections

**TABLE 7.9  
COMPARISON OF WATER DEMAND EMPLOYMENT ESTIMATES AND GENERAL PLAN EMPLOYMENT ESTIMATES**

Customer	Projections 2005 Employment in 2030	Water Customer Selected Employment Projection for 2030	General Plan Employment Projection for General Plan Projection Year <sup>a</sup>	General Plan Projection Year <sup>a</sup>	Difference: Water Customer Employment and General Plan Employment	% Difference (Water Customer Employment and General Plan Employment)
<b>Customer-selected projection less than or equal to general plan projection</b>						
City of Daly City	29,830	33,981	34,260	2020	-279	-1%
City of Millbrae	9,960	8,009	12,006	2015	-3,997	-33%
CWS–South San Francisco District and Westborough Water District <sup>b,c</sup>	56,080	63,975	71,400	2020	-7,425	-10%
<b>Customer-selected projection 1–20% greater than general plan projection</b>						
City of Hayward	100,430	113,843	108,830	2025	5,013	5%
Town of Hillsborough	2,030	1,380	1,360	2025	20	1%
City of Milpitas	68,940	76,129	65,200	2010	10,929	17%
City of Mountain View	81,110	95,669	84,810	2010	10,859	13%
City of Palo Alto	117,090	114,224	98,500	see note d	15,724	16%
City and County of San Francisco	829,090	795,400	745,600	2020	49,800	7%
City of Santa Clara	152,670	177,027	151,280	2010	25,747	17%
City of Sunnyvale <sup>e</sup>	123,020	168,950	152,730	2020	16,220	11 %
<b>Customer-selected projection more than 20% greater than general plan projection</b>						
Alameda County Water District	229,370	221,858	177,800		44,058	25%
<i>Fremont</i>	<i>160,410</i>		<i>130,530</i>	2020		
<i>Newark</i>	<i>24,960</i>		<i>26,560</i>	2020		
<i>Union City</i>	<i>44,000</i>		<i>20,710</i>	2020		
<i>Subtotal: Fremont, Newark, Union City</i>	<i>229,370</i>		<i>177,800</i>			
City of East Palo Alto	6,110	8,673	5,940	2010	2,733	46%
Estero Municipal Improvement District (MID) <sup>f</sup>	21,110	31,840	18,760	2010	13,080	70%
City of San Bruno	28,400	25,770	19,180	2020	6,590	34%

NOTE: Most wholesale customer service areas are not contiguous with city limits (or with the city and its planning area), and therefore the employment projections from the jurisdictions' general plans and ABAG should be considered as general comparisons only. The following are not included, because the water service area and jurisdictional boundaries are not comparable or the general plan of the corresponding jurisdiction does not provide a comparable employment projection: Brisbane, Burlingame, CWS–Bear Gulch, CWS–Mid-Peninsula, Coastside County Water District, Daly City, East Palo Alto, Guadalupe Valley MID, Menlo Park, Mid-Peninsula Water District, North Coast County Water District, Purissima Hills Water District, Redwood City, San Jose North, Skyline County Water District, and Stanford University.

<sup>a</sup> The general plan projection and projection year are the most distant employment projection and the year of the most distant employment projection available in the general plan or general plan element.

<sup>b</sup> CWS = California Water Service Company.

<sup>c</sup> CWS–South San Francisco serves South San Francisco, Colma, a small portion of Daly City, and the unincorporated area of Broadmoor.

<sup>d</sup> Employment estimate for Palo Alto is based on the Housing Element 1999-2006 (City of Palo Alto 2002) estimate that the city will "eventually contain 98,000 to 99,000 jobs within the next several years if the economy recovers in the near term."

<sup>e</sup> The service area of Sunnyvale's water district is contiguous with the city limits; however, another water utility (CWS) serves several small areas within the city.

<sup>f</sup> Estero MID serves Foster City and a portion of the city of San Mateo. The general plan figure is for Foster City.

SOURCES: City and County of San Francisco, 2004; City of Daly City, 2004a; City of East Palo Alto, 2001a; City of Foster City, 2001a; City of Fremont, 2003a; City of Hayward, 2002a; City of Millbrae, 1998a; City of Milpitas, 2002b; City of Mountain View, 2002a; City of Newark, 2002a; City of Palo Alto, 2002; City of San Bruno, 2003a; City of Santa Clara, 2002a; City of South San Francisco, 2002a; City of Sunnyvale, 2002a; City of Union City, 2002a; Hannaford and Hydroconsult, 2004; Town of Hillsborough, 2002a; URS, 2004a.

- The employment growth assumed for the remaining four water customers (ACWD, East Palo Alto, Estero Municipal Improvement District, and San Bruno) are between 25 and 70 percent greater than the projections assumed in the respective general plans. The difference in these projections results primarily from the longer 2030 planning horizon used for water planning and, for Estero MID, differences in the geographic area covered by the two sets of projections. Based on the difference in projections, however, the employment growth assumed in the demand models of these wholesale customers does not appear to be fully addressed in the general plans of the cities served by these customers.

These observations, in turn, suggest the following:

- The employment growth assumed in the demand models of most (12 of 16) of the water customers for which comparable general plan projections are available is greater than the growth anticipated in the general plans of the cities served by them. For all but four, however, the difference in projection is less than 20 percent. The reasons for differences between general plan and demand study employment projections included the following:
  - *Differences in horizon years.* For the employment projections surveyed, none of the general plan’s horizon years extend to 2030; five of the general plan horizon years are 2010.
  - *Differences in base years.* In almost all cases the demand study projections were prepared after the general plans projections. As a result, the demand study projections reflect to a greater extent the economic boom of the 1990s than do the projections in the general plans. That is, the projections vary as a result of when they were prepared, especially with respect to the economic growth that occurred in the 1990s. For the most part, general plans were prepared before the extent of the economic boom in the 1990s was fully appreciated, and have not been updated to reflect the economic growth that occurred during that period. In two cases (Palo Alto and Estero MID), the demand study’s 2001 estimate is greater than the general plan’s estimate for 2010. The region subsequently experienced substantial job losses from the “dot com bust” in the first part of this decade; therefore, demand study projections prepared before the “bust” was fully understood somewhat over projected 2005 job levels, compared with ABAG’s *Projections 2005*. *Projections 2005* forecasts substantial recovery over time, however, and by 2030 the employment projections selected for use in the demand study are fairly consistent with those of *Projections 2005* for most jurisdictions.
  - *Differences in the extent to which certain jurisdictions were impacted by the economic boom and subsequent recession.* The three series of ABAG projections reviewed for this analysis reflect evolving information about the extent of job gains and losses in bay area jurisdictions in the late 1990s and early 2000s. Some jurisdictions have sustained successive and substantial job losses whereas others experienced fewer losses or losses have been offset by a degree of economic recovery. The net effect of the two cycles has been that over the WSIP planning horizon, employment expectations, as reflected in projections selected by the water customers, are for the most part generally consistent with the projections presented in jurisdictions’ general plans. The projections selected by four wholesale customers, however, are 25 to 70 percent greater than the projections of the respective general plans. Although the relationship between water use and non-residential development depends upon the type of commercial or industrial development that occurs, given the difference in employment assumptions, it is likely that the impacts of employment growth assumed in the WSIP demand forecasts in the jurisdictions served by these wholesale customers has not been fully analyzed in the respective general plan impact analyses.



### 7.3.4 Growth in Water Demand Compared with Growth in Population and Employment

The relationship between the growth in water demand and growth in population and employment within a water service area is not linear. Because of differences in water use rates for a water agency's different retail customers, depending on such factors as types and sizes of residences, types of businesses, and a range of other variables that can affect consumption rates, a direct per capita or per job relationship is not expected between water demand and the population and employment within a service area.<sup>22</sup> As such, growth in water demand by 2030 would not be expected to track directly with population and employment growth. In addition, differences would be expected between the different wholesale water customers as a result of additional variables including climate and housing density. In general, water demand within the SFPUC service area as a whole would be expected to grow somewhat more slowly than population and employment due to the increasing efficiency of water fixtures expected from plumbing code requirements.

A comparison of the percent change in the SFPUC wholesale customers' water demand projected for 2030 (from Table 7.3) and percent change in population and employment (from Table 7.4) is shown in **Table 7.10** for each wholesale customer and the retail service area. The data presented reflect considerable variability between the water customers; for most the increase in projected water demand is smaller than the increase in projected population or job growth. The exceptions to this are noted and discussed in the customer summaries in Section 7.3.6.

### 7.3.5 Growth Trends in the Service Area

As part of the review of general plans for the comparisons presented above, a selection of general plans from cities in each of the counties in the SFPUC service area were reviewed in greater depth to ascertain a better understanding of historical growth trends in the service area. The general plans of the following cities were reviewed: East Palo Alto, Fremont, Hayward, Milpitas, Newark, Redwood City, San Francisco, San Mateo, Santa Clara, South San Francisco, Sunnyvale, Union City. These jurisdictions represent a range of sizes and include some of the larger cities and some of the cities projecting relatively substantial increases in water demand by 2030. Information provided in BAWSCA profiles of its member agencies supplemented the review, which is described in more detail in Appendix E, Section E.4 of this PEIR.

The results of this review indicate the following population growth trends in the region:

- Cities in the service area are largely urbanized, most having experienced their most rapid growth in the postwar decades through the 1970s.
- Milpitas and East Palo Alto have experienced high rates of growth more recently.
- San Francisco's population has fluctuated somewhat but on average has been essentially stable over the past 50 years

<sup>22</sup> As described in Section 7.2.2 and in more detail in Appendix E, Section E.2, the SFPUC expressly did not take a per capita approach to projecting 2030 demand, but rather undertook a detailed demand study utilizing actual account data in end-use demand models, which broke down total water use, by water service account, to specific end uses in each wholesale customer service area and San Francisco.

**TABLE 7.10  
PERCENT CHANGE IN POPULATION, EMPLOYMENT,  
AND WATER DEMAND 2001 – 2030**

Customer	Customer's Demand as Percentage of Total 2030 Demand (%)	Percent Change in		
		Employment (%)	Population (%)	Water Demand (%)
Alameda County Water District	14.2	47	20	16
City of Brisbane	0.2	417	45	111
City of Burlingame	1.2	16	16	3
CWS–Bear Gulch District <sup>a</sup>	3.3	11	11	4
CWS–Mid-Peninsula District <sup>a</sup>	4.3	27	16	5
CWS–South San Francisco District <sup>a</sup>	2.4	27	21	11
Coastside County Water District	0.8	26	36	25
City of Daly City	2.2	26	9	5
City of East Palo Alto	1.2	164	34	92
Estero MID <sup>b</sup>	1.6	31	16	17
Guadalupe Valley MID <sup>b</sup>	0.2	28	249	153
City of Hayward	6.9	30	16	49
Town of Hillsborough	0.9	14	9	5
Los Trancos County Water District <sup>c</sup>	0.0	NA	48	32
City of Menlo Park	1.1	32	12	15
Mid-Peninsula Water District	0.9	51	6	4
City of Millbrae	0.8	20	17	5
City of Milpitas	4.2	42	42	48
City of Mountain View	3.5	27	15	12
North Coast County Water District	0.9	29	18	5
City of Palo Alto	3.4	8	15	1
Purissima Hills Water District	0.8	9	12	51
City of Redwood City	3.2	26	14	13
City of San Bruno	1.1	55	18	2
City of San Jose (North)	1.6	34	23	25
City of Santa Clara	8.1	28	35	31
Skyline County Water District	0.1	0	122	82
Stanford University	1.6	NA	42	76
City of Sunnyvale	6.4	35	15	8
Westborough Water District	0.2	1	10	1
<b>Total, Wholesale Service Area</b>	<b>78</b>	<b>31</b>	<b>19</b>	<b>19</b>
<b>SFPUC Retail Service Area</b>	<b>22</b>	<b>25</b>	<b>12</b>	<b>-0.2</b>
<b>TOTAL</b>	<b>100</b>	<b>29</b>	<b>17</b>	<b>14</b>

NA = Not applicable; the former Los Trancos County Water District had only residential accounts and Stanford University used other parameters, such as increase in building square footage, to forecast growth in non-residential accounts.

<sup>a</sup> CWS = California Water Service Company

<sup>b</sup> MID = Municipal Improvement District

<sup>c</sup> The former Los Trancos County Water District is now part of CWS–Bear Gulch District; information presented here reflects information in background reports.

SOURCES: URS, 2004a; Hannaford and Hydroconsult, 2004; City of Palo Alto, 2005a; Westborough Water District, 2005.

General plans include policies to manage growth, and many identify strategies consistent with “smart growth” principles, such as encouraging infill development and the redevelopment of previously developed areas, as means to accommodate future growth.

### 7.3.6 Customer-Specific Summaries

This section summarizes for each wholesale customer and San Francisco the following key information regarding both (1) their water demand and the growth projections used in forecasting that demand, and (2) the consistency between the growth called for in the adopted general plans and that which could be supported by the WSIP.

#### Summary of Customer-Specific Review

The combined total 2030 water demand for San Francisco and the wholesale customers, taking into account projected plumbing code savings, is 417 mgd. To meet the customer purchase requests, the SFPUC regional water system would provide 284 – 300 mgd,<sup>23</sup> or about 68 – 72 percent of this total 417 mgd service area demand and about 71 – 74 percent of remaining demand after planned conservation programs have been implemented. SFPUC water would supplement other supply sources used by some of its water customers of groundwater, other surface water supplies, and recycled water, as well as conservation savings (refer to Table 7.2).

Overall, the estimated water demand from the SFPUC regional water system through 2030 is about 14 percent higher than 2001 levels. As the summaries by water customer presented below indicate, the increased water that would be available as a result of the WSIP would enable growth to varying degrees in the SFPUC service area. As the summaries and information presented in this chapter indicate, the water customers vary in size, their overall projected demand for 2030, the change the 2030 demand represents in absolute terms (i.e., in mgd) and as a percentage of 2001 demand, and the degree to which they depend on the SFPUC for their water supply. Not surprisingly, considering the different jurisdictions within the service area, expectations about future growth and growth-related constraints and opportunities also vary somewhat. However, the jurisdictions have much in common with respect to growth and growth management. The SFPUC service area is largely urbanized; many of the jurisdictions served cannot grow laterally (because they are bordered by other cities, the bay, and/or protected areas) and have identified infill development, redevelopment, and increasing densities as approaches to accommodating future growth. Such growth is consistent with ABAG principles of smart growth and is, in general, the kind of growth that the WSIP would have the potential to induce or support.

As discussed below, the growth that would be supported by the SFPUC regional water system under the WSIP is generally consistent with ABAG projections for jurisdictions in the service area. Because of differences in the geographic area covered by most of the water customers and the jurisdictions they serve, the population projections of ABAG, general plans, and the SFPUC wholesale and retail demand studies are not expected to match exactly. However, the comparisons presented below do show reasonably consistent expectations in most areas.

<sup>23</sup> As previously noted and discussed in more detail in Chapter 3 of this PEIR, for planning purposes the high range purchase estimate of 300 mgd was selected as the target goal for the average annual water delivery by 2030.

The age of the jurisdictions' general plans vary considerably, as previously noted. Due to the WSIP's longer planning horizon (especially considering the age of some of the local general plans), the WSIP would support a degree of growth that has not been addressed in adopted general plans. The effects of planned growth and growth that is not addressed in adopted land use plans of jurisdictions in the SFPUC service area are discussed in Section 7.4, below.

## Customer Summaries

Each customer summary provides the following:

- Total 2030 demand
- Change in demand from 2001 (mgd and percent)
- Percent of projected demand that would be met by the SFPUC
- Customer's 2030 purchase estimate
- Change in purchases from the SFPUC from 2001 (mgd and percent)
- Customer's current supply assurance
- How projected growth in population and employment compares with growth in water demand
- Consistency of population and employment (for general plans that present employment projection data) assumed in developing water demand with projected growth contained in general plans.

The discussion of individual customers presented in this section indicates that different ABAG series result in markedly different projections for some jurisdictions. For an illustration of the differences in growth rates forecasted for the nine Bay Area counties and the four counties of the SFPUC service reflected in ABAG's last three projections sets, see Figures E.3.1 and E.3.2 in Appendix E, Section E.3.2.

Unless otherwise specified, the ABAG projections referenced in this section are from *Projections 2005* (ABAG, 2004). The demand study referenced is the *SFPUC Wholesale Customer Water Demand Projections Technical Report* (URS, 2004a), except for the discussion of the SFPUC retail service area. The source of retail service area demand information is the report entitled *City and County of San Francisco Retail Water Demands and Conservation Potential* (Hannaford and Hydroconsult, 2004).

## ACWD

The ACWD's total 2030 water demand, based on the demand study and taking into account plumbing code savings, is 59.3 mgd. This represents a 16 percent increase in total service area demand over the 2001 base-year demand estimate. ACWD uses multiple supply sources to meet its water demand. In 2030, ACWD projects it will purchase about 23 percent of its water demand and about 25 percent of remaining demand from the SFPUC after conservation has been implemented. The SFPUC portion of ACWD's supply would supplement ACWD's projected conservation savings and use of groundwater, other surface water supplies, and recycled water

(refer to Table 7.2) to meet future demand increases. ACWD's 2030 estimated purchase of 13.76 mgd from the SFPUC represents a 1.77 mgd, or 15 percent, increase over its 2001 purchases. ACWD's current water supply assurance is 13.76 mgd.

Population projections used in the demand study are generally consistent with the growth cited in the general plans of the three cities served by ACWD (Fremont, Newark, and Union City) and the growth projected for the three cities by ABAG. The population projections used in the demand study for 2030 are approximately 6 percent higher than those presented in the cities' general plans (combined), which is likely attributable to the longer planning horizon of the WSIP (2030 compared to 2020 for the general plans). The population estimate in the demand study is approximately 6 percent less than is projected in ABAG's *Projections 2005* for the three cities in 2030.

The employment projection used in the demand study is about 25 percent higher than the (combined) employment projections cited in the cities' general plans, but is generally consistent with (about 3 percent less than) the combined ABAG *Projections 2005* employment projection for the three cities. This may be partially attributable to the longer planning horizon of the WSIP (and ABAG). The projections in Table 7.9 indicate that the ABAG projections for Fremont are 23 percent higher than the general plan projection; the ABAG projection for Newark is about 6 percent less than the general plan projection; and the ABAG projection for Union City is more than double that of the general plan. Business and industrial demand accounts for approximately 20 percent of ACWD's projected 2030 demand (SFPUC, 2006).

## City of Brisbane

Brisbane's total 2030 water demand, taking into account plumbing code savings, is 0.93 mgd. This represents a 111 percent increase in total service area demand over the 2001 base-year demand estimate. The SFPUC is Brisbane's only source of potable water supply. In 2030, Brisbane projects it will purchase 96 percent of its total water demand from the SFPUC and 100 percent of demand after conservation has been implemented, based on Brisbane's purchase estimate (refer to Table 7.2). Brisbane's 2030 estimated purchase of 0.89 mgd from the SFPUC represents a 0.50 mgd, or 128 percent, increase over its 2001 purchases. Brisbane's current water supply assurance is 0.46 mgd.

The projected 111 percent increase in service area demand for Brisbane is apparently primarily due to the city's expectation of substantial job growth in the 2001- 2030 planning period. The demographic projections used in the demand model, which were provided by the City of Brisbane, assume a 45 percent increase in population and a 417 percent increase in employment by 2030.

Both the City of Brisbane water district and Guadalupe Valley MID provide water to the city of Brisbane; therefore, this discussion combines the 2030 projections used in the demand study for both customers to allow a comparison with projections developed for the city. The 2030 population assumed for Brisbane in the demand study is 4,606. The combined population projection used in the demand study for 2030 for the two districts is 6,164, which is 18 percent

higher than the population projected by ABAG for Brisbane of 5,240 (ABAG, 2004). The Brisbane General Plan, adopted in 1994, does not have a comparable population projection. The 1999–2006 housing element cites an ABAG estimate of 4,010 for 2005, but does not project beyond that year.

The combined employment projection for the two water customers is about 24 percent higher than ABAG's *Projections 2005* forecast for Brisbane in 2030. The combined projections for the two water districts represent a 139 percent increase in jobs from 2005<sup>24</sup> to 2030. This projected increase, while substantial, is slightly lower than the 149 percent increase predicted for Brisbane by *Projections 2005* for the same period.

Both water districts are operated by the City of Brisbane and both used city population and employment projections as the source of projections in the water demand study. If a water customer selected a projection source other than ABAG for the demand study, they were asked to provide the source and the reason the source was more appropriate for them than ABAG.<sup>25</sup> Brisbane noted that ABAG projections do not divide the city's population into the two separate water districts. The selected population projections were based on the number of available units in each district under the zoning ordinance and population density assumptions (persons per unit) using information from the Brisbane Building and Planning Department and the housing element, and an additional population estimate based on the 2000 U.S. Census data. The city identified 1,366 additional units for the two districts (660 in the Brisbane service area and 706 in the Guadalupe Valley service area) with an assumed density factor of 2.2 persons per unit, for a projected additional population of 3,005 above the initial population of 3,159. Thus, the projection used appears to be consistent with existing planning and zoning within the City.

## City of Burlingame

Burlingame's total 2030 water demand, taking into account plumbing code savings, is 4.9 mgd. This represents a 3 percent increase in total service area demand over the 2001 base-year demand estimate. The SFPUC is Burlingame's only source of potable water supply. In 2030, Burlingame estimates it will purchase 96 percent of its total water demand from the SFPUC and 100 percent of demand after conservation has been implemented, based on Burlingame's purchase estimate (refer to Table 7.2). Burlingame's 2030 estimated purchase of 4.70 mgd from the SFPUC represents a 0.06 mgd, or 1 percent, increase over its 2001 purchases. Burlingame's current water supply assurance is 5.23 mgd.

Burlingame's water demand projections assumes 16 percent growth in population and 16 percent growth in employment by 2030. The population projection used for Burlingame in the demand study is about 11 percent higher than the growth cited in the 2002 general plan housing element for 2010, and 10 percent higher than the 2030 population estimated in ABAG's *Projections 2005* for the city and its sphere of influence. Because the housing element projection only extends to

<sup>24</sup> The 2005 estimates were interpolated from the employment figures in the SFPUC demand study for this analysis, as shown in Table E.3.4 of Appendix E, Section E.3.

<sup>25</sup> The request for projection source information was part of the SFPUC Capital Improvement Project Wholesale Customer Demand Projections/DSS Modeling Wholesale Customer Population Projection Selection Form submitted by each wholesale customer.

2010, it would be expected to be less than the population for 2030 used to derive water demand projections. The difference between the customer-selected projections used in the demand study and ABAG projections apparently stems from ABAG's lowered expectations about population growth in Burlingame. The demand study cites as its source ABAG *Projections 2002*, which expected more growth in the city than does *Projections 2005*. For example, *Projections 2002* forecasted a 2025 population of 33,600, and *Projections 2005* forecasts a 2025 population of 31,700, and the population now expected in *Projections 2005* in 2030 was expected in 2015 in *Projections 2002*. (*Projections 2002* does not provide 2030 estimates for a direct comparison of projections for 2030.) Burlingame's UWMP, published in 2005, cites *Projections 2005* as the projection source and uses the lower 2030 population estimate of 31,900. In addition, 2 percent of Burlingame's water service area is unincorporated San Mateo County, for which segregable ABAG and San Mateo County General Plan projections are not available.

Given the moderate expectations for growth assumed in the demand model (16 percent over 29 years), the revisions to ABAG's expectations of growth for the region, and the much shorter planning horizon contained in the city's housing element, the growth assumed in the demand model is generally consistent with the local and regional planning agencies.

### **CWS–Bear Gulch District**

The total 2030 water demand estimated for the CWS–Bear Gulch District, taking into account plumbing code savings, is 14.06 mgd. This estimate includes the projected 2030 demand of 0.14 mgd of the former Los Trancos County Water District, which is now part of CWS–Bear Gulch, and represents a 4 percent increase in total service area demand over the 2001 base-year demand estimate. CWS–Bear Gulch District uses multiple services to meet its water demand. In 2030, CWS–Bear Gulch estimates it will purchase about 84 percent of the district's total water demand from the SFPUC and about 90 percent of remaining demand after conservation has been implemented, based on CWS–Bear Gulch District's purchase estimate (refer to Table 7.2). CWS–Bear Gulch District's 2030 estimated purchase of 11.76 mgd (including the former Los Trancos district) from the SFPUC represents a 0.53 mgd, or 5 percent, increase over the combined CWS–Bear Gulch and Los Trancos County Water District 2001 purchases. The current water supply assurance for the three CWS districts combined (i.e., including CWS–Mid Peninsula and CWS–South San Francisco) is 35.5 mgd.

Because the CWS–Bear Gulch District serves many communities, including Atherton, Menlo Park, Portola Valley, part of Woodside, and areas of unincorporated San Mateo County (i.e., the communities of West Menlo Park, Ladera, North Fair Oaks, and Menlo Oaks), its population projections are not comparable to those of ABAG or the respective jurisdictions' general plans.

The CWS–Bear Gulch District's UWMP, published in December 2005, shows a much lower 2030 population estimate (59,220) than the customer-selected estimate shown in the demand study (73,719). The UWMP's estimate of the district's 2004 population, 54,350, is also substantially lower than the 2001 base-year population of 66,197 used in the demand study. The differences appear to result from the different methods used to estimate the population of the service area, which, as noted, serves parts of a number of incorporated cities and unincorporated

parts of the county. The UWMP states that the population estimates are different because “initial conditions for the DSS model hav[e] changed since the DSS model was first created and when [the UWMP] was written.” The UWMP notes that, although the “initial conditions” for the two estimates changed, the rates of growth of both projections are similar. A comparison of expected growth from 2004 to 2030 in the UWMP, based on the estimates cited above, shows the population is expected to grow by about 9 percent, and the expected growth from 2001 to 2030 in the wholesale demand study is about 11 percent. Based on a comparison of the SFPUC’s share of the UWMP’s planned 2030 water supply and the 2030 purchase estimate, no change is expected in water demand. The UWMP estimates 14,708 acre-feet per year, or about 11.76 mgd, from the SFPUC. This is equivalent to the combined 2030 purchase estimates of CWS–Bear Gulch (11.6 mgd) and the former Los Trancos County Water District.

### **CWS–Mid-Peninsula District**

The total 2030 water demand estimated for the CWS–Mid-Peninsula District, taking into account plumbing code savings, is 18.1 mgd. This represents a 5 percent increase in total service area demand over the 2001 base-year demand estimate. The SFPUC is CWS-Mid Peninsula’s only source of potable water supply. In 2030, CWS–Mid-Peninsula District estimates it will purchase about 95 percent of its total water demand from the SFPUC and 100 percent of demand remaining after conservation has been implemented, based on CWS-Mid-Peninsula District’s purchase estimate (refer to Table 7.2). CWS–Mid-Peninsula District’s 2030 estimated purchase of 17.24 mgd from the SFPUC represents a 0.49 mgd, or 3 percent, increase over its 2001 purchases. The current combined water supply assurance for the three CWS districts is 35.5 mgd.

Because the CWS–Mid-Peninsula District serves portions of San Carlos and San Mateo and adjacent unincorporated areas of San Mateo County, including the Highlands and Palomar Park, its population and employment projections are not comparable to those of ABAG or the respective jurisdiction’s general plans since they cover different geographic areas.

### **CWS–South San Francisco District**

The CWS–South San Francisco District’s 2030 water demand, taking into account plumbing code savings, is 9.9 mgd. This represents an 11 percent increase in total service area demand over the 2001 base-year demand estimate. CWS–South San Francisco District’s uses multiple supply sources to meet its water demand. In 2030, CWS–South San Francisco estimates it will purchase about 81 percent of its total demand from the SFPUC and about 85 percent of the district’s remaining demand after conservation has been implemented, based on CWS–South San Francisco’s purchase estimate (refer to Table 7.2). CWS–South San Francisco District’s 2030 estimated purchase of 7.97 mgd from the SFPUC represents a 0.41 mgd, or 5 percent, increase over its 2001 purchases. The current combined water supply assurance for the three CWS districts is 35.5 mgd.

Both CWS–South San Francisco and Westborough County Water District provide water to South San Francisco; therefore, this discussion combines the 2030 population projections for the two water customers to allow a comparison with the city’s general plan and ABAG projections



for the city. (The 2030 customer-selected projection for CWS-South San Francisco [59,584] is based on the 2004 demand study. The 2030 projection for Westborough [14,300] is from Westborough's 2005 UWMP, based on a letter from the water district to the SFPUC [Westborough Water District, 2007] indicating that the population estimates in the UWMP more accurately reflect the district's service area than did the population estimates used in the demand study.) The combined estimated 2030 population to be served by the two wholesale customers (73,884) is about 8 percent higher than that projected in the general plan and about the same as (0.3 percent higher than) ABAG's 2030 projections for the city.

The combined employment projection for the two water customers in the demand study is about 10 percent lower than the employment projection cited in the city's general plan, and about 14 percent higher than ABAG's *Projections 2005* 2030 projections.

## Coastside County Water District

The Coastside County Water District's (Coastside CWD) total 2030 water demand, taking into account plumbing code savings, is 3.2 mgd. This represents a 25 percent increase in total service area demand over the 2001 base-year demand estimate. Coastside CWD uses multiple sources to meet its water demand. In 2030, Coastside CWD estimates it will purchase 70 to 94 percent of its total water demand from the SFPUC and 74 to 100 percent of remaining demand after conservation has been implemented, based on Coastside CWD's purchase estimate (refer to Table 7.2). Coastside CWD's 2030 estimated purchase of 2.24 – 3.02 mgd from the SFPUC represents a 0.44 – 1.22 mgd, or 24 – 68 percent, increase over its 2001 purchases. The high-end of its purchase estimate range assumes loss of all local water sources (i.e., groundwater and other surface water). Coastside CWD's current water supply assurance is 2.18 mgd.

The customer-selected population projection used for Coastside CWD in the demand study is 19 percent higher than the population of 21,065 for 2020 cited in Half Moon Bay's 1993 Local Coastal Program Land Use Plan (which serves as the general plan), and about 8 percent lower than the 2030 ABAG projections for Half Moon Bay and unincorporated Half Moon Bay. In addition to the city itself, Coastside CWD serves unincorporated areas of Half Moon Bay and the unincorporated communities of El Granada, Miramar, and Princeton by the Sea. The difference in geographic area covered by the land use plan and the water district may account for the differences in the population projections. In addition, some of the district's increase in SFPUC water purchase is needed to replace existing local supplies that, because of water quality concerns, are no longer suitable for use.

The 2030 employment projection used for Coastside CWD in the demand study is about 20 percent less than the combined *Projections 2005* employment forecasts for Half Moon Bay and unincorporated Half Moon Bay for 2030 (8,490). The 1993 Local Coastal Program Land Use Plan does not have a comparable employment projection.

Half Moon Bay currently is in the process of updating its general plan. According to information about the public review draft available on the city's website, the updated general plan will incorporate provisions of Measure D, a growth control measure adopted by voters in 1999.

Measure D limits residential growth in the city to 1 percent per year, with an optional 50 percent additional growth (i.e., 1.5 percent) allowed in the downtown area (City of Half Moon Bay, 2005a). A 1991 growth control measure, Measure A, was incorporated into the adopted 1993 Land Use Plan; however, Measure D further restricts residential growth (City of Half Moon Bay, 2005b). The Draft Local Coastal Program Amendment posted on the city's website states that ABAG's *Projections 2005* expects 820 new households for Half Moon Bay by 2025, reflecting a 1.1 percent annual growth rate, and another 200 units in the unincorporated coastside area. The draft plan states that ABAG's projection for Half Moon Bay and unincorporated Half Moon Bay shows a combined population of about 26,500 in 2025 (City of Half Moon Bay, 2005c).

### **City of Daly City**

Daly City's total 2030 water demand, taking into account plumbing code savings, is 9.1 mgd. This represents a 5 percent increase in total service area demand over the 2001 base-year demand estimate. Daly City uses multiple supply sources to meet its water demand. In 2030, Daly City estimates it will purchase 54 to 80 percent of its total water demand from the SFPUC and 57 to 85 percent of remaining demand after conservation has been implemented, based on Daly City's purchase estimate (refer to Table 7.2). Daly City's 2030 estimated purchase of 4.90 – 7.32 mgd from the SFPUC represents a -0.18 – 2.24 mgd, or -4 – 44 percent, change from its 2001 purchases. The purchase estimate range reflects a range of potential groundwater usage established under a pilot project, from the sustainable yield (3.76 mgd) to the lowest annual production yield (1.34 mgd). Daly City's current water supply assurance is 4.29 mgd.

The customer-selected population projection used for Daly City in the demand study is about the same as (2 percent higher than) the buildout population cited in the city's general plan, and 9 percent lower than the 2030 population projected by ABAG.

The employment projection for Daly City in the demand study is about the same as (1 percent less than) the employment projection cited in the city's general plan, and about 14 percent higher than the ABAG *Projections 2005* employment projection.

### **City of East Palo Alto**

East Palo Alto's total 2030 water demand, taking into account plumbing code savings, is 4.8 mgd. This represents a 92 percent increase in total service area demand over the 2001 base-year demand estimate. The SFPUC is East Palo Alto's only source of potable water supply. In 2030, East Palo Alto estimates it will purchase 97 percent of its total water demand from the SFPUC and 100 percent of remaining demand after conservation has been implemented, based on East Palo Alto's purchase estimate (refer to Table 7.2). East Palo Alto's 2030 estimated purchase of 4.64 mgd from the SFPUC represents a 2.60 mgd, or 127 percent, increase over its 2001 purchases. East Palo Alto's current water supply assurance is 1.96 mgd.

East Palo Alto's customer-selected projections used to derive water demand assume 34 percent growth in population and 164 percent growth in employment by 2030. Besides the projected population and employment growth assumed in the demand model, the projected 92 percent

increase in demand reflects expected new commercial and residential development having higher per-account water use rates than existing accounts. To accommodate this new development, two new account categories were created for the demand model, as follows:

- a new commercial account category was created to represent additional water demand of 1.2 mgd from new commercial uses, which are assumed to have a use rate of 5,000 gallons per account per day, in the Ravenswood Business District
- a new residential account category was created to represent additional water demand of 0.3 mgd from new single-family residences in the Ravenswood Business District

In more general terms the East Palo Alto's Urban Water Management Plan attributes the near doubling of demand by 2030 to a shift in development density in the city. The UWMP states that the city is shifting from traditional single family dwelling units to higher density multiple-family units that is expected to substantially increase water demand without a commensurate increase in the number of water connections.

The population projection used for East Palo Alto in the demand study is about 6 percent less than the growth expected by 2020 in the city's general plan and 25 percent less than that projected by ABAG's *Projections 2005* for East Palo Alto in 2030. This substantial difference is likely due to adjustments made to the demand study projections to account for the portion of residential customers in East Palo Alto that are served by two other water districts (which are not BAWSCA members and do not receive SFPUC water): the Palo Alto Mutual Water Company and the O'Connor Tract Mutual Cooperative Water Company. According to the demand study, the single- and multi-family residential accounts served by these two water companies were subtracted from the total population served by East Palo Alto (URS, 2004a).

The customer-selected employment projection for East Palo Alto used in the demand study is substantially higher (about 46 percent) than the employment projection cited in the city's general plan (and about 42 percent higher than the ABAG *Projections 2005* employment projection). A combination of the following factors likely accounts for the difference:

- The Ravenswood Business District, a proposal to amend the general plan and zoning ordinance to redevelop 146 acres in the northeast section of East Palo Alto, is not reflected in the general plan projections but is reflected in the WSIP projections. The city began preparing an environmental impact report on the Ravenswood Business District in 2002; as then envisioned, the development would have resulted in an estimated 1,800 jobs above general plan employment projections.<sup>26</sup> Economic changes have likely slowed the pace at which revitalization can occur in East Palo Alto, and the Ravenswood Business District is currently being redefined.
- The difference is partially attributable to the longer planning horizon of the WSIP (2030 versus 2010) and changing expectations about employment growth as reflected in different

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<sup>26</sup> The Ravenswood Business District area identified in the administrative draft EIR for the project consists of about 146 acres of land, exclusive of streets. Existing land uses within the area include a variety of industrial, commercial, residential, and agricultural uses; approximately 45 acres are vacant and undeveloped.

ABAG projections series. The customer-selected projection is consistent with (about 6 percent less than) *Projections 2002* employment forecasts for 2030.

- The base year employment projection identified in the general plan is 2,760 for year 2000; the base year employment estimate in the demand study is 3,289 for year 2001. The latter estimate may more accurately reflect the substantial increases in job growth that occurred in the late 1990s.

Commercial and industrial demand accounts for approximately 41 percent of East Palo Alto's projected 2030 demand (SFPUC, 2006).

## **Estero MID**

The Estero MID service area includes Foster City and a part of the City of San Mateo. Estero's total 2030 water demand, taking into account plumbing code savings, is 6.8 mgd. This represents a 17 percent increase in total service area demand over the 2001 base-year demand estimate. The SFPUC is Estero MID's only source of potable water supply. In 2030, Estero MID estimates it will purchase 91 – 100 percent of its total water demand from the SFPUC and 100 percent of remaining demand after conservation has been implemented, based on Estero MID's purchase estimate (refer to Table 7.2). Estero MID's 2030 estimated purchase of 6.20 – 6.80 mgd from the SFPUC represents a 0.58 – 1.18 mgd, or 10 – 21 percent, increase over its 2001 purchases. Estero MID's water supply assurance contract does not specify a limit on purchase.

The customer-selected 2030 population projection used for Estero MID in the demand study is 30 percent higher than the population projection in the Foster City General Plan housing element (adopted in 2001),<sup>27</sup> and about 23 percent higher than the 2030 Foster City population estimated by ABAG in *Projections 2005*. The difference between the demand study and general plan projections is probably due both to the general plan's horizon year of 2010 and the fact that Estero MID serves more than Foster City. (According to the wholesale customer demand study, about 10 percent of the water district is within the city of San Mateo and 90 percent is within Foster City. However, a comparison of the population estimates used for the demand study with the 2000 census for Foster City and ABAG's near term and 2030 projections indicates a population difference of about 20 percent between the water district and Foster City, as discussed below.)

A comparison of Estero's 2001 base-year population (34,568) with the 2000 census population for Foster City (28,756) (U.S. Census Bureau, 2000) shows that the population of the Estero MID service area was roughly 20 percent higher than Foster City's for the base year. A comparison of the population estimates used for Estero in the demand study with *Projections 2005* estimates for Foster City shows that the district's 2001 base-year population is about 20 percent higher than the 2000 population,<sup>28</sup> 16 percent higher than the projection for 2005, and, as noted, about 23 percent higher than ABAG's projection for 2030. This fairly consistent relationship between Foster City

<sup>27</sup> The General Plan land use element (amended in 1999) also includes population and employment projections. The land use element projects a 2005 population of 31,471, slightly higher than the later housing element projection for 2010, and 27 percent less than the 2030 population forecast used in the demand study.

<sup>28</sup> *Projections 2005* shows the 2000 census figure for Foster City.

and Estero population estimates suggests that the difference between the demand study and ABAG projections for 2030 is due to the difference in geographic area covered by the two sets of projections. Similarly, this difference in geographic area partially accounts for the difference between the water customer's projected 2030 population and the Foster City General Plan population at buildout. As noted, another important difference is in the shorter-term planning horizon (2010) used in the General Plan projection. Residential demand accounts for a little more than half (52 percent) of Estero's 2030 demand (SFPUC, 2006).

The customer-selected employment projection for Estero MID in the demand study is substantially higher (about 70 percent) than the employment projection cited in Foster City's 2001 housing element<sup>29</sup> and the ABAG *Projections 2005* employment projection (about 51 percent higher). As with the population projections, the difference is due to the difference in the geographic area covered by the sets of projections and, for the general plan, the longer planning horizon of the WSIP (2030 versus 2010). An additional factor contributing to the difference between employment projections is the more dynamic nature of employment in the area (compared to population) in the late 1990s and early 2000s. The Foster City housing element employment projection is based on ABAG's *Projections 2000* (ABAG, 1999), whereas the demand study used the employment projections in *Projections 2002*. A comparison of these two ABAG projections sets show that *Projections 2002* expected continued strong job growth in Foster City into the future (15 to 18 percent more jobs in 2005, 2010, 2015, and 2020 than were projected for those years in *Projections 2000*). The influence of the economic boom on *Projections 2002* thus contributed to some of the difference between the general plan and water demand study projections.

*Projections 2005*, by contrast, reflects improving information about the effects of dramatic job losses that were incurred in the area, with job forecasts for Foster City 23 to 33 percent lower than those of *Projections 2002* for the years that can be compared (2005, 2010, 2015, 2020, and 2025). *Projections 2005* employment forecasts for San Mateo also are 15 to 30 percent lower than those in *Projections 2002*, for the years that can be compared. This would account for the greater difference between customer-selected and ABAG employment projections than would be expected due to differences in geographic area covered by the two projections. As discussed in Section 7.3.2, above, *Projections 2005* forecasts a greater increase in jobs over time than was forecasted in *Projections 2002*, so that by 2025 (the last year the two sets can be compared) there is less difference between projections than there is in the near-term.

Commercial/institutional and industrial demand accounts for approximately 12 percent of Estero's projected 2030 demand (SFPUC, 2006).

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<sup>29</sup> The General Plan land use element (amended in 1999) also includes employment projections. The land use element projects a 2010 employment projection of 21,460, somewhat higher than the later housing element projection, and about 48 percent less than the 2030 employment forecast used in the demand study.

## Guadalupe Valley MID

Guadalupe Valley MID serves part of the City of Brisbane. The district's total 2030 water demand, taking into account plumbing code savings, is 0.81 mgd. This represents a 153 percent increase in total service area demand over the 2001 base-year demand estimate. The SFPUC is Guadalupe Valley MID's only source of potable water supply. In 2030, Guadalupe Valley MID estimates it will purchase 88 percent of its total water demand from the SFPUC and 100 percent of remaining demand after conservation has been implemented, based on Guadalupe Valley's purchase estimate (refer to Table 7.2). Guadalupe Valley MID's 2030 estimated purchase of 0.71 mgd from the SFPUC represents a 0.41 mgd, or 138 percent, increase over its 2001 purchases. Guadalupe Valley MID's current water supply assurance is 0.52 mgd.

The projected 153 percent increase in service area demand for Guadalupe Valley MID is apparently due to the City of Brisbane's expectation of substantial population growth in the 2001-2030 in the area served by this water district. The demographic projections used in the demand model, which were provided by Brisbane, assume a 249 percent increase in population and a 28 percent increase in employment by 2030.

The customer-selected projections used for Guadalupe Valley MID in the demand study assume a population of 1,558 in 2030 and 5,668 jobs. Since Guadalupe Valley MID serves only part of Brisbane, the population and employment projections used in the demand study are not comparable to the city as a whole. Refer to the discussion under Brisbane for a comparison of combined water district projections with general plan and ABAG projections.

## City of Hayward

Hayward's total 2030 water demand, based on the demand study and taking into account plumbing code savings, is 28.7 mgd. This represents a 49 percent increase in total service area demand over the 2001 base-year demand estimate. The SFPUC is Hayward's only source of potable water supply. In 2030, Hayward estimates it will purchase 97 percent of its total water demand from the SFPUC and 100 percent of remaining demand after conservation has been implemented, based on Hayward's purchase estimate (refer to Table 7.2). Hayward's 2030 estimated purchase of 27.95 mgd from the SFPUC represents a 10.34 mgd, or 59 percent, increase over its 2001 purchases. Hayward's water supply assurance contract does not specify a limit on purchases.

The percentage increase in water demand for Hayward projected for 2030 (49 percent) is considerably greater than the projected growth in both population and employment assumed in the demand model (16 percent and 30 percent, respectively). Given both the substantial increase in total demand projected for Hayward (9.4 mgd) and the substantial difference in the expected demand and population and employment growth rates, this discrepancy warrants additional discussion.

Hayward residents have among the lowest rates of per capita water use compared with residents in other communities served by the SFPUC. This is a consequence of past development patterns

that have included high density development with little or no landscaping. The general plan states that during development surges that occurred from the 1950's to mid 1980's, because few development standards existed, "some apartment buildings were poorly designed with as many units as possible loaded on the site... and there was little or no play space for children..." (City of Hayward, 2002a). In addition, single family homes typically were located on smaller lots compared with other parts of the Bay Area and many had minimal, if any, landscaping. The city currently expects that new housing developed in the city will have higher water use rates due to comparatively larger lots with more landscaping. The city is also encouraging renovation efforts that include landscaping common areas within neighborhoods and assisting homeowners with rehabilitating their private properties. As a result, per capita water use rates are expected to increase somewhat (City of Hayward, 2005). According to the general plan, city planners also are encouraging development consistent with smart growth principles, including infill development and higher densities in urban core areas. Because of the city's experience with poorly planned, designed, and constructed high density development in the past, the city has met with some resistance regarding higher densities. However, successful transit oriented developments have demonstrated that well planned development can accommodate higher densities without diminishing quality of life for resident.

The demand model incorporated adjustments in recognition of these factors. The higher water demand projected for 2030 results from adjustments made to account for expected changes in water usage for new and existing residential accounts, as well as changes expected in some industrial accounts. To accommodate the anticipated changes, in response to input from the city, the demand model was adjusted to include several new account categories, as follows:

- A new category of residential account was created to accommodate the addition of more than 2,000 new homes the city expects to be developed. These new residences are expected to be on larger lots than existing housing, include more landscaping, and have a higher per capita water use rate.
- A new account category was created for newly renovated single family homes, which have more landscaping than previously and use more water.
- Based on the city's general plan, which indicates that the city expects to attract high technology manufacturing industries, a new account category was added for higher-demand commercial and industrial uses. The higher water demand expected from this new industrialization was incorporated into the model.

Hayward's demand model also was adjusted to increase the expected percentage of unaccounted-for water in its system. The five-year average for the Hayward water system was 7.2 percent. A 9 percent unaccounted-for water was used in the demand study because Hayward's unaccounted-for water includes water used for hydrant flushing and other maintenance purposes. Although many agencies categorize these uses as "other," Hayward does not. Because these types of uses are difficult to anticipate, Hayward adjusted its unaccounted-for water to 9 percent, consistent with its 2001 UWMP (URS, 2004a). The SFPUC reviewed each of the requests for adjustments against current billing records and other documentation, including the city's Water Master Plan and general plan, before making a determination that the requested adjustments were reasonable.

The customer-selected population projection used for Hayward in the demand study is generally consistent with the growth cited in the city's general plan and the growth expected by ABAG. The 2030 Hayward population used in the demand study is approximately 2 percent higher than the population identified in the city's general plan and about 5 percent lower than projected by ABAG.

The employment projection for Hayward in the demand study is generally consistent with (about 5 percent higher than) the employment projection cited in the city's general plan and about 13 percent higher than ABAG's *Projections 2005 2030* projections.

## **Town of Hillsborough**

Hillsborough's total 2030 water demand, taking into account plumbing code savings, is 3.9 mgd. This represents a 5 percent increase in total service area demand over the 2001 base-year demand estimate. The SFPUC is Hillsborough's only source of potable water supply. In 2030, Hillsborough estimates it will purchase 95 percent of its total water demand from the SFPUC and 100 percent of remaining demand after conservation has been implemented, based on Hillsborough's purchase estimate (refer to Table 7.2). Hillsborough's 2030 estimated purchase of 3.70 mgd from the SFPUC represents a 0.14 mgd, or 4 percent, increase over its 2001 purchases. Hillsborough's current water supply assurance is 4.09 mgd.

The customer-selected population projection used for Hillsborough in the demand study is generally consistent with the growth identified in the city's general plan and the growth expected by ABAG. The 2030 Hillsborough population used in the demand study is approximately 8 percent higher than both the population identified in the city's general plan (for 2025) and that projected for 2030 by ABAG. The difference between the demand study and ABAG 2030 projections is probably due to the fact that the Hillsborough's water service area includes a portion of unincorporated San Mateo County, in addition to the town itself. A comparison of Hillsborough's 2001 base-year population for the water demand projections with ABAG projections for 2000 and 2005 show that the difference in ABAG and Hillsborough projections is about the same in the base year as in 2030: Hillsborough's 2001 population is about 7 percent higher than ABAG's 2000 population and 6 percent higher than ABAG's 2005 population. This suggests that the difference between the projections may be due to differences in the geographic area covered.

The employment projection for Hillsborough used in the demand study is about the same as (1 percent more than) the projection for 2025 in the town's general plan. The projection is considerably less (32 percent) than ABAG's projection for 2030.

## **City of Menlo Park**

The City of Menlo Park, represented by the Menlo Park Municipal Water District estimates a total 2030 water demand, taking into account plumbing code savings, of 4.7 mgd. This represents a 15 percent increase in total service area demand over the 2001 base-year demand estimate. The SFPUC is Menlo Park's only source of potable water supply. In 2030, Menlo Park estimates it will purchase 97 percent of the water district's total water demand from the SFPUC and



100 percent of remaining demand after conservation has been implemented, based on Menlo Park's purchase estimate (refer to Table 7.2). Menlo Park's 2030 estimated purchase of 4.54 mgd from the SFPUC represents a 0.97 mgd, or 27 percent, increase over its 2001 purchases. Menlo Park's current water supply assurance is 4.46 mgd.

Because the water district serves less than half of the city, the population projection used for Menlo Park in the demand study is not directly comparable to general plan or ABAG projections for the city. Nevertheless, the 2030 water demand population projection is consistent with growth identified in the city's general plan, assuming the district would serve the same percentage of the city's population. In 2001, the water district served 12,153—or 39 percent—of the city's more than 30,785<sup>30</sup> residences. The customer-selected population used in the demand study for 2030 (13,655) is 39 percent of the general plan buildout population (35,285, projected for 2010). ABAG projects a population for Menlo Park of 41,100 in 2030, 16 percent more than the population projected at general plan buildout. (The CWS–Bear Gulch District, discussed above, and O'Connor Water District, which is not an SFPUC customer, serve the remaining portions of Menlo Park.)

## Mid-Peninsula Water District

The Mid-Peninsula Water District primarily serves the City of Belmont, although it also serves a small part of unincorporated San Mateo County and the City of San Carlos. Mid-Peninsula's total 2030 water demand, taking into account plumbing code savings, is 3.8 mgd. This represents a 4 percent increase in total service area demand over the 2001 base-year demand estimate. The SFPUC is the Mid-Peninsula Water District's only source of potable water supply. In 2030, the District estimates it will purchase 97 percent of its total water demand from the SFPUC and 100 percent of remaining demand after conservation has been implemented, based on Mid-Peninsula's purchase estimate (refer to Table 7.2). Mid-Peninsula Water District's 2030 estimated purchase of 3.70 mgd from the SFPUC represents a 0.24 mgd, or 7 percent, increase over its 2001 purchases. Mid-Peninsula Water District's current water supply assurance is 3.89 mgd.

The customer-selected population projection used for the Mid-Peninsula Water District in the demand study is about the same as (approximately 1 percent higher than) the projection cited in the 2002 Belmont housing element for 2010, and 3 percent lower than the 2030 population projected by ABAG for Belmont.

The employment projection for Mid-Peninsula Water District in the demand study is substantially higher (about 58 percent) than ABAG's *Projections 2005* projections for Belmont in 2030. The difference is due to the lower number of jobs estimated for Belmont in the near term in *Projections 2005*, compared with the customer-selected projections used in the demand study, as a consequence of the substantial job losses sustained in the area in the first part of this decade. The projections used in the demand study expected almost twice as many jobs in 2005 as are estimated in *Projections 2005* (15,742 compared to 8,190).<sup>31</sup> Because *Projections 2005* forecasts

<sup>30</sup> This was the city's population in 2000 according to the U.S. Census.

<sup>31</sup> The demand study estimate for 2005 was interpolated for this PEIR analysis from the employment figures in the SFPUC demand study; refer to Table E.3.4 of Appendix E, Section E.3.

a higher rate of subsequent job growth (a 72 percent increase in jobs compared to a 41 percent increase assumed in the demand study projections), by 2030 the difference in total jobs forecasted by the two projections is less than in the near term.

## City of Millbrae

Millbrae's total 2030 water demand, taking into account plumbing code savings, is 3.3 mgd. This represents a 5 percent increase in total service area demand over the 2001 base-year demand estimate. The SFPUC is Millbrae's only source of potable water supply. In 2030, Millbrae estimates it will purchase 97 percent of its total water demand from the SFPUC and 99 – 100 percent of remaining demand after conservation has been implemented, based on Millbrae's purchase estimate (refer to Table 7.2). Millbrae's 2030 estimated purchase of 3.19 mgd from the SFPUC represents a 0.72 mgd, or 29 percent, increase over its 2001 purchases. Millbrae's current water supply assurance is 3.15 mgd.

The population projection used for Millbrae in the demand study is generally consistent with the growth identified in the city's general plan and the 2030 population projected by ABAG. The 2030 Millbrae population used in the demand study is approximately 1.3 percent higher than the population cited in the city's general plan, and 3 percent higher than the 2030 Millbrae population projected by ABAG.

The employment projection for Millbrae in the demand study is about 33 percent lower than the employment projection cited in the city's general plan and about 20 percent lower than ABAG's *Projections 2005* employment projection.

## City of Milpitas

Milpitas' total 2030 water demand, taking into account plumbing code savings, is 17.7 mgd. This represents a 48 percent increase in total service area demand over the 2001 base-year demand estimate. Milpitas uses multiple supply sources to meet its water demand. In 2030, Milpitas estimates it will purchase about 46 percent of its total 2030 water demand from the SFPUC and about 48 percent of remaining demand after conservation has been implemented, based on Milpitas' purchase estimate. The SFPUC portion of Milpitas' supply would supplement the city's use of recycled water and other surface water supplies in addition to the conservation savings (refer to Table 7.2). Milpitas' 2030 estimated purchase of 8.20 mgd from the SFPUC represents a 1.37 mgd, or 20 percent, increase over its 2001 purchases. Milpitas' current water supply assurance is 9.23 mgd.

The projected percentage increase in water demand for Milpitas in 2030 (48 percent) is somewhat greater than the projected growth in both population and employment assumed in the demand models (42 percent growth projected for each category). Given the relatively substantial increase in total service area demand for Milpitas (5.74 mgd) this discrepancy in demand and demographic growth rates warrants additional discussion. Several new billing account categories were created in the demand model for Milpitas to reflect observed changes in land use and water consumption rates. All new single family residential accounts (above those existing in 2001) were placed into a

new single family residential category that assumes larger homes with higher outdoor water usage. It was assumed that these accounts use approximately 50 percent more water than existing accounts; all of the additional water usage was allocated to outdoor use. In addition, based on information in the city's Water Master Plan and conversations with the wholesale customer, the model also included a new commercial category, which was assumed to have higher water usage than existing accounts. All new commercial accounts (above those existing in 2001) were placed in this category. Therefore, the differences in rates of increase (in demand compared with population and employment) do not indicate inconsistencies between the city's water supply and land use planning efforts. The city's estimated 2030 purchase from the SFPUC (which, as noted in the preceding paragraph, is 20 percent above 2001 purchases) does not reflect the growth in total demand.

The customer-selected population projection used for Milpitas in the demand study is approximately 15 percent greater than the growth identified in the city's general plan and is generally consistent with (about 3 percent less than) the growth projected by ABAG. The City of Milpitas is currently preparing a Transit Area Specific Plan that is expected, upon adoption, to result in a buildout population of 95,014, somewhat greater than the population projection used in the demand study (Williams, 2007).

The employment projection for Milpitas in the demand study is about 17 percent higher than the employment projection cited in the city's general plan, and about 10 percent higher than the ABAG *Projections 2005* employment projection.

### **City of Mountain View**

Mountain View's total 2030 water demand, taking into account plumbing code savings, is 14.8 mgd. This represents a 12 percent increase in total service area demand over the 2001 base-year demand estimate. Mountain View uses multiple supply sources to meet its water demand. In 2030, Mountain View estimates it will purchase 89 percent of its total water demand from the SFPUC and 91 – 97 percent of remaining demand after conservation has been implemented, based on Mountain View's purchase estimate (refer to Table 7.2). Mountain View's 2030 estimated purchase of 13.20 mgd from the SFPUC represents a 2.23 mgd, or 20 percent, increase over its 2001 purchases. Mountain View's current water supply assurance is 13.46 mgd.

The customer-selected population projection used for Mountain View in the demand study is 9 percent higher than the buildout population identified in the city's general plan, and 9 percent lower than the 2030 population projected by ABAG. The difference between the demand study and general plan projections may be attributable to the general plan's horizon year of 2010.

The employment projection for Mountain View in the demand study is about 13 percent higher than the employment projection cited in the city's general plan, and about 18 percent higher than the ABAG employment projection.

## North Coast County Water District

The North Coast County Water District primarily serves the city of Pacifica; a small part of its service area encompasses a portion of unincorporated San Mateo County. North Coast County's total 2030 water demand, taking into account plumbing code savings, is 3.8 mgd. This represents a 5 percent increase in total service area demand over the 2001 base-year demand estimate. The SFPUC is North Coast's only source of potable water supply. In 2030, the District estimates it will purchase 95-100 percent of its total water demand from the SFPUC and remaining 100 percent of demand after conservation has been implemented, based on North Coast's purchase estimate (refer to Table 7.2). North Coast County's 2030 estimated purchase of 3.61 – 3.80 mgd from the SFPUC represents a 0.16 – 0.35 mgd, or 5 – 10 percent, increase over its 2001 purchases. North Coast County's current water supply assurance is 3.84 mgd.

The customer-selected population projection used for North Coast County Water District in the demand study (47,829) is 13 percent higher than the 2030 Pacifica population projected by ABAG (42,200). The difference in the projections is apparently due to ABAG's lowered expectations of population growth in Pacifica. The demand study cites as its source ABAG *Projections 2002*, which expected more growth in Pacifica than does *Projections 2005*. (For example, *Projections 2002* estimated a population of 44,300 in 2025, whereas *Projections 2005* estimates a 2025 population of 41,700. North Coast County's UWMP, published in December 2005, uses a 2030 population estimate of 42,100, which is similar to ABAG's. The UWMP also forecasts somewhat lower water demand in 2030 than did the wholesale customer demand study (3.46 compared to 3.80 mgd). According to the UWMP, the "source of the discrepancy appears to be differing data for the District's base year, and differences in ABAG *Projections 2002* and *Projections 2005*" (North Coast County Water District, 2005). The Pacifica General Plan (which appears to date from 1980, except for a 1992 housing element) does not provide a comparable population projection.

The employment projection for North Coast in the demand study is 12 percent less than the ABAG *Projections 2005* employment projection for Pacifica.

## City of Palo Alto

Palo Alto's total 2030 water demand, taking into account plumbing code savings, is 14.36 mgd based on the City's 2005 UWMP, as requested by the City in a letter to the SFPUC (City of Palo Alto, 2005). This represents a 1 percent increase in total service area demand over the 2001 base-year demand estimate. The SFPUC is Palo Alto's only source of potable water supply. In 2030, Palo Alto estimates it will purchase 91 percent of its total water demand from the SFPUC, and 94 percent of remaining demand after conservation has been implemented, based on the city's purchase estimate. The SFPUC portion of Palo Alto's supply would supplement the city's projected conservation savings and use of recycled water (refer to Table 7.2). Palo Alto's 2030 estimated purchase of 13.00 mgd from the SFPUC represents a -0.19 mgd, or 1 percent, decrease from its 2001 purchases. Palo Alto's current water supply assurance is 17.07 mgd.

The customer-selected population projection used for Palo Alto in the demand study is 10 percent higher than the buildout population identified in the city's general plan; the projection is not comparable to ABAG's projections for Palo Alto, since the wholesale demand projection does not include Stanford University (a distinct SFPUC wholesale customer), whereas ABAG does include the university. The difference between the demand study and general plan projections may be attributable to the general plan's horizon year of 2010.

The employment projection for Palo Alto in the demand study is about 16 percent higher than the employment projection cited in the city's general plan, but slightly lower than (by about 2 percent) than the ABAG employment projection for 2030.

## **Purissima Hills Water District**

The Purissima Hills Water District serves about two-thirds of the Town of Los Altos Hills and a small part of adjacent unincorporated Santa Clara County. The total 2030 water demand estimated for the water district, taking into account plumbing code savings, is 3.3 mgd. This represents a 51 percent increase in total service area demand over the 2001 base-year demand estimate. The SFPUC is Purissima Hills Water District's only source of potable water supply. In 2030, the District estimates it will purchase 98 percent of its total water demand from the SFPUC and 100 percent of remaining demand after conservation has been implemented, based on Purissima Hills' purchase estimate (see Table 7.2). Purissima Hills' 2030 estimated purchase of 3.22 mgd from the SFPUC represents a 1.02 mgd, or 46 percent, increase over its 2001 purchases. Purissima Hills' current water supply assurance is 1.62 mgd.

Because the Purissima Hills Water District serves only part of the town's residences and some unincorporated county areas, the population projection used for the district in the demand study is not comparable to general plan or ABAG projections for the town. Nevertheless, the 2030 water demand population projection for the water district is consistent with growth identified in the town's 2002 Housing Element (Town of Los Altos Hills, 2002), assuming the district would serve the same percentage of the town's population. In 2001, the Purissima Hills Water District served 6,032—or 64 percent—of the approximately 9,455 residences estimated for the town and its sphere of influence in 2000. The customer-selected population projection used in the demand study (6,763) is 64 percent of the projection shown in the Housing Element (10,500 projected for 2025). Both the demand study and Housing Element projections reflect an annual population growth rate of approximately 0.4 percent. ABAG projects a population for Los Altos Hills of 10,700 in 2030, 2 percent more than the Housing Element population projection for 2025. The Housing Element cites ABAG projections for employed residences (and indicates some reservations about these ABAG projections) but does not provide projections for jobs with which to compare the demand study employment (job) projections.

Although the water district projects a 51 percent increase in water demand, that increase is not reflected in expected population and employment growth. The population and employment estimates used in the demand model indicate a 12 percent increase in population and a 9 percent increase in employment from 2001 to 2030. The demand model for the Purissima Hills Water District includes a "new/renovated single family residential" account category that has a much

higher water use rate (1,605 gallons per day per account), than does the “old single family residential” category (716 gallons per day per account), which accounts for the substantial increase in water demand compared to projected population and employment growth.

### City of Redwood City

The City of Redwood City provides water to Redwood City as well as to part of San Carlos, part of Woodside, and part of unincorporated San Mateo County. Redwood City’s total 2030 water demand, taking into account plumbing code savings, is 13.4 mgd. This represents a 13 percent increase in total service area demand over the 2001 base-year demand estimate. The SFPUC is Redwood City’s only source of potable water supply.

In 2030, Redwood City estimates it will purchase 87 percent of its total water demand from the SFPUC, and 92 percent of remaining demand after conservation has been implemented, based on Redwood City’s purchase estimate and subsequent communication with the SFPUC. Redwood City’s 2030 estimated purchase of 11.60 mgd from the SFPUC represents essentially no change (-0.04 mgd) from its 2001 purchases. In the purchase estimate originally submitted to the SFPUC in 2004, Redwood City estimated it would purchase 11.60 – 12.60 mgd, which corresponds to 87 – 94 percent of its total 2030 demand and 94 – 98 percent of remaining demand after conservation has been implemented. The estimated purchases of 11.60 – 12.60 mgd from the SFPUC represent a -0.04 – 0.96 mgd change from the City’s 2001 purchases (refer to Table 7.2). Subsequently, in 2005, Redwood City informed the SFPUC that it would be purchasing its low range estimate (11.6 mgd) due to the estimated use of 1 mgd of recycled water in 2030. Redwood City’s current water supply assurance is 10.93 mgd.

The customer-selected population projection used for Redwood City in the demand study is 24 percent lower than ABAG’s 2030 population projection of 122,300 for the city and its sphere of influence. The 2030 Redwood City population used in the demand study is approximately 7 percent more than the 2020 projection shown in the city’s Downtown Precise Plan, which cites ABAG’s *Projections 2005* forecast for 2020 for the city within its jurisdictional boundary. The city’s water service area includes only a portion of the city’s sphere of influence (Bonte, 2006), which probably accounts for the difference between the ABAG projection for the city and its sphere of influence and that assumed in the demand study. ABAG’s 2030 projection of 94,300 for Redwood City within the city limits only is within 1 percent of the demand study projection. Because the population projection included in the city’s 1990 general plan is for 2000 (earlier than 2005), it is not considered comparable to the 2030 WSIP population projection for this analysis. According to the city, the 2003 UWMP was selected for use in the demand study because the UWMP contained the most current population and employment projections at the time.

The employment projection for Redwood City in the demand study is about 9 percent higher than the *Projections 2005* employment projection for 2030. The City’s general plan does not have a comparable employment projection.

## City of San Bruno

San Bruno's total 2030 water demand, taking into account plumbing code savings, is 4.5 mgd. This represents a 2 percent increase in total service area demand over the 2001 base-year demand estimate. In 2030, the SFPUC will be San Bruno's only source of potable supply, although in the past the City has used other sources of water supply. In 2030, San Bruno estimates it will purchase 96 percent of its total water demand from the SFPUC and 100 percent of remaining demand after conservation has been implemented, based on San Bruno's purchase estimate (refer to Table 7.2). San Bruno's 2030 estimated purchase of 4.30 mgd from the SFPUC represents a 1.60 mgd, or 59 percent, increase over its 2001 purchases. San Bruno's current water supply assurance is 3.25 mgd.

The customer-selected population projection used for San Bruno in the demand study is about 4 percent higher than the projection for 2020 cited in the city's 2003 general plan housing element and 5 percent lower than the 2030 population projected by ABAG. The general plan, adopted in 1984, does not include comparable projections; the City of San Bruno is currently working on a general plan update.

The employment projection used for San Bruno in the demand study is about 34 percent higher than the projection for 2020 cited in the city's 2003 general plan housing element, but about 9 percent lower than the 2030 ABAG employment projection. The demand study employment projection is based on the city's 2001 draft general plan. The draft general plan had not been adopted at the time of Draft PEIR publication, so the housing element provides the city's published employment projections. Base year employment estimates in the 2003 housing element and 2001 draft general plan are similar (16,500 and 16,600, respectively). The sources of the job estimates for the housing element and draft general plan are ABAG *Projections 2000* and *Projections 2002*, respectively. The housing element indicates an expected annual growth rate for the period 2000-2020 of 0.8 percent, whereas the draft general plan indicates an expected annual growth rate for the period 2000-2020 of 1.7 percent. (This average annual growth rate for the 2000-2020 period was applied to the 2020 to 2030 period for the WSIP forecasts). Consequently, the differences in the forecasts are a direct reflection of the shifting expectations in the two ABAG Projections series, with *Projections 2002* forecasts reflecting more of the economic boom that occurred in the late 1990s and early part of the 2000s in the Bay Area, as well as the 10-year difference in the horizon year. Commercial demand accounts for approximately 20 percent of San Bruno's projected 2030 demand (SFPUC 2006b).

## City of San Jose (North)

The San Jose Municipal Water District-North (San Jose North) serves part of the northern San Jose/Alviso area of the city. The district's total 2030 water demand, taking into account plumbing code savings, is 6.5 mgd. This represents a 25 percent increase in total service area demand over the 2001 base-year demand estimate. In 2030, the SFPUC will be San Jose's only source of potable supply, although in the past the City has used other sources of water supply. In 2030, the District estimates it will purchase 98 percent of its total water demand from the SFUPC and 100 percent of remaining demand after conservation has been implemented, based on

San Jose North's purchase estimate (refer to Table 7.2). San Jose's 2030 estimated purchase of 6.34 mgd from the SFPUC represents a 1.92 mgd, or 43 percent, increase over its 2001 purchases. San Jose does not have a water supply assurance contract with the SFPUC.

The customer-selected projections used in the demand study for San Jose assume 23 percent growth in population and 34 percent growth in employment by 2030. Because this water district only serves part of the northern section of San Jose, the population projection used for San Jose North in the demand study is not comparable to projections contained in the city's general plan or ABAG projections for San Jose.

## City of Santa Clara

Santa Clara's total 2030 water demand, taking into account plumbing code savings, is 33.9 mgd. This represents a 31 percent increase in total service area demand over the 2001 base-year demand estimate. Santa Clara uses multiple supply sources to meet its water demand. In 2030, Santa Clara estimates it will purchase about 14 percent of its total 2030 water demand from the SFPUC and about 15 percent of remaining demand after conservation has been implemented, based on the City's purchase estimate. The SFPUC portion of Santa Clara's supply would supplement the city's conservation savings and use of recycled water, groundwater, and other surface water supplies (refer to Table 7.2). Santa Clara's 2030 estimated purchase of 4.90 mgd from the SFPUC represents a 1.06 mgd, or 28 percent, increase over its 2001 purchases. Santa Clara does not have a water supply assurance contract with the SFPUC.

The customer-selected population projection used for Santa Clara in the demand study is generally consistent with the growth cited in the city's general plan and the growth projected by ABAG. The 2030 population estimated in the demand study is approximately 8 percent higher than that cited in the city's general plan, which may be attributable to the longer planning horizon of the WSIP (2030 compared to 2010 for the general plan). The 2030 Santa Clara population estimated in the demand study is about 1 percent less than the population projected by ABAG.

The employment projection used for Santa Clara in the demand study is 17 percent higher than the projection in the City's general plan (for 2010) and 16 percent higher than the ABAG 2030 employment projection.

## Skyline County Water District

Skyline County Water District serves part of the town of Woodside and part of unincorporated San Mateo County along Highway 35 (Skyline Boulevard), from Highway 84 to Highway 92. Skyline County's total 2030 water demand, taking into account plumbing code savings, is 0.31 mgd. This represents an 82 percent increase in total service area demand over the 2001 base-year demand estimate. The SFPUC is Skyline County's only source of potable water supply. In 2030, Skyline estimates it will purchase about 97 percent of the district's total water demand from the SFPUC and 100 percent of remaining demand after conservation has been implemented, based on Skyline's purchase estimate (see Table 7.2). Skyline's 2030 estimated purchase of



0.30 mgd from the SFPUC represents a 0.13 mgd, or 76 percent, increase over its 2001 purchases. Skyline's current water supply assurance is 0.18 mgd.

Because Skyline County Water District serves part of Woodside and a portion of unincorporated San Mateo County, the population projection used for the district in the demand study is not comparable to either general plan or ABAG projections. The water district selected historical data—the BAWSCA annual survey—as its source for population projections. The district stated that, because of the limited development potential in the district—much of which is owned by the Mid-Peninsula Regional Open Space Authority and San Mateo County Parks and Recreation Department—it expected less growth than was projected for the greater San Francisco Bay Area. Nevertheless, the demand model estimates show a district population in 2030 that is more than twice that in 2001 (an increase from 1,210 to 2,683, or 122 percent). This substantial increase (in contrast to the stated low expectations of growth) is apparently due to the possibility that three other water districts—the Kings Mountain Water Company, the Skylonda Mutual Water Company, and the Cuesta La Honda Water Company—may become part of Skyline County Water District. The Skyline County Water District notes that growth in the areas served by these water companies is also constrained by publicly owned open space lands (Skyline County Water District, 2003). No change is projected in the number of jobs in the district.

## Stanford University

Stanford University's total 2030 water demand, taking into account plumbing code savings, is 6.8 mgd. This represents a 76 percent increase in total service area demand over the 2001 base-year demand estimate. Stanford uses multiple supply sources to meet its water demand. In 2030, Stanford estimates it will purchase about 62 percent of its total 2030 water demand from the SFPUC and about 69 percent of remaining demand after conservation has been implemented, based on Stanford's purchase estimate. The SFPUC portion of Stanford's supply would supplement the university's use of other surface water supplies in addition to the conservation savings (refer to Table 7.2). Stanford's 2030 estimated purchase of 4.20 mgd from the SFPUC represents a 1.84 mgd, or 78 percent, increase over its 2001 purchases. Stanford's current water supply assurance is 3.03 mgd.

The customer-selected population projection used for Stanford in the demand study assumes 42 percent growth in population; the demand projections for Stanford did not include assumptions about employment growth. Stanford has special water account categories to reflect that it is a university rather than a city or water district. Besides residential categories (i.e., student and faculty housing), account categories include construction projections and medical school, commercial space, and academic occupants. The demand model added a special "lake water" billing category account in order to include lake water that is used for irrigation of the campus in order to more accurately reflect the actual total demand on campus. According to the demand study the effect of this specific change was to increase total demand. The Stanford Community Plan (adopted in 2000) includes an Academic Growth Boundary (AGB) which limits development on the campus. The AGB, which applies the concept of urban growth boundaries promoted in the Santa Clara County General Plan to the campus setting, limits development to the

area within the AGB. The AGB is established for 25 years, during which time it may only be modified by a fourth-fifths vote of all members of the county board of supervisors.

## City of Sunnyvale

Sunnyvale's total 2030 water demand, taking into account plumbing code savings, is 26.8 mgd. This represents an 8 percent increase in total service area demand over the 2001 base-year demand estimate. Sunnyvale uses multiple supply sources to meet its water demand. In 2030, Sunnyvale estimates it will purchase about 45 percent of its total 2030 water demand from the SFPUC and about 46 percent of remaining demand after conservation has been implemented, based on Sunnyvale's purchase estimate. The SFPUC portion of Sunnyvale's supply would supplement the city's conservation savings and use of recycled water, groundwater, and other surface water supplies (refer to Table 7.2). Sunnyvale's 2030 estimated purchase of 12.10 mgd from the SFPUC represents a 2.41 mgd, or 25 percent, increase over its 2001 purchases. Sunnyvale's current water supply assurance is 12.58 mgd.

The customer-selected population projection used for Sunnyvale in the demand study is generally consistent with the growth cited in the city's general plan and the growth projected by ABAG. The 2030 Sunnyvale population estimated in the demand study is approximately 2 percent less than that cited in the general plan and about 5 percent less than projected by ABAG.

The employment projection for Sunnyvale in the demand study is about 11 percent higher than the employment projection cited in the city's general plan, and about 37 percent higher than the *ABAG Projections 2005* employment projection.

## Westborough Water District

The Westborough Water District's total 2030 water demand and 2030 purchase estimate are based on the district's 2005 UWMP, as requested by the district and described below in this summary (Westborough Water District, 2005; Westborough Water District, 2007). Based on the UWMP, the district's 2030 water demand, taking into account plumbing code savings, is 1.03 mgd. This represents a 1 percent increase (0.01 mgd) in total service area demand over the 2001 base-year demand estimate. The SFPUC is Westborough's only source of potable water supply. In 2030, Westborough estimates it will purchase 100 percent of its total water demand from the SFPUC. Westborough's 2030 purchase estimate of 1.03 mgd is 1 percent higher (0.01 mgd) than its 2001 purchases. Although this purchase estimate does not explicitly include quantified conservation savings, the UWMP describes demand management programs that the district is currently implementing, those it plans to continue, and two new programs it plans to start during the 2006-2010 UWMP planning period. The purchase estimate originally submitted by the district indicated conservation savings of 0.02 mgd. Westborough's current water supply assurance is 1.32 mgd.

The district's total 2030 water demand, taking into account plumbing code savings, was calculated in the demand study to be 0.88 mgd. This represented an 11 percent decrease in total service area demand over the 2001 base-year demand estimate. In 2004, following completion of

the demand, conservation, and other related studies, Westborough submitted a purchase estimate of 1.2 mgd, an 18 percent increase over 2001 purchases, and 36 percent greater than the demand study's projected demand. Demand estimates in Westborough's UWMP, which was published in December 2005, differ from these demand study projections. In February 2007 Westborough Water District formally submitted a request to the SFPUC (Westborough Water District, 2007) that the district's calculation of future water demands in 2030 of 1.03 mgd, as cited in the UWMP, be used in SFPUC planning efforts.

The updated UWMP projection of 1.03 mgd demand and purchases in 2030 is 17 percent higher than was projected in the SFPUC demand study and 17 percent lower than the purchase estimate originally submitted by the district. The UWMP attributes the difference between its projected 2030 demand and the demand developed in the DSS model to "differing assumptions about the District's base year, and projected population" (Westborough Water District, 2005). The UWMP base year population estimates for 1990 and 2000 are from U.S. Census data for Census Tracts 6025 and 6026. The 2000 population is 13,033 and the projected 2030 population is 14,300 (a 10 percent increase) compared with the estimated 2001 base year population of 10,017 and 2030 projected population of 10,146 (a 1 percent increase) used in the demand study. (The BAWSCA [then BAWUA] annual survey was the source of population projections selected by Westborough Water District for the modeling exercise [URS, 2004a].)

Based on the information presented in the UWMP and the February 2007 letter from the Westborough Water District to the SFPUC, this PEIR uses the demand, purchase, and population estimates presented in the UWMP. To be consistent with previous and ongoing WSIP studies, the high-range purchase estimate total published in URS 2004b of 300 mgd, based on the previously submitted purchase estimates of Westborough and the other water customers, remains the SFPUC's 2030 purchase estimate for planning purposes.

Since the Westborough Water District serves only part of South San Francisco, the population projection used in the demand study is not comparable to that of the city as a whole. Refer to the discussion under CWS-South San Francisco for a comparison of combined water district projections with those of the city's general plan and ABAG.

## **SFPUC Retail Service Area**

The total 2030 water demand for San Francisco and the rest of the retail service area, taking into account plumbing code savings, is approximately 93.4 mgd. This represents a 0.2 percent decrease in total service area demand from the 2001 base-year estimate. The SFPUC regional water system is currently the only source of potable water supply for San Francisco and for the SFPUC's other major retail customers. In 2030, the SFPUC regional water system would provide about 86– 97 percent of total SFPUC retail service area water demand and 89 – 97 percent after conservation has been implemented. San Francisco's 2030 estimated purchase of 80 – 91 mgd from the regional water system represents a 10 percent decrease to 1 percent increase compared to 2001 SFPUC regional water system purchases. The low range of the purchase estimate would be supplemented by identified groundwater, recycled water and conservation programs totaling

10 mgd in San Francisco that are included as part of the WSIP proposed water supply option (refer to Table 7.2).

San Francisco's water demand projections are based on demographic projections that assume 12 percent growth in population and 25 percent growth in employment by 2030. The population projection used for San Francisco in the retail demand study is generally consistent with the growth cited in the city's general plan, and somewhat less consistent with the growth projected by ABAG. The 2030 population for San Francisco estimated in the demand study is approximately 5 percent more than indicated in the city's general plan and about 8 percent less than projected by ABAG in *Projections 2005* for 2030. At the time ABAG's draft *Projections 2005* was distributed to jurisdictions for review in 2004, the CCSF informed ABAG that San Francisco expects less growth by 2030 than is forecasted in *Projections 2005* and cited the estimates in the CCSF's 2002 Land Use Allocation as more realistic (Macris, 2004). The 2030 household population shown in SFPUC's UWMP, which were linearly extrapolated from City Planning estimates for 2000 and 2025, are the same as the population projection used in the demand study (849,942) (SFPUC, 2005).

The employment projection used for San Francisco in the retail demand study is about 7 percent higher than the employment projection cited in the city's general plan for 2020, and about 4 percent lower than the ABAG *Projections 2005* employment projection.

## 7.4 Indirect Effects of Growth

The WSIP would support planned growth and growth that is projected to occur in the service area by ABAG. Most of the projected population growth and much of the employment growth that would be supported by the SFPUC regional water system under the WSIP has been addressed in the adopted general plans of jurisdictions within the service area. The impacts of planned growth are identified and evaluated in the EIRs and other CEQA documents prepared by the jurisdictions for their general plans and related land use plans (such as general plan elements and specific plans that general plans are subsequently amended to incorporate). This section presents a summary of the impacts associated with planned growth in the service area and the mitigation measures adopted by the jurisdictions to reduce or eliminate those impacts. It includes a summary of the impacts commonly found to be mitigable and those commonly found not to be mitigable to a less-than-significant level. It also includes a summary of overriding considerations that were commonly identified by city councils in adopting land use plans despite the plans' unavoidable significant impacts. The WSIP would also support a degree of growth that, while consistent with the projections of the regional planning agency (ABAG), is not covered in adopted land use plans because the WSIP projections reflect more recent employment trends (i.e., the substantial job growth that occurred in the Bay Area in the latter part of the 1990s) than do most of the general plans and the WSIP planning horizon is longer than the planning horizon of the general plans. Therefore, this section also qualitatively describes the impacts that could result from growth supported by the WSIP beyond what has already been evaluated in the CEQA review of the adopted land use plans. Finally, as a means of gauging whether the impacts of projects developed in the planning area subsequent to adoption of the current general plans are being mitigated as

prescribed in the general plan EIRs, a review of the EIRs for several large projects was undertaken and is summarized in this section.

## 7.4.1 Impacts

### Significance Criteria

The EIRs prepared for the local general plans and related planning documents of the jurisdictions in the SFPUC service area evaluated the environmental effects associated with growth projected in the respective general plans. The impact findings identified in these environmental documents are incorporated by reference into this PEIR pursuant to CEQA Guidelines Section 15150 and are summarized here. Please see Section 1.3.5 in PEIR Chapter 1, Introduction, for a list of locations where documents incorporated by reference are available for public review.

### Approach to Analysis

This section provides a summary overview of the potential indirect effects of growth that could result from implementation of approved land use plans of the jurisdictions served by SFPUC water. In addition, this section reviews the role of the SFPUC and the jurisdictions in the wholesale service area in addressing these effects; provides a discussion of the key regional growth issues in the SFPUC service area; and reviews recent examples of environmental analyses conducted at the project level within the SFPUC service area.

**Impact 7-1: The WSIP would support planned growth in the SFPUC service area, although it appears that some growth would occur irrespective of the WSIP due to increased water delivery efficiencies (e.g., plumbing code changes), conservation, and other water supply sources. Planned growth would in turn result in indirect effects. In most cases, the effects of planned population and employment growth have been identified and addressed in the EIRs for the general plans and associated area plans and specific plans adopted by the jurisdictions in the service area. Some of the identified indirect effects of growth are significant and unavoidable; others are significant but can be mitigated.**

**In some areas the WSIP could support a degree of population and/or employment above that planned for in jurisdictions' adopted general plans, as indicated by a comparison of the levels of growth assumed in WSIP demand studies and general plan documents. In some jurisdictions (Foster City, Half Moon Bay, and Burlingame), the WSIP could support more population growth than is forecasted in adopted general plans. In some jurisdictions (East Palo Alto, Foster City, San Bruno, Fremont, Newark and Union City), the WSIP could support more employment growth than is forecasted in adopted general plans of the respective jurisdictions. To the extent that growth supported by the WSIP has not been fully analyzed in EIRs for the general plans and related land use plans of the jurisdictions served by SFPUC water, due to the WSIP's longer planning horizon, the WSIP would have impacts that are similar to, but potentially more severe than, the impacts identified in local general plan CEQA documents. To the extent the WSIP would support employment growth not fully anticipated in the general plans of jurisdictions in the service area because the general plans were prepared before the extent of the economic boom was realized, the WSIP would have impacts associated with economic development and higher numbers of**

**employees within the service area that are potentially new or more severe than impacts previously identified. These impacts would include traffic, air quality, noise, and demands on public services resulting from an influx of commuters from out of the area to jobs within the service area, and impacts resulting from increased demand for housing and other services within the service area to better accommodate the workforce. In addition, although the general plan EIRs reviewed for this PEIR were prepared prior to the passage of the California Global Warming Solutions Act of 2006 and do not include assessments of impacts from greenhouse gas emissions, it is expected that planned growth in the area could result in a significant and unavoidable contribution to increases in greenhouse gas emissions (e.g., from increased fossil fuel use for transportation and construction, increased industrial and commercial activities, residential energy use, operation of power plants, and oil refining).**

Potentially significant unavoidable impacts as a result of planned growth in the SFPUC service area have been identified in the following areas: traffic congestion, air pollution, traffic noise, construction noise, increased demand for public schools and other public services, loss of recreational opportunities and impacts on visual quality resulting from the loss of open space, cumulative effects on overutilized parks, loss of wildlife habitat and wetlands, cumulative impacts on cultural resources, increased flooding potential, increased urban runoff pollutants, seismic hazards, induced population growth, failure to meet housing demand for projected population growth, exposure of new development to contaminated soil or groundwater, insufficient water supply, insufficient wastewater disposal capacity, loss of agricultural resources, land use conflicts, conflicts with existing land use plans or policies, and changes in density, scale, and character of an area.

Impacts from growth in years beyond that evaluated in the EIRs for adopted land use plans would occur due to an increased density of development or the use of additional land area. Impacts from increased density could include additional traffic congestion, air pollution, noise, and demand on public services; land area (or “footprint”) impacts could include the loss of agricultural resources and open space, impacts on wildlife habitat and other biological resources, disturbance of cultural resources, increased soil erosion, and water quality impacts from increased urban runoff. In addition, to the extent that a water supply shortage is identified as a future impact, the WSIP would address the need for additional water supply.

The program would support much of the planned growth in the jurisdictions served by SFPUC water. In general, development planned and approved through the general plan process in the SFPUC service area would have environmental impacts. The environmental consequences of this planned growth have been largely addressed in local plans and the associated CEQA review as well as in other, project-specific documentation. In a number of jurisdictions, negative declarations or mitigated negative declarations were prepared for general plans and related planning documents that were found not to have significant environmental effects. The analysis presented in this section focuses on the significant effects of growth identified in general plan, area plan, and specific plan EIRs. These EIRs substantially address the impacts and mitigation measures identified in the mitigated negative declarations.

The planning documents and associated environmental documents listed below were reviewed for this analysis. The EIRs and City Council and Board of Supervisor findings resolutions are summarized in this PEIR (in this chapter and Appendix E, Section E.5) and are incorporated by reference pursuant to CEQA Guidelines Section 15150. Please see Section 1.3.5 in PEIR Chapter 1, Introduction, for a list of locations where documents incorporated by reference are available for public review. In addition to listed planning documents and EIRs, statements of overriding considerations adopted in conjunction with adoption of the general plans were also reviewed.

- Town of Atherton General Plan Revisions (2002a, 2002b, 2002c)
- City of Belmont General Plan (1982), San Juan Hills Area Plan EIR (1988a, 1988b), Western Hills Area Plan EIR (1990a, 1990b), Downtown Specific Plan (1995), Peninsula Corridor Specific Plan (2003), Housing Element, (2002a, 2002b, 2002c)
- City of Brisbane General Plan and EIR (1994a, 1994b, 1994c, 1994d), Housing Element (2002)
- City of Burlingame General Plan (1969, amended through 2002), Housing Element and Negative Declaration (2002a, 2002b, 2002c), Bayfront Specific Plan and Mitigated Negative Declaration (2004a, 2004b, 2004c), North Burlingame / Rollins Road Specific Plan and Negative Declaration (2004d, 2004e, 2004f)
- Town of Colma General Plan and Negative Declaration (1999a, 1999b, 1999c, 1999d)
- City of Daly City General Plan Land Use and Circulation Elements (1987a, 1987b), Housing Element and Negative Declaration (2004a, 2004b)
- City of East Palo Alto General Plan and EIR (1999a, 1999b, 1999c), Housing Element (2001a, 2001b)
- City of Foster City General Plan (1993, amended through 2001) and EIR (1993a, 1993b, 1993c, 1993d), Housing Element and Mitigated Negative Declaration (2001a, 2001b, 2001c)
- City of Fremont General Plan (1991, amended through September 1996) and EIR (1991a, 1991b, 1991c), Housing Element, Land Use Element Revisions, and Negative Declaration (2003a, 2003b, 2003c)
- City of Half Moon Bay Local Coastal Program Land Use Plan (1993)
- City of Hayward General Plan and EIR (2002a, 2002b, 2002c)
- Town of Hillsborough General Plan (2005) and Negative Declaration (2004), Housing Element and Negative Declaration (2002a, 2002b)
- Town of Los Altos Hills General Plan (1975), General Plan Path Element (1996), 2002 Housing Element (2002), Circulation Element (1999), Land Use Element (n.d.) and Open Space and Recreation Element (2007)
- City of Menlo Park General Plan Policy Document and Background Report and EIR (1994a, 1994b)

- City of Millbrae General Plan and EIR (1998a, 1998b), Millbrae Station Area Specific Plan and EIR (1998c, 1998d)
- City of Milpitas, 1994 General Plan and Negative Declaration (1994a, 1994b), 2002 Update of the 1994 General Plan, Housing Element, and Negative Declaration (2002a, 2002b, 2002c, 2002d); Midtown Milpitas Specific Plan EIR (2002e, 2002f, 2002g, 2002h)
- City of Mountain View General Plan (1992a, 1992b, 1992c), Housing Element and Initial Study (2002a, 2002b), Residential Neighborhood Chapter (2002c)
- City of Newark General Plan Update Project 2007 and EIR (1992a, 1992b, 1992c, 1992d, 1992e), Housing Element (2002a), Housing Element Negative Declaration and Negative Declaration Addendum (2002b)
- City of Pacifica General Plan (2001)
- City of Palo Alto Comprehensive Plan 1998–2010 and EIR (1998a, 1998b, 1998c), Housing Element (2002)
- Town of Portola Valley General Plan (1998, except for Housing Element, which appears to be 1990)
- City of Redwood City General Plan (1990a, 1990b), Downtown Precise Plan and EIR (2007a, 2007b, 2007c, 2007d)
- City of San Bruno General Plan and EIR (1984a, 1984b), Housing Element and Resolutions approving Housing Element and its Negative Declaration (2003a, 2003b, 2003c)
- City of San Carlos General Plan (1992); Housing Element, Draft Negative Declaration, and Resolution adopting Housing Element (2001a, 2001b, 2001c); Circulation Element and Negative Declaration (2005a, 2005b).
- City and County of San Francisco General Plan (1998), Housing Element (2004)
- City of San Jose 2020 General Plan (amended to May 2005) and EIR (1994a, 1994b), Housing Element (2003)
- City of San Mateo General Plan and EIR (1990a, 1990b, 1990c), Housing Element (2001) and Negative Declaration, (n.d.), and Circulation Element (2005) and Negative Declaration (n.d.)
- County of San Mateo General Plan and Board of Supervisors Resolution Adopting Findings Pursuant to the Final EIR (1986a, 1986b)
- City of Santa Clara General Plan 1990-2005 and City Council Resolution and Related Findings Certifying the Final EIR (1992a, 1992b, 1992c, 1992d, 1992e), General Plan 2000-2010 (including amendments since 1992) and City Council Resolution Adopting a Negative Declaration and General Plan Amendment (2002a, 2002b)
- County of Santa Clara General Plan and EIR (1994a, 1994b, 1994c), Housing Element (2003)



- City of South San Francisco General Plan (1999a, 1999b, 1999c) and Housing Element (2002a, 2002b)
- Stanford University Community Plan and EIR (County of Santa Clara, 2000a, 2000b, 2000c, 2000d, 2000e)
- City of Sunnyvale General Plan Elements: Housing and Community Revitalization Sub-element of the General Plan (2002a, 2002b), Land Use and Transportation Element of the General Plan (1997a, 1997b), Water Resources Sub-element of the General Plan (1996a, 1996b)
- City of Union City General Plan, Housing Element, and EIR (2002a, 2002b, 2002c, 2002d, 2002e, 2002f)
- Town of Woodside General Plan and Negative Declaration (1988a, 1988b), Housing Element (2002, 2003)

**Table 7.11** summarizes the environmental effects associated with planned growth in the program area, as identified in the general plan, area plan, and specific plan EIRs for the jurisdictions in the SFPUC wholesale customer and retail service areas. Because the table reflects the determinations of multiple jurisdictions, some impacts are listed as both significant and unavoidable and significant but mitigable, reflecting differences in the jurisdictions in the service area. Appendix E, Section E.5, Table E.5.1 presents a more detailed summary of the relevant growth impacts and mitigation measures identified in the EIRs for these local land use plans. These environmental impacts are the indirect effects of growth supported by the WSIP.<sup>32</sup>

### ***Significant and Unavoidable Impacts***

The environmental effects of growth most commonly identified as significant and unavoidable in the service area are increased traffic, cumulative traffic impacts, deterioration of air quality, the cumulative effects of increased air pollutant emissions, and noise impacts, primarily as a result of increased traffic. Traffic and air quality effects are discussed in greater detail below under “Key Regional Effects of Growth.”

The WSIP would address a significant unavoidable impact that was identified by two cities: increased demand for potable water supply. The WSIP provides for increased supply and related water treatment facility and storage upgrades to reliably meet projected demand (i.e., projected retail demand and projected wholesale customer purchase requests) to 2030. The SFPUC’s role in addressing this indirect effect of growth is discussed at the end of this subsection.

<sup>32</sup> To assess whether mitigation measures identified in general plan EIRs to reduce growth-related impacts are in fact being applied at the project level, a review of the EIRs of several current major projects in the service area was undertaken. The review indicated that the mitigation measures identified in general plan EIRs to reduce the adverse impacts of growth are being applied at the project level. Information on the review of the project EIRs is presented in Appendix E.6.

**TABLE 7.11**  
**SIGNIFICANT IMPACTS ASSOCIATED WITH PLANNED GROWTH IN THE PROGRAM AREA**

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**Significant and Unavoidable Impacts**

- Impacts due to the loss of open space (to development) on visual quality
- Alteration of the visual setting or degradation of existing views, and cumulative visual quality impacts
- Conversion of agricultural land to nonagricultural uses
- Cumulative loss of agricultural land
- Increases in air pollutant emissions and/or ozone precursors or violation of air quality standards
- Cumulative air quality impacts
- Impacts on natural habitat, including individual or cumulative loss of wetlands
- Cumulative impacts on cultural resources
- Exposure to seismic or geologic hazards
- Cumulative impacts on soil resources
- Exposure to soil or groundwater contamination
- Cumulative effects from increased exposure to man-made hazards
- Increases in impervious surfaces and/or alterations to drainage resulting in exposure to flood hazards and/or the need for new drainage facilities
- Water pollution from stormwater runoff
- Land use impacts
- Cumulative impacts from the depletion of nonrenewable resources and the alteration of landforms
- Noise impacts, including increases in traffic noise, exposure to construction noise, and exposure to aircraft noise
- Impacts related to population growth (directly or indirectly induced) and jobs/housing balance
- Increased demand for schools and/or other public facilities
- Loss of recreational open space
- Cumulative impacts on recreational facilities
- Local and regional traffic impacts
- Cumulative traffic impacts
- Impacts on landfill capacity
- Increases in water demand
- Large and wasteful increase in energy consumption and cumulative energy-related impacts

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**Significant but Mitigable Impacts**

- Impacts on scenic resources, including resources within a scenic highway
- Creation of new source(s) of light and glare
- Alteration of visual setting or degradation of existing views
- Conversion of agricultural land to nonagricultural uses
- Conflicts between agricultural uses and adjacent land uses
- Construction-related air quality impacts
- Exposure of new sensitive land uses to toxic air contaminants and/or odor emissions sources
- Increases in air pollutant emissions
- Conflicts with, or obstruction of, the implementation of an applicable air quality attainment plan or related plan
- Impacts on/loss of special-status species
- Impacts on biological resources due to individual or cumulative impacts on wetlands, riparian habitat, or other sensitive habitat
- Conflicts with local policies or ordinances protecting biological resources
- Disruption of wildlife migration or travel corridors
- Cumulative impacts on biological resources
- Individual or cumulative impacts on historical, archaeological, and/or paleontological resources
- Disturbance of human remains

**TABLE 7.11 (Continued)**  
**SIGNIFICANT IMPACTS ASSOCIATED WITH PLANNED GROWTH IN THE PROGRAM AREA**

**Significant but Mitigable Impacts (continued)**

- Exposure to seismic, geological, or soils-related hazards
- Exposure to flooding due to levee or dam failure
- Increased risk of wildland fires
- Release of or exposure to hazardous materials
- Increased risk of structural fires and degree of damage from industrial chemical fires
- Impacts related to emergency response
- Degradation of surface water and/or groundwater quality
- Construction impacts on water quality
- Increased surface runoff and flood hazard
- Incompatible and/or inappropriate land uses; conflicts between adjacent land uses
- Loss of agricultural land or premature urbanization of rural areas
- Inefficient land use patterns
- Intensification of land uses
- Exposure to excessive noise levels or groundborne vibration
- Permanent or substantial temporary or periodic increases in ambient noise levels
- Construction noise impacts
- Increased traffic noise
- Increased demand for housing and related impacts on housing affordability
- Increased demand for special housing needs
- Substantial population and/or job growth
- Jobs/housing imbalances, oversupply of jobs
- Increased demand for and/or impacts on public services and facilities, including increased need for new fire and police facilities, schools, parks, and other public facilities
- Increased demand for new or expanded recreational facilities
- Loss or degradation of recreational open space
- Local and regional traffic impacts
- Congestion impacts on transit service and bicyclists
- Construction traffic impacts
- Increased traffic safety concerns
- Impacts on landfill capacity or demand for solid waste services
- Increased demand for new or expanded water and wastewater facilities
- Need for new or expanded stormwater drainage facilities
- Increased demand on water supply
- Increased demand for public utilities
- Increased demand for energy

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SOURCES: City of Belmont, 1988a; 1990a; City of Brisbane, 1994b; City of East Palo Alto, 1999a; City of Foster City, 1993b; City of Fremont, 1991b; City of Fremont 1991c; City of Hayward, 2002b; City of Menlo Park, 1994b; City of Millbrae, 1998b; City of Millbrae, 1998d; City of Milpitas, 2002e; City of Mountain View, 1992b; City of Newark, 1992b; City of Palo Alto, 1998b; City of Redwood City, 2007a; City of San Bruno, 1984a; City of San Jose, 1994b; City of San Mateo, 1990b; City of Santa Clara, 1992b; City of Union City, 2002c; County of San Mateo, 1986b; County of Santa Clara, 1994b; County of Santa Clara, 2000b.

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Measures to partially mitigate traffic impacts identified in the EIRs include participation in regional transportation planning, implementation of local and regional transit/transportation plans, promotion of alternative modes of transportation, implementation of roadway- and intersection-specific improvements (e.g., adding various combinations of turn lanes and through lanes and expanding intersection capacity), and encouragement of higher density development and supportive uses around transit stations. Measures to partially mitigate air quality impacts identified in the EIRs include participation in regional planning efforts to improve air quality, requiring measures to reduce construction emissions (both equipment emissions and dust), and implementation of many of the same (or similar) measures adopted to improve traffic impacts, such as encouraging alternative forms of transportation, improving roadways to maintain efficient vehicular movement, and encouraging higher density infill development and mixed uses. Measures to partially mitigate noise impacts identified in the EIRs include adoption and enforcement of noise ordinances, requiring the use of construction practices to protect sensitive receptors, and requiring project-specific review of noise impacts and project mitigation measures such as setbacks, buffering, and insulation. (Refer to Appendix E, Section E.5 for a more detailed summary of the mitigation measures.)

### ***Overriding Considerations***

Jurisdictions may approve land use plans that would result in significant unavoidable impacts by adopting statements of overriding considerations pursuant to CEQA; these statements provide the rationale for approving a plan despite its significant unavoidable impacts. In the SFPUC service area, some jurisdictions have determined that certain social, economic, and/or other considerations outweigh the adverse environmental effects. These considerations are summarized in **Table 7.12**. Of the key overriding considerations identified in the table, the following considerations were commonly identified by the local jurisdictions in the region:

- Accommodation of growth in an orderly, fiscally sound manner
- Economic diversification and job generation
- Creation of housing, furtherance of regional housing share objectives, and provision of affordable housing
- Improvement of the local jobs/housing balance
- Increased sales revenue and positive fiscal impact
- Promotion of alternative modes of travel to private vehicles; reduction in reliance on private vehicles
- Establishment of policies to preserve natural areas and open space lands

### ***Impacts Commonly Identified as Significant but Mitigable***

Impacts commonly identified as significant but mitigable by jurisdictions in the service area include obstruction of views or alteration of the visual setting; construction-related air quality impacts; adverse impacts on habitat and wetlands; impacts on historical, archaeological, or paleontological resources, including potential disturbance of unknown cultural resources; exposure to seismic and geologic hazards; creation of a hazard related to the use or transport of

**TABLE 7.12**  
**KEY OVERRIDING CONSIDERATIONS FOR SIGNIFICANT**  
**UNAVOIDABLE IMPACTS OF PLANNED GROWTH AND DEVELOPMENT**

- Compliance with legal mandates to adopt and maintain a comprehensive long-term plan
- Provision of a database and statement of policies to guide decision-making
- Policies that assure adequate mitigation of land use impacts
- Realization of a comprehensively planned community that provides for a logical extension of services, including law enforcement, fire protection, parks, and public utilities
- Provision of coordinated guidance in addressing the impacts of new development and redevelopment within the urban area while not substantially increasing traffic, noise, and seismic impacts compared to existing trends
- Policies and strategies to alleviate some environmental effects that are not otherwise addressed in routine land use planning or through the existing general plan elements
- Strengthened community and neighborhoods, protection of neighborhoods from commercial encroachment, and encouragement of participation in community and governmental activities
- Facilitation of public participation and the continuation of the city's desire to provide leadership on issues of regional interest
- Protection of community character
- Enhanced public facilities and programs
- Improvement of infrastructure
- Expanded opportunities for economic activities and development; increased economic vitality
- Economic growth that supplies jobs for existing and future residents while protecting environmental resources and prudently managing traffic capacity
- Economic benefits, including increases in new jobs, sales tax revenues, and property tax revenues
- Creation of new sources of employment and income to the city
- Increased diversity of employment opportunities
- Provision of a wide range of new employment opportunities and shopping opportunities
- Improvement of jobs/housing balance and provision of more opportunities for revenue-generating uses
- Balance of residential and commercial interests
- Increased housing opportunities
- Increased diversity of housing types, including affordable housing
- Achievement of affordable housing goals and maintenance of social diversity while protecting environmental resources
- Targeting of state-mandated "fair share" requirements for new housing units as a goal, including creation of affordable housing to help maintain the city's economic base without incurring even greater adverse impacts on the area's air quality due to greater commute distances required for local employees
- Increase in the amount of affordable housing and the ability of the city to contribute its fair share of regional housing opportunities
- Alternatives to residential infill within existing residential neighborhoods that are affected by airport noise would create more adverse impacts than new residential infill
- Encouragement and support of school districts to take specific mitigatory action(s), where appropriate
- Improved transportation and circulation systems
- Reduction of reliance on the automobile
- Enhanced transit-oriented development at transit hubs
- Improved local and regional transit connections through development of intermodal facility and high-density office and residential uses in transit station area
- Long-term preservation and maintenance of sensitive ecosystems, open space, and aquatic resources
- Policies, programs, and land use designations that enhance the preservation of natural resources
- Installation of open space, park, recreation, and resource protection amenities
- Environmental benefits resulting from incorporation of innovative and extensive environmental mitigation
- Designation of new areas and retention of substantial existing areas of land for open space, and provision of neighborhood and community parks for a variety of open space and recreational opportunities for the city and region
- Providing for recreational needs of the existing and future population
- Impacts that cannot feasibly be mitigated to a less-than-significant level would occur whether or not the general plan or any feasible alternative were adopted
- Policies that direct future urban development into the cities
- Policies that minimize the potential loss of rural open space surrounding urban areas within the county
- Providing for planned urban expansion, in contrast to urban sprawl, thereby decreasing demand for government revenues for public infrastructure and services
- Enhanced cultural, recreational, and educational facilities and a modern government center, enabling the city to provide more efficient service in an inviting setting

SOURCES: City of Belmont, 1988b; City of Belmont, 1990b; City of Brisbane, 1994d; City of East Palo Alto, 1999c; City of Foster City, 1993d; City of Fremont, 1991c; City of Hayward, 2002c; City of Menlo Park, 1994b; City of Milpitas, 2002f; City of Mountain View, 1992c; City of Newark, 1992c; City of Palo Alto, 1998c; City of Redwood City, 2007c; City of San Bruno, 1984b; City of San Mateo, 1990c; City of Santa Clara, 1992b; City of Union City, 2002e; County of Santa Clara, 1994c; County of Santa Clara, 2000e.

hazardous materials; exposure of people and property to flooding; water quality impacts; land use incompatibilities; increased noise, including ambient noise levels and short-term construction noise; increased housing demand; increased demand for public services, including fire and police protection, schools, recreational facilities, and other public services; and increased need for new or expanded water or wastewater treatment facilities. Appendix E, Section E.5, Table E.5.1 summarizes these impacts. The WSIP addresses water supply needs reflected in the retail demand studies and wholesale customer purchase estimates (discussed further in the following section).

### ***Impacts of Planned Growth to 2030***

As discussed above (and in Chapter 3, Program Description), the WSIP would meet the SFPUC's regional water system purchase requests in the wholesale and retail service areas to the year 2030. The demand projections for the retail service area and each wholesale customer service area were developed using a detailed end-use model that employed ABAG's population and employment projections or the projections of a limited number of other local agencies. Thus, the projections reflect the future growth expectations of the regional planning agency or other agencies with knowledge of the service area.

In most cases, the levels of population growth reflected in the 2030 water customer-selected population projections are generally consistent with the population growth projected in the respected general plans, as indicated by the general plans' projected population (see Table 7.8). That growth, therefore, has been addressed in the adopted general plans, and the growth-related impacts have been analyzed in the general plans' impact analyses. The additional availability of water and improved water supply reliability through the WSIP would support a portion of this growth. In a few cases, the general plans do not project population growth into the future to the degree assumed in the WSIP. In these cases, the WSIP would support a degree of population growth beyond the level that is projected in the adopted general plans.

For the most part, the employment growth reflected in the 2030 water customer-selected population projections also is generally consistent with the employment growth projected in the respected general plans, as indicated by the general plans' projected employment shown in Table 7.9. However, there has been much more recent employment growth, and greater fluctuations in employment levels, in the region compared with populations. As a consequence, not all of the employment growth reflected in water customer-selected projections is reflected in the general plans of respective jurisdictions. Therefore, while much of the employment growth expected in the area has been addressed in the adopted general plans, the WSIP would support a degree of employment growth that has not been addressed in the jurisdictions' general plans nor have the impacts associated with such growth been fully analyzed in the CEQA documents prepared for the planning documents.

Two principal factors account for the discrepancy between WSIP population projections and those of general plans in the service area. One is the WSIP's 2030 planning horizon, which extends farther into the future than the general plan horizons of jurisdictions served by SFPUC

water.<sup>33</sup> The other is the age of some jurisdictions' general plans, several of which were adopted more than 10 years ago.

The above two factors, and a third, are the principal factors that account for the discrepancy between WSIP employment projections and those of general plans in the service area. The third factor is the economic boom and recession that occurred in the Bay Area in the 1990s and first half of the current decade. Phenomenal job growth occurred during the "dot com boom" was not captured in projections prepared prior to this boom, while the extent of job losses in early 2000s was not fully capture in projections prepared in the early 2000s. As the comparison of the last three ABAG projections sets suggest, although there are differences between the individual projections, by 2030 a similar level of employment is expected for the area as a whole.

The impact discussion in the previous section describes the indirect effects of planned growth in the service area; these effects were identified and evaluated in the EIRs produced for the general plans and related land use planning documents that guide the nature and extent of development in the service area. As noted above, however, the effects of greenhouse gas emissions were not addressed in these prior EIRs. Given that the WSIP projections extend beyond the projections of many adopted general plans, especially in terms of expected employment growth, this analysis also considers the potential impacts of growth that could occur beyond the projections indicated in local general plans and related land use plans. In contemplating the potential impacts of growth beyond the previously evaluated growth, it is important to consider the following:

- Most of the service area is urbanized; many of the jurisdictions experienced peak growth periods in previous decades, with slowing growth rates in more recent decades. Urban areas provide less opportunity for substantial growth beyond existing city limits or spheres of influence. Thus, these communities are subject to certain physical constraints (such as neighboring jurisdictions) that would preclude major changes from current planning policies and growth trends.
- Various jurisdictions have identified increased densities and infill development as important means to accommodate future development. In addition to constraints on available land and fewer options to grow laterally, more compact development is being adopted by some jurisdictions in recognition of its value in supporting public transit systems. The promotion of public transit, in turn, is increasingly recognized as a way to alleviate traffic problems in the region. Infill development is generally consistent with ABAG assumptions about smart growth. Given such trends in current planning documents and the promotion of smart growth principles by the regional planning agency, it is reasonable to assume that as general plans are updated to guide future growth (i.e., through the 2030 WSIP buildout), city planners will continue to seek solutions to planning issues that minimize the extent of adverse environmental effects.
- Notwithstanding the constraints to lateral expansion that exist for many jurisdictions, some jurisdictions abut less-developed unincorporated county lands; therefore, at least some jurisdictions could conceivably annex portions of adjacent unincorporated areas to accommodate the jurisdiction's anticipated development.

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<sup>33</sup> As discussed in Section 7.2, water agencies typically have a longer planning horizon than do local land use planning agencies because of the time required to plan, permit, and construct water supply infrastructure.

Based on the above considerations, the growth supported by the WSIP beyond the level evaluated in adopted land use plans would likely have impacts related to increased density or the development of new land areas, potentially resulting in impacts that are more severe than those identified in the EIRs of adopted land use plans and plan elements.

- Impacts from increased density of development include increased traffic congestion, air pollution, traffic noise, construction noise, and increased demand on public services. On the other hand, it should be noted that accommodating growth by increasing the density of development can help offset some of these identified impacts if it provides sufficient density to support development of public transit or neighborhood retail businesses that help reduce dependency on the use of private vehicles.
- Land area impacts include the loss of open space and agricultural land, loss of wildlife habitat and related impacts on biological resources, potential impacts on cultural resources, and increased impervious surface area, resulting in interference with groundwater recharge and the degradation of surface water quality from polluted runoff.
- Because the WSIP impacts would be similar in kind to those identified in jurisdictions' general plan and plan element EIRs, albeit potentially more severe, the mitigation measures identified in the general plan EIRs (summarized in Appendix E, Section E.5) should apply to such impacts and would serve to reduce them.
- Impacts from employment growth beyond that evaluated in jurisdictions' general plans include increased traffic, especially if workers would be commuting from outside the bay area to new jobs forecasted to occur by 2030; air quality and noise impacts as a result of the increased traffic, and impacts on various public services.

## **Project-Level Impacts of Growth**

As part of this PEIR analysis a selection of EIRs of major projects currently being undertaken in the SFPUC service area were reviewed. The purpose of the review was to assess whether, at least for the small selection of EIRs reviewed, the mitigation measures identified in general plan EIRs were being implemented at the project level. The specific impacts of a project necessarily depend on its particular circumstances, such as the location and nature of the project. Nevertheless, the review indicated that in these instances mitigation measures are being identified to reduce the impacts of growth consistent with measures identified in the general plan EIRs. A summary of the project review and table of impacts and mitigation measures associated with each is included in Appendix E, Section E.6, of this PEIR.

## **WSIP Role in Addressing the Indirect Effects of Growth**

Three jurisdictions in the SFPUC service area identified demand on existing water supply as a significant or significant unavoidable impact. This section summarizes the water supply impacts and mitigation measures identified by these jurisdictions in their general plans and associated EIRs. However, the demand projections in these general plan EIRs are somewhat outdated in that their horizon years are 2000 and 2005, and actual demand (according to 2001 records) has proven to be somewhat different from the EIR projections. The WSIP would help to meet the future demand of these jurisdictions to 2030 (as currently projected by the water agencies that serve them).



The Foster City *General Plan Revision EIR* (1993b) identified increased water demand resulting from future development as a significant and unavoidable cumulative impact. Estero MID, which provides water service to Foster City, obtains all of its water from the SFPUC. The EIR projected that cumulative water demands on the SFPUC system would exceed the system's capacity. As mitigation, the EIR identified a measure requiring new projects to pay fair share contributions to infrastructure improvements, and a measure requiring water conservation in existing and new development; however, the EIR concluded that the impact could not be fully mitigated through these measures. The WSIP would help meet increased demand projected by Estero MID, thus alleviating an impact related to insufficient supply. However, the timeline and current demand estimates have been substantially revised since the general plan EIR was published. The 1993 EIR projected water demand requirements to the year 2000 and estimated that average daily demand that year would be about 7.2 mgd. By contrast, the SFPUC's wholesale demand study cites an Estero MID 2001 demand of 5.8 mgd, and projects its 2030 demand at 6.8 mgd—less than was estimated in the General Plan than for 2000.

The *City of San Mateo Proposed General Plan Revisions EIR* (1990b) also identified inadequate water supply as a significant unavoidable impact. San Mateo receives water from the CWS–Mid-Peninsula District and Estero MID; 77 percent of CWS-Mid Peninsula District service area is within San Mateo and 10 percent of the Estero MID service area is within San Mateo. Both water agencies obtain all of their water from the SFPUC. The EIR projected that San Mateo's demand would increase from 10.2 mgd in 1988 to 12.1 mgd in 2005, and that the existing 1990 water supply contract (of 184 mgd for the wholesale service area as a whole) would not be adequate to meet the needs of the wholesale service area in 2005. As mitigation, the EIR specified conservation measures (i.e., requiring new development to install water-saving bathroom fixtures and use drip irrigation) and inquiry into the use of groundwater for irrigation of public parks and facilities.

As it turned out, 2001 purchases for the wholesale service area totaled 171 mgd (URS, 2004b), somewhat less than the 184 mgd contract limit the general plan EIR indicated would be inadequate to meet service area demand in 2005. In addition, according to the latest BAWSCA annual survey (BAWSCA, 2006b), purchases of SFPUC water for the wholesale service area in FY 2004/2005 totaled 167 mgd. The wholesale demand study estimated base year (2001) demand for the CWS–Mid-Peninsula District to be 17.9 mgd and 2005 demand to be 17.5 mgd, and projected that 2030 demand would increase to 18.1 mgd. The 2001 demand for Estero MID was estimated at 5.8 mgd, 2005 demand at 6 mgd, and 2030 demand at 6.8 mgd. Based on these numbers and San Mateo's share of the total (based on the percentage of these two wholesale customers within the San Mateo jurisdictional boundary), 2001 demand for San Mateo was approximately 13.8 mgd and estimated demand for 2005 was 14.1 mgd, somewhat higher than was projected for 2005 in the 1990 EIR. Assuming the current proportion of service from the two districts, San Mateo's projected demand for 2030 would be approximately 14.8 mgd. Obviously, the WSIP was not available to mitigate the impact of insufficient water supply projected in the general plan EIR for 2005; it is, however, designed to address projected future capacity shortfalls in the wholesale service area and to meet 2030 purchase requests of the two districts serving San Mateo.

The *City of Fremont General Plan Final Program EIR* (1991b) identifies effects on water supply due to increases in population and employment as a significant but mitigable impact. However, the focus of the impact and its mitigation is on the share of the city's supply from the State Water Project. As mitigation, the EIR identifies general plan policies intended to conserve water, and also recommends that Fremont work with area cities and water districts to find a means of increasing the state's water supply for the area. The ACWD, the wholesale customer that serves Fremont, Newark, and Union City, projects an increase in purchases from the SFPUC of only 1.8 mgd above the FY 2001/2002 purchase of 11.99 mgd (to 13.76 in 2030), although the total projected increase in demand for ACWD is 8.2 mgd. The WSIP would meet the ACWD's 2030 purchase estimate.

## Key Regional Effects of Planned Growth

This section provides a summary discussion of the key regional effects in the SFPUC service area identified in general plan EIRs, which concern traffic, air quality, and water quality.

### **Traffic and Circulation**

Planned growth in the SFPUC service area is expected to significantly affect local and regional transportation systems, including roadways, highways, transit, and pedestrian and bicycle facilities. Transportation impacts as a result of planned growth in the service area include the following (see Appendix E, Section E.5):<sup>34</sup>

- Increased traffic relative to existing traffic and the capacity of the street system (significant and unavoidable)
- Degradation of levels of service on area roads or highways (significant and unavoidable)
- Increased vehicle delays at area intersections and impacts on intersections in adjacent cities (significant and unavoidable)
- Declines of average speeds on individual roadway segments (significant but mitigable)
- Cumulative traffic impacts on roadway segments and/or intersections (significant and unavoidable)
- Traffic safety impacts (significant and unavoidable)
- Impacts on parking capacity (significant but mitigable)
- Traffic congestion interference with transit service and/or bicycle levels of service (significant but mitigable)
- Constraints on providing for bicycle and pedestrian travel as a result of increased competition for use of roads and highways by motor vehicles (significant but mitigable)

<sup>34</sup> The most severe level of impact cited by any jurisdiction is indicated; the same impact may have a less severe (or no) effect in some jurisdictions.

- Loss of homes due to road widening (significant and unavoidable)
- Construction traffic impacts (significant but mitigable)

As mitigation for traffic and circulation impacts, the general plan EIRs of numerous jurisdictions specify coordination and cooperation with other agencies to develop or improve regional transportation facilities. The following is an overview of the agencies responsible for transportation planning in the four counties of the SFPUC service area.

Transportation planning is addressed at the regional level by the Metropolitan Transportation Commission (MTC), the agency responsible for transportation planning, coordination, and financing for the nine-county Bay Area. California state law requires every county that includes an urbanized area to develop, and update biennially, a congestion management program (CMP). The congestion management agency (CMA) of each county is responsible for developing the CMP. In order to receive state and federal funds, transportation projects must be recommended by that county's CMA as part of its CMP. The CMAs for each of the four counties are as follows: the Alameda County Congestion Management Agency, the Santa Clara Valley Transportation Authority, the City/County Association of Governments of San Mateo County, and the San Francisco County Transportation Authority.

The MTC is responsible for updating the regional transportation plan, a comprehensive, long-range document that charts the future development of mass transit, highway, airport, seaport, railroad, bicycle, and pedestrian facilities. The current plan, *Transportation 2030*, promotes smart growth development patterns through programs that link transportation and land use decisions.

### **Air Quality**

The four counties served by the SFPUC are located in the San Francisco Bay Area Air Basin (SFBAAB). The SFBAAB lies to the west of the Coast Range mountains, which, in the Bay Area, split into western and eastern ranges. San Francisco Bay lies between the two ranges. Air flows into the SFBAAB from the west at the Golden Gate, and then flows out of the SFBAAB to the east at the Carquinez Strait (where it enters the neighboring San Joaquin Valley Air Basin). The SFPUC service area is located in 3 of 11 climatological regions of the SFBAAB: West Alameda, Santa Clara Valley, and Peninsula. Of these, air pollution potential is highest in the Santa Clara Valley, where high summer temperatures, stable air, and the surrounding mountains combine to promote ozone formation. There are also many emissions sources within and upwind of these areas. West Alameda has a relatively high pollution potential during the summer and fall. Planned growth in the SFPUC service area is expected to significantly affect air quality within the air basin. Impacts on air quality as a result of planned growth in the service area include the following (see Appendix E, Section E.5):<sup>35</sup>

- Increases in air emissions and/or ozone precursors (significant and unavoidable)

<sup>35</sup> The most severe level of impact cited by any jurisdiction is indicated; the same impact may have a less severe (or no) effect in some jurisdictions.

- Periodic construction- and/or demolition-related air quality impacts (significant but mitigable)
- Violation of stationary source air quality standard or contribution to an existing or projected air quality violation (significant and unavoidable)
- Increases in exhaust emissions from traffic (significant and unavoidable)
- Cumulative impacts on regional air quality in the Bay Area (significant and unavoidable)
- Exposure of new sensitive land uses to toxic air contaminant or local odor emissions sources (significant and unavoidable)
- Conflicts with, or obstruction of, the implementation of an applicable air quality attainment plan or congestion management plan (significant but mitigable)

With respect to federal air quality standards, the SFBAAB is designated as nonattainment for ozone, unclassified for fine particulate matter, and attainment for other applicable criteria pollutants. With respect to state air quality standards, the SFBAAB is designated as nonattainment for ozone and particulate matter, unclassified for hydrogen sulfide, and attainment for other criteria pollutants.

The Bay Area Air Quality Management District (BAAQMD) is the regional agency responsible for air quality regulation within the SFBAAB. The BAAQMD's *Clean Air Plan* (CAP), last adopted in 2000, applies control measures to stationary and mobile sources and outlines transportation control measures. Although the 2000 CAP is an ozone plan, it includes attainment planning for particulate matter as an informational item. The 1997 CAP and 2000 CAP included 19 transportation control measures, many of which were partially implemented between 1998 and 2000. The 2000 CAP continues to implement and expand key mobile-source programs included in the 1997 CAP.

In response to the federal designation as nonattainment for ozone, the BAAQMD, ABAG, and MTC prepared and adopted an ozone attainment plan to meet the federal standard. The current plan, adopted in 2001, updates and supplements the previous (1999) ozone attainment plan and contains control strategies for stationary and mobile sources. To achieve compliance with the state and federal ozone standards, in September 2005 the BAAQMD, MTC, and ABAG prepared the draft *Bay Area 2005 Ozone Strategy*. This document shows how the San Francisco Bay Area will achieve compliance with the state and federal ozone standards, reduce transport of ozone to neighboring air basins, and fulfill California Clean Air Act planning requirements for the state ozone standard. The draft ozone strategy includes stationary-source control measures, mobile-source control measures, and transportation control measures. (Refer to Section 4.9, Air Quality, for more information.)

The BAAQMD reviews proposed development projects and has permit authority over most types of stationary emission sources. The BAAQMD can impose emission limits, set fuel or material specifications, or establish operational limits to reduce air emissions. The BAAQMD also regulates new or expanding stationary sources of toxic air contaminants. Measures identified in

the general plan EIRs to mitigate air quality impacts include working with the BAAQMD to include specific measures in the CAP, but more commonly involve transportation issues and the promotion of alternative modes of transportation.

As discussed under Impact 7.1, above, it is expected that planned growth in the existing SFPUC service area also could contribute to significant increases in greenhouse gas (GHG) emissions. Since the California Global Warming Solutions Act of 2006 (AB 32) was recently codified (in September 2006), the general plan EIRs reviewed for this PEIR do not address the impact of planned growth on GHG emissions and climate change. Because AB 32 limits statewide GHG emissions to 1990 levels, increases in GHG emissions associated with planned growth could impede achievement of mandated future reductions in GHG emissions, which would be a potentially significant and unavoidable impact. AB 32 requires the California Air Resources Board (CARB) to establish a GHG emissions cap for 2020 as well as to adopt Early Action Measures and a plan to ensure that emissions reductions (as mandated by AB 32) will be achieved. All future growth will be required to comply with the CARB's adopted measures by January 1, 2011 (enforced by January 1, 2012). Adherence to these measures will presumably achieve reductions that would help minimize overall GHG emissions increases. However, there is insufficient information available at this programmatic level of analysis to determine the extent of GHG emissions that may result from planned growth in the SFPUC service area and the relationship between CARB's Early Action Measures and growth-related sources of GHG emissions.

### ***Hydrology and Water Quality***

Planned growth in the SFPUC service area is expected to significantly affect hydrology and water quality. These impacts include the following (see Appendix E, Section E.5):<sup>36</sup>

- Degradation of surface water and/or groundwater quality (significant but mitigable)
- Increases in impervious surfaces and/or alteration of area drainage resulting in flood hazards and/or the need for new drainage facilities (significant and unavoidable)
- Exposure to people and property to flooding (significant but mitigable)
- Flood hazards, including hazards related to potential dam failure (significant but mitigable)
- Water pollution from stormwater runoff (significant and unavoidable)
- Erosion and sedimentation impacts from increased runoff from inadequately designed drainage systems (significant but mitigable)
- Increased demand on groundwater resources (significant but mitigable)
- Increased frequency and severity of downstream flooding due to increase in impervious surfaces from cumulative development (significant but mitigable)

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<sup>36</sup> The most severe level of impact cited by any jurisdiction is indicated; the same impact may have a less severe (or no) effect in some jurisdictions.

The California State Water Resources Control Board and the nine Regional Water Quality Control Boards (RWQCBs) implement and enforce the National Pollutant Discharge Elimination System (NPDES) program, which was established to protect water quality under the federal Clean Water Act. Water quality is regulated at the state level under the Porter-Cologne Water Quality Control Act through standards and objectives set forth in water quality control plans, known as basin plans. The San Francisco Bay RWQCB regulates water quality in the SFPUC service area through its basin plan, which was adopted in 1995. Stormwater in Alameda, Santa Clara, and San Mateo Counties is managed in accordance with an NPDES permit from the San Francisco Bay RWQCB. The NPDES permit includes a comprehensive plan to reduce the discharge of pollutants and requires participating communities to implement an approved stormwater management plan. The stormwater programs incorporate construction controls, stormwater ordinances and other regulatory approaches, public education and industrial outreach, inspections, wet-weather monitoring, and special studies. In 2003, the San Francisco Bay RWQCB updated provisions in its municipal stormwater permits to require that new development and redevelopment projects incorporate treatment measures and other source control and site design features to reduce the level of pollutants in stormwater discharges and to manage runoff flows. Mitigation measures typically identified in general plan EIRs in the SFPUC service area include requiring development projects to incorporate best management practices consistent with the NPDES permit, identify and remediate drainage system deficiencies, and implement erosion and sediment control plans for construction projects.

### **Conclusion: Indirect Effects of Growth Supported by the WSIP**

As indicated above, the WSIP would indirectly contribute to environmental impacts caused by growth; some of these impacts would be unavoidable.

The WSIP would support some of the growth that is reflected in the adopted land use plans of jurisdictions in the SFPUC service area. The EIRs prepared for general plans and related land use plans in the service area identified impacts of planned growth and mitigation measures to reduce the identified impacts. Some of the impacts of planned growth cannot be reduced to a less-than-significant level. In these cases, the respective decision-making body (e.g., city council) identified overriding considerations that justified adoption of the general plan despite its adverse impacts. Due to the longer planning horizon of the WSIP and relative age of some of the adopted general plans, and differing expectations about the level of job growth that will occur in the coming decades, not all of the growth that the WSIP would in part support has been addressed in adopted land use plans or evaluated in the plans' CEQA documents. Therefore, the WSIP could result in impacts that are somewhat more severe than those identified in the general plan EIRs, although it is likely that the impacts would be similar in kind to those previously identified. Potential impacts beyond those previously identified would generally be related either to increased density of development or to the conversion of less developed areas to urban uses. The measures specified in adopted general plans to mitigate the impacts of growth should also serve to reduce impacts of the WSIP.

The key regional effects of planned growth relate to air quality, traffic congestion, and water quality. Regional agencies, including the MTC, BAAQMD, and RWQCB, and the jurisdictions in the service area, are working both regionally and locally to address these impacts.

By providing water to support planned growth, the WSIP would help to mitigate the environmental impact identified in general plan EIRs for some jurisdictions in the service area of insufficient water supply.

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