

Appendix E

Growth Inducement Potential and Supporting Information

APPENDIX E

Growth Inducement and Supporting Information

This appendix supplements the information provided in Chapter 7, Growth Inducement Potential and Indirect Effects of Growth, of the WSIP PEIR. In separate subsections it provides information on the following topics:

- E.1 Water Supply Assurances
- E.2 Methodology the SFPUC used to develop 2030 water demand projections and the studies conducted to evaluate potential conservation measures and recycled water projects to help meet future demand, which together provided the basis for the 2030 purchase estimates submitted to the SFPUC.
- E.3 Supplementary information on population, employment, and water demand projections in the SFPUC water service area.
- E.4 Growth trends and policies of a selection of jurisdictions in the service area.
- E.5 Indirect effects of growth and measures identified to mitigate those effects.
- E.6 Project level impacts of growth.

APPENDIX E.1

Water Supply Assurances

Under the terms of the 1984 Settlement Agreement and Master Sales Water Contract (Master Sales Agreement) between the City and County of San Francisco and its suburban water purchasers (the SFPUC wholesale customers) (City and County of San Francisco, et al., 1984), the SFPUC is required to supply up to 184 million gallons per day (mgd) on an annual average basis to the wholesale customers, subject to reductions in the event of a drought, water shortage, earthquake, or other natural disaster, and for rehabilitation and maintenance of the system. In addition, 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 most cases, the individual supply assurances specify the amount of water the wholesale customer is entitled to purchase from the SFPUC. The individual supply assurances held by City Hayward and the Estero Municipal Improvement District (MID) are exceptions to this type of contract, as they do not specify a quantified limit on purchases from the SFPUC. A portion of the total 184 mgd (essentially the difference between the subtotal of all the specified individual assurances and 184 mgd, or 28 mgd) is set aside for current usage and growth in consumption by Hayward and Estero MID.¹ If the combined usage by Hayward and Estero 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; Bay Area Water Supply and Conservation Association [BAWSCA], 2006). The current individual supply assurance for each wholesale customer is shown in **Table E.1.1**. Table E.1.1 also shows the base year (2001) demand estimate, 2001 purchases, and 2030 purchase estimates for each customer, for comparison purposes. As the table shows, 12 wholesale customers have submitted 2030 purchase estimates that are greater than their existing individual supply assurances, and 11 have submitted purchase estimates that are less than or equal to their existing assurances. Such a comparison does not apply to Estero MID or the City of Hayward, since their individual supply assurances do not specify a limit on SFPUC purchases.

¹ A 1993 memorandum from BAWSCA (then BAWUA) to its member agencies regarding allocation of the 184 mgd 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). The current BAWSCA annual survey (BAWSCA, 2006) shows a combined usage for Hayward and Estero MID in FY2004-2005 of 24.10 mgd and a reserve amount of 3.9 mgd (together equaling the same combined amount allocated for Hayward and Estero MID [28 mgd] in the 1993 memorandum).

**TABLE E.1.1
ALLOCATION OF THE 184 MGD SUPPLY ASSURANCE**

Customer	Supply Assurances (mgd^a)	Base-Year (2001) Demand Estimate (mgd^a)	Fiscal Year 2001/2002 Purchases from the SFPUC (mgd^a)	2030 Purchase Estimate (mgd^a)
Alameda County Water District	13.76	51.1	11.99	13.76
City of Brisbane	0.46	0.44	0.39	0.89
City of Burlingame	5.23	4.8	4.64	4.70
California Water Service District	35.5			
CWS - Bear Gulch ^{b,c}		13.51	11.23	11.76
CWS – Mid-Peninsula District ^b		17.2	16.75	17.24
CWS – South San Francisco District ^b		8.9	7.56	7.97
Coastside County Water District	2.18	2.6	1.8	2.24 – 3.02
City of Daly City	4.29	8.7	5.08	4.90 – 7.32
City of East Palo Alto	1.96	2.5	2.04	4.64
Guadalupe Valley MID ^d	0.52	0.32	0.3	0.71
Town of Hillsborough	4.09	3.7	3.56	3.70
City of Menlo Park	4.46	4.1	3.57	4.54
Mid-Peninsula Water District	3.89	3.7	3.46	3.70
City of Millbrae	3.15	3.1	2.47	3.19
City of Milpitas	9.23	12.0	6.83	8.20
City of Mountain View	13.46	13.3	10.97	13.20
North Coast County Water District	3.84	3.6	3.45	3.61 – 3.80
City of Palo Alto	17.07	14.2	13.19	13.00
Purissima Hills Water District	1.62	2.2	2.2	3.22
City of Redwood City	10.93	11.9	11.64	11.60 – 12.60
City of San Bruno	3.25	4.4	2.7	4.30
City of San Jose (North) ^e	-	5.2	4.42	6.34
City of Santa Clara	-	25.8	3.84	4.90
Skyline County Water District	0.18	0.17	0.17	0.30
Stanford University	3.03	3.9	2.36	4.20
City of Sunnyvale	12.58	24.8	9.69	12.10
Westborough Water District ^f	1.32	0.99	1.02	1.03
Subtotal, customers with specified assurances ^g	156	247	147	170 – 174
Estero MID ^{d,h}	5.59	5.8	5.62	6.20 – 6.80
City of Hayward ^h	18.51	19.3	17.61	27.95
Estero MID ^d and City of Hayward Reserve ^h	3.90			
Subtotal, Estero MID ^d and City of Hayward	28	25	23	34.15 – 34.75
TOTAL	184	366	261	204 – 209

NOTE: Numbers may not sum due to rounding.

^a mgd = million gallons per day.

^b CWS = California Water Service Company.

^c CWS-Bear Gulch District includes the base year demand, 2001/2002 purchases, and 2030 purchase estimate for the former Los Trancos County Water District (now part of CWS-Bear Gulch District) as provided in background documents. The Supply Assurance for CWS-Bear Gulch is based on the BAWSCA 2004-2005 annual survey, which no longer lists Los Trancos as a separate entity.

^d MID = Municipal Improvement District.

^e Portion of north San Jose only.

^f Purchase estimate is based on Westborough Water District's 2005 UWMP.

^g Base year demand, base year purchases, and 2030 purchase estimate subtotals also include San Jose and Santa Clara, which do not have supply assurance contracts with the SFPUC.

^h Because the supply assurance contracts between SFPUC and Estero MID and SFPUC and Hayward do not specify a limit, the current usage of these wholesale customers (as reported in the BAWSCA FY 2004-05 annual survey) is shown as the "supply assurance;" the amount shown as "Estero MID and City of Hayward Reserve" is the difference between the current supply assurance total (184 mgd) and the specified supply assurances (156 mgd) plus current Estero and Hayward usage (24.1).

SOURCE: BAWSCA, 2006, URS, 2004, Westborough Water District, 2005.

References – Appendix E.1 Water Supply Assurances

Bay Area Water Users Association (BAWUA, now BAWSCA), Memorandum from Douglas M. Short and Brian D. Burns to Member Agencies, RE: Allocation of Supply Assurance Under Section 7.02(b)(1) of the Settlement Agreement, December 6, 1993.

Bay Area Water Supply and Conservation Agency (BAWSCA), *Bay Area Water Supply and Conservation Agency Annual Survey FY2004-05*, April 2006.

City and County of San Francisco, et al., Settlement Agreement and Master Water Sales Contract between the City and County of San Francisco and Certain Suburban Purchasers in San Mateo County, Santa Clara County, and Alameda County; effective May 25, 1984.

URS, *SFPUC 2030 Purchase Estimates Technical Memorandum*, December 2004.

Westborough Water District, *Westborough Water District Urban Water Management Plan 2006-2010*, December 2005.

APPENDIX E.2

Demand Methodology and Purchase Estimates

Water Demand Projections and Purchase Requests

This appendix summarizes the methodology used to develop the water demand projections and the studies undertaken to identify the potential for conservation savings and the use of recycled water within the SFPUC service area, which together provided the basis for the purchase estimates submitted by the water customers to the SFPUC. This summary is based on the following SFPUC technical reports, supplemented by information provided by the SFPUC and BAWSCA staff:

- *SFPUC Wholesale Customer Demand Projections Technical Report* (URS, 2004a) (referred to in this chapter as the wholesale customer demand study)
- *SFPUC 2030 Purchase Estimates Technical Memorandum* (URS, 2004b)
- *SFPUC Wholesale Customer Water Conservation Potential* (URS, 2004c)
- *SFPUC Investigation of Regional Water Supply Option No. 4 Technical Memorandum, Final* (URS, 2006)¹
- *City and County of San Francisco Retail Water Demands and Conservation Potential* (Hannafor and Hydroconsult, 2004) (referred to in this chapter as the retail customer demand study)
- *SFPUC Wholesale Customer Recycled Water Potential Technical Memorandum* (RMC, 2004)
- *Recycled Water Master Plan for the City and County of San Francisco* (RMC, 2006)²

Base-year demand for San Francisco retail customers and the SFPUC's wholesale customers (2000 and 2001, respectively) and projected 2030 demand are shown in **Table E.2.1**. The base-year demand estimate is based on actual consumption data (adjusted for unaccounted-for water) and therefore reflects the implementation of existing conservation programs. The 2030

¹ This report was not used as a basis for the demand estimates, which were developed in 2004. However, it includes customer specific estimates for 2030 recycled water use not included in the 2004 studies.

² This is a technical feasibility report that assesses the feasibility of recycled water projects in San Francisco.

TABLE E.2.1
SUMMARY OF BASE-YEAR AND PROJECTED 2030 DEMAND AND PURCHASE ESTIMATES

Customer	Base-Year (2001) Demand Estimate (mgd ^a) ^b	Fiscal Year 2001/2002 Purchases from the SFPUC (mgd ^a)	Percent of 2001 Demand Met by Purchases from the SFPUC ^c	2030 Projected Demand (with Plumbing Code) (mgd ^a)	Projected Change in Demand from 2001 (mgd ^a)	Projected Percent Change in Demand from 2001	2030 Purchase Estimates (mgd ^a)	Change in Water Purchases from the SFPUC 2001–2030 (mgd ^a)	Percent Change in Purchases 2001–2030 (mgd ^a)
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 ^d	13.4	11.12	90.6%	13.9	0.48	4%	11.60	0.48	4%
CWS–Mid-Peninsula District ^d	17.2	16.75	100%	18.1	0.94	5%	17.24	0.49	3%
CWS–South San Francisco District ^d	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 ^e	5.8	5.62	100%	6.8	0.98	17%	6.20 – 6.80	0.58 – 1.18	10 – 21%
Guadalupe Valley MID ^e	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 ^f	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 ^g	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 ^h	11.9	11.64	100%	13.4	1.54	13%	11.60 – 12.60	-0.04 – 0.06	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) ⁱ	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 ^j	1.02	1.02	100%	1.03	0.01	1%	1.03	0.01	1%
Total, Wholesale Service Area	272	171	63%	324	52	19%	204 – 209	34 – 39	20 – 23%
SFPUC Retail Service Area	93.6	90	96%	93.4	-0.2	-0.2%	80 – 91	-10 – 1	-11 – 1%
TOTAL	366	261	71%	417	51	14%	284 – 300	24 –40	9 – 15%

NOTE: Numbers may not sum due to rounding.

^a mgd = million gallons per day.^b 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.^c Based on URS 2004b.^d CWS = California Water Service Company.^e MID = Municipal Improvement District.^f 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).^g 2030 demand is based on information provided by the City of Palo Alto to the SFPUC (City of Palo Alto, 2005).^h 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, 2005).ⁱ 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.^j Portion of north San Jose only.^k 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, 2005; City of Redwood City, 2005; SFPUC, 2004; Westborough Water District, 2005; Westborough Water District 2007.

projections take into account expected growth in population and employment, the influence of plumbing codes (which include efficiency requirements), and assumptions about rates of water fixture replacement. Thus, the 2030 demand projections already 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. The purchase estimates in Table E.2.1 include the effects of continuing current conservation programs and new future conservation programs that the SFPUC and/or its wholesale customers plan to implement in the future (discussed below), as well as the use of other water sources.

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, which provided critical inputs to the demand model and subsequently submitted statements concurring with the demand projections. Given the central link between the demand forecasts developed for the SFPUC service area and the amount of growth the WSIP could support, this appendix describes in some detail the methodology used to develop the water demand projections and 2030 purchase requests. Additional information on the demand forecast methodology can be found in the above-referenced reports.

Demand Projections

Wholesale Customer Demand

To develop water demand projections for the wholesale customers, the SFPUC undertook a study using an end-use model called the Demand Side Management Least-Cost Planning Decision Support System (DSS) model. The DSS model uses growth in the number of accounts and a complete breakdown of water end uses, by customer billing category, to forecast water demands. This end-use model was selected over other forecasting approaches because it allows a more accurate representation of changing conditions, such as the future effects of plumbing and appliance codes and implementation of additional conservation measures on demand (URS, 2004a).

For the DSS model, water usage is broken down from total water production³ in the service area to specific water end uses such as toilets, faucets, and irrigation. Natural fixture replacement (i.e., the replacement of fixtures assumed to occur over time due to failure, aging, or remodeling), the effects of plumbing codes, and effects of past conservation programs are factored in. (The effects of continuing existing conservation programs and of additional conservation and water recycling programs on demand were calculated in separate studies and are factored into the final customer purchase estimates shown in Table E.2.1, as discussed in more detail below.)

³ Water produced is the total water consumed (including imported water purchased from others, groundwater, or other sources) plus unaccounted-for water.

Establishing Base-Year Conditions

A key to water demand forecasting is accurately determining existing use. Establishing base-year conditions for the DSS model entailed the following steps: selecting the appropriate base year, developing water use data, and calibrating end uses for that year. The SFPUC selected 2001 as a representative base year because water use data in 2001 showed less influence from the recession than did 2002 data, and because 2001 was a normal year in terms of rainfall. (Complete data were not available for 2003 since the wholesale customer demand study was undertaken that year.)

Development of accurate base-year water use data involved the following steps:

- Determination of the percentage of “unaccounted-for” (unmetered) water in the system. A percentage of every water retailer’s water is unaccounted for, resulting from, for example, leakage, pipe flushing, and firefighting. Unaccounted-for water is the difference between total water production and total water consumption (i.e., the difference between total water produced and the amount of water billed to customers), and must be considered in demand projections. The five-year average unaccounted-for water was calculated for each wholesale customer based on data published in customers’ UWMPs and the 2002 Bay Area Water Users Association’s (BAWUA, now BAWSCA) annual surveys. Estimates of unaccounted-for water in the UWMPs varied between 1 percent and 11 percent, and estimates in the annual surveys varied between 5.5 and 5.7 percent. These estimates of unaccounted-for water are low by national standards (which indicate approximately 15 percent unaccounted-for water within a system), according to an American Water Works Association report cited in the demand study, and are lower than the state average (estimated to be 9.3 percent in a 1982 study of state water agencies prepared for the California Department of Water Resources). Unaccounted-for water in a system is expected to increase as pipes and other infrastructure components age. Therefore, the demand projections assumed a minimum value of 7 percent unaccounted-for water, as a conservative estimate for future demands, unless the wholesale customer’s five-year average unaccounted-for water was higher, in which case the higher rate was used. The assumed percentage of unaccounted-for water was added to the total water consumed, obtained from billing data, to arrive at the total water produced (the base year [2001] demand estimate in Table E.2.1).
- Determination of the basic split between indoor and outdoor water use, since outdoor use fluctuates seasonally and future water use will be affected by plumbing codes requiring more water-efficient fixtures.
- The further division of indoor and outdoor water usage into specific end uses, by customer billing category, based on published data of industry standards and data from previous water audits.
- Calibration and verification of residential and employment populations and per-capita water use. Once total water production was broken down into end uses (“disaggregated”), these water usage data were calibrated by performing the reverse: end uses and the average number of persons using them were combined to arrive at total water production. The calibration process requires verification of residential and employment population estimates in the service area and the per-capita and per-employee water use estimates. Census data and customer billing data were used to determine the average number of users per account.
- Reconciliation of service area and census area boundaries. The boundaries of many wholesale customer service areas do not exactly coincide with city or town limits. Therefore, the extent

to which service area and census area boundaries conformed needed to be determined and adjustments made where they do not. For example, one water agency may serve all of a city except for a few blocks, which are served (along with other areas) by another agency, or a water agency may serve only a small part of a city. Modelers worked closely with wholesale customers to accurately understand the boundaries. Estimated population and employment projections were verified with wholesale customers and checked through the calibration process.

- Determination of the number of water users per residential account. This involved determining the number of single-family and multifamily buildings in a service area, the number of housing units per multifamily building, and household size. The service area population developed through this process was then checked for reasonableness by comparing it with service area population estimates from the annual survey conducted by BAWSCA.
- Calculation of per-capita water use for residents. This step required determination of total indoor water use for single- and multifamily accounts; usage was divided by average household size to determine per-capita usage.
- Determination of water users per nonresidential account. ABAG employee population figures supplemented by data from the California Department of Finance were used; adjustments were made to account for differences between service area boundaries and those of ABAG jurisdictions.
- Application of fixture models to end uses. Because the efficiency of water fixtures has increased over time, assumptions were required about the model (age) of the fixtures in use. Initial proportions of old, intermediate, and new fixtures were determined based on census age-of-housing data and assumptions about the amount of natural replacement that had occurred prior to the base year.
- Calibration of end uses. The results of the disaggregating and aggregating approaches were then compared and adjusted through a calibration process to match one another.

BAWSCA's annual surveys of wholesale customers since 2001 shows that actual demand for fiscal year (FY) 2001/2002 through FY 2004/2005 has been, for most wholesale customers each year, less than the base-year demand estimate used for the wholesale customer demand projections. As noted above, the SFPUC selected 2001 because it showed less influence from the recession than did 2002 data and was a normal year in terms of rainfall. In addition, as discussed above, the 2001 base year includes adjustments for unaccounted-for water, and therefore is somewhat higher than actual 2001 demand. In FY 2002/2003, total demand was somewhat down from that of the previous year, and only Guadalupe Valley Municipal Improvement District had demand higher than the 2001 base year. Total demand in FY 2003/2004 was greater than that of the two previous years, but slightly less than the 2001 base year. Demand in FY 2004/2005 was lower than that of the previous three years and 8 percent lower than the previous year. According to BAWSCA, the lower-than-normal consumption in FY 2004/2005 reflected expected year-to-year variations and could be explained in part by the combination of higher annual rainfall that year and mild spring temperatures, which extended into late spring and lowered irrigation demand (BAWSCA, 2006).

Forecasting Water Demand

Once the model was calibrated, water demands were forecasted from the base year. The forecasting process entailed the following steps:

- Determination of growth in the number of water accounts and increases in water use in those accounts. Published population and employment projections⁴ were used to forecast growth in the number of water accounts. Each customer was asked to select the projections source to be used based on city planning estimates and the most recent general plan, to ensure that the projections were based on land use plans that were relevant to the particular wholesale customer service area. Nineteen of the 30 wholesale customer entities⁵ selected *ABAG Projections 2002* as the source of growth rates; others selected BAWSCA's annual surveys,⁶ urban water management plans, city planning sources, a service area planning study, a draft general plan,⁷ and a water master plan (URS, 2004a). Projections for San Francisco were developed based on information provided by the San Francisco Planning Department.

Projections 2002 provides forecasts in five year increments 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.

To develop yearly projections to 2030 for each source (since none of the selected sources provided yearly projections), 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 (depending on the increment used in the particular projection) to form a linear yearly projection between increments. For each SFPUC customer, the annual demographic projections that were developed through 2030 were used to derive an annual rate of change (annual growth rate) for each of the demographic sources (population and employment).

⁴ Employment projections were not developed for Los Trancos County Water District or Stanford University because Los Trancos only has residential accounts and Stanford University uses other parameters (such as increases in building square footage) to forecast growth in nonresidential accounts. (Since the projection studies were conducted, Los Trancos County Water District was purchased by CWS and is now part of the CWS-Bear Gulch District.)

⁵ There are 27 wholesale customers, but California Water Service Company (CWS) serves three distinct subgroups—Bear Gulch District, Mid-Peninsula District, and South San Francisco District—which are tracked separately in the SFPUC reports. The former Los Trancos County Water District, which was recently purchased by CWS and is now part of the CWS-Bear Gulch District, is also tracked separately in the SFPUC reports. The 30 wholesale customer entities referenced here include the CWS districts and Los Trancos as distinct entities.

⁶ This organization was called the Bay Area Water Users Association (BAWUA) at the time the cited annual surveys were conducted.

⁷ The source of the population and employment projections used as the basis for San Bruno's demand forecasts (the City's draft general plan) has not been adopted and is thus potentially subject to change. Therefore, this analysis compared the projections used with the 2030 population and employment projections for San Bruno in ABAG's *Projections 2003* and *Projections 2005*, and the population projection included in the City's 2003 housing element. (*Projections 2002* was not reviewed for this purpose because it does not provide projections to 2030.) The population projections for 2030 in *Projections 2003* and *Projections 2005* are approximately the same as the projections used for the water demand forecasts (1 percent and 5 percent higher, respectively). Employment projections for 2030 in *Projections 2003* and *Projections 2005* were approximately 8 and 10 percent higher, respectively, than those used for the water demand forecasts. San Bruno's 2003 housing element includes a population projection for 2020 of 46,400, which is about 4 percent lower than the population used in the demand forecast for 2030. Based on these comparisons, the projections used for San Bruno in the demand study are reasonably consistent with the growth estimated by the regional planning agency and the City's 2003 housing element. San Bruno's current general plan, adopted in 1984, does not include applicable projections.

These annual growth rates were then input into the demand model, which applied them to the base-year number of water accounts to forecast the future number of water accounts and ultimately future water demand. 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.

To reconcile the ABAG projections with those for wholesale customer service areas, a “blend” of ABAG cities was created (refer to Table 7.1 of PEIR Chapter 7). Projections 2002 was used as the source of employment projections for most of the SFPUC wholesale customers.

Based on *Projections 2002*, which showed relatively constant household sizes in the program area over the forecast period, the wholesale customer demand study assumed the average number of users per account would remain constant for all account categories. Based on this assumption, the rate of growth in demand forecast for each demographic category would be expected to correspond directly to the rate of growth in accounts for the customer-billing category to which the forecast is applied. However, data gathered on new accounts in some billing categories revealed higher water use rates by new accounts than by existing (older) accounts. Research into this disparity confirmed that new accounts in certain categories had higher use rates.⁸ Therefore, in cases where some categories showed higher water use by new accounts, a category for new accounts, with water use rates consistent with recent customer billing, was incorporated into the DSS model. In other cases, model mechanics required the creation of new categories to estimate actual projected demand using the account growth method. (For example, a commercial building that was only partially occupied would show lower consumption than it would at full occupancy if not adjusted for the full growth potential.) Customers with new account categories incorporated into their DSS model are shown in **Table E.2.2**. In general, the modelers applied population projections to residential, institutional, and other miscellaneous accounts and applied employment projections to commercial and industrial accounts.

In addition to those described in Table E.2.2, a new commercial account for new/renovated commercial use was created for Daly City. This account was not established because of observed trends in new accounts but in order for the DSS model to accommodate additional planned growth (beyond ABAG employment projections for Daly City) of approximately 0.57 mgd estimated by the City to result from established public policy calling for intensification of mixed uses. The City’s estimate of changes in demand expected to result from this intensification of mixed uses is described in a letter from the Daly City director of water and wastewater resources to BAWSCA (Daly City, 2004). This growth reflecting intensified mixed use is expected to occur by the year 2010 and is documented by a number of project reviews that have gone through public processes in Daly City (Daly City, 2004).

- Determination of the average annual rate of fixture replacement and future plumbing code impacts and incorporation of the effects into the fixture models. Water fixtures are replaced over time due to failure, aging, or remodeling and must be replaced by more efficient models, as required by plumbing codes. Modelers considered the age of housing, income levels, fixture saturation study results, and replacement rate estimates by the California

⁸ For example, higher use rates were found in areas where redevelopment had replaced paved areas with landscaping. In other cases, higher use was linked to larger lot sizes with larger outdoor areas using irrigation.

TABLE E.2.2
SFPUC WHOLESALE CUSTOMERS WITH DEMAND MODEL CATEGORIES FOR NEW ACCOUNTS^a

Wholesale Customer	Existing Account Category	Average Water Consumption (gpd/a ^b)	New Account Category	Average Water Consumption (gpd/a ^b)	Reason for New Category
City of East Palo Alto	Single-Family Residential	314	New Single-Family Residential	340	To represent additional water demand of 0.3 mgd from a new single-family residences in the Ravenswood Business District
	Commercial	1675	New Commercial	5,493	To represent additional water demand of 1.2 mgd from new commercial uses (having an assumed use rate of 5,000 gal /acct/day) in the Ravenswood Business District
Estero MID ^c	Single-Family Residential	320	New Single-Family Residential	450	New homes are assumed to be larger and have a higher outdoor water usage than existing; the per account usage was based on discussion with the wholesale customer. A trend of increasing home prices, based on 1990 and 2000 census information, supports the assumed increase in water usage.
	Commercial/Institutional	2,250	New Commercial/ Institutional	4,000	New commercial users are assumed to be larger and have a higher water usage than existing commercial users. The per account usage was based on discussion with the wholesale customer. Projected new development is expected to consist of large office building complexes.
City of Hayward	Single-Family Residential	275	New Renovated Single-Family Residential	400	Renovation of single family homes is occurring in Hayward where more affordable homes are attracting buyers. Homes are being purchased and remodeled; the remodeled homes have improved landscapes and use a net increase in water (compared to the current average if 275 gpd/a which is lower than most areas of the SFPUC service area). The city expects a 2 percent renovation rate to continue to 2030.
			New High-Use Single-Family Residential	440	To represent 2,200 new higher-use single family homes the City requested be added to the model. These homes have larger lots than existing small-lot homes and are assumed to use 438 gpd/account. At the time the demand modeling was undertaken the City had found that the larger lots being built actually use up to 600 gpd, and estimated the ultimate range for the new homes was 400-600 gpd. Assuming 438 gpd resulted in an overall increase of 0.9 mgd by 2030, which was assumed to be realistic for 2,200 larger homes. This value is slightly higher than the 400 gpd assumed in the City's Water Master Plan and results from the City's field observations showing 600 gpd per new account.
	Commercial/Institutional	1,775	New Commercial / Institutional	8,500	Based on the City's General Plan, which anticipates, and is actively marketing to attract, high technology manufacturing facilities to locate in Hayward. The assumed change for this new industrialization was 400,000 gpd. The new category also includes water for already-approved development of a golf course (170,000 gpd and up to 700,000 in summer, for irrigation), country club (100,000 gpd) and new sports park (45,000 gpd).

TABLE E.2.2 (Continued)
SFPUC WHOLESALE CUSTOMERS WITH DEMAND MODEL CATEGORIES FOR NEW ACCOUNTS^a

Wholesale Customer	Existing Account Category	Average Water Consumption (gpd/a ^b)	New Account Category	Average Water Consumption (gpd/a ^b)	Reason for New Category
City of Milpitas	Single-Family Residential	325	New Single-Family Residential	500	All new single family accounts above those existing in 2001 were placed in this category. New homes were assumed to be larger and have higher outdoor water usage. The new single family accounts were assumed to use approximately 50 percent more water than existing accounts (all of which is allocated to outdoor use). Adjustments were based on information provided in the Water Master Plan and conversations with the wholesale customer.
	Commercial	2,164	New Commercial	4,500	All new commercial accounts above those existing in 2001 were placed in this category. These new accounts are assumed to have higher water usage than existing. Assumed to use 4,500 gpd/ acct, based on information in the Water Master Plan and conversations with the wholesale customer.
Purissima Hills Water District	Old Single-Family Residential	716	New/Renovated Single-Family Residential	1,605	The number of old versus new/renovated residential accounts was determined by assuming a 3 percent renovation rate since 1994. This assumption corresponds to a new/renovated water usage of 1,605 gpd/acct in order to reconcile the average water use for all residential accounts with billing data for 2001.
City of Santa Clara	Single-Family Residential	361	New Single-Family Residential	500	A special billing category was added for new single family homes in order to allow higher water usage per account for those future homes at rate provided by the City.

^a In many of the cases shown here, the new categories were created because the model mechanics required doing so in order to estimate actual projected water demand using the account growth and end-use method. For example, a commercial building that is only 30 percent full has much lower consumption than it would with full occupancy; creation of a new account category provided an adjustment for full growth potential to ensure that consumption for that particular type of account was more accurately forecasted. The average water consumption for the new accounts shown here is not necessarily a reflection of actual use but rather of the adjustments made to more accurately estimate the projected demand using the tools available in the model.

^b gpd/a = gallons per day per account.

^c MID = Municipal Improvement District.

SOURCE: URS, 2004a (Appendices B and C).

Urban Water Conservation Council to establish a best estimate of the replacement rates for wholesale customers. The model also incorporated assumptions on the effect of federal legislation regarding high-efficiency clothes washers.

- Incorporation of recycled water use, where appropriate, because the recycled water use represents a demand that would otherwise be served by a potable supply. The cities of Milpitas, Palo Alto, Redwood City, Santa Clara, and Sunnyvale provided information on approved and funded recycled water programs, which was included in base-year and/or future demand projections. Where recycled water information was provided, a new account category for recycled water was added to the wholesale customer's DSS model. Recycled water was assumed to be entirely for outdoor (irrigation) use.

Retail Customer Demand

A separate SFPUC study evaluated retail customer demand (Hannaford and Hydroconsult, 2004). SFPUC retail water customers consist of residents and nonresidential businesses and institutions within the corporate boundaries of San Francisco that receive water from the SFPUC, and several other industrial, governmental, and individual retail customers in the Bay Area and Sierra Nevada foothills (shown in Table 3.1 in Chapter 3, Program Description, of the PEIR). The study evaluated the historical record of San Francisco's retail water demands and projected the future water demands through 2030 based on an estimation of how water uses will change in the future.

The retail customer demand study considered the following factors:

- Historical changes in water use practices that occurred in response to drought-induced water shortages
- Institutional changes, such as the implementation of plumbing fixture retrofit ordinances
- The manner and degree to which the uses of water would change in the future as a result of plumbing code, demographic, and industry changes

In-city customers that receive water hydraulically from the Hetch Hetchy Water and Power system and the SFPUC's Bay Area reservoir system represent more than 90 percent of the SFPUC's retail deliveries. Using an end-use model similar to that employed for the wholesale demand study described above, the retail demand study developed and refined disaggregated water use forecast models for three principal in-city customer categories:

- Nonresidential (representing the commercial, industrial, and service water uses); nonresidential water use was estimated using relationships between employment within San Francisco and employee use of water, segregated by type of business or service enterprise.
- Multifamily residential (representing water use within multiple-family dwellings such as apartments).
- Single-family residential (representing water use within single-family dwellings).

A fourth category (Builders, Contractors, Docks & Shipping) was estimated based on historical water use and maintained constant at the existing level of delivery (based on fiscal years 1997/1998 through 2000/2001) of 0.24 mgd. Unaccounted-for water use, which was based on the historical performance of the SFPUC regional water system, was estimated to be approximately 9 percent of metered water but not less than 7.3 mgd. The year 2000 was used as the base year for the SFPUC retail modeling because this year provided the best available data.

Historical and projected demographic data from the San Francisco Planning Department and ABAG's *Projections 2002* were used in the modeling process to project residential water demand. Data on historical and projected employment figures from the San Francisco Planning Department, the Bureau of the Census, and ABAG were considered in developing the nonresidential demand projections. ABAG's projections (which differed from San Francisco's figures by only 1 percent for 2025) were used because they provided a more comprehensive breakdown by industry type.

Water deliveries to other retail customers, including the U.S. Navy, San Francisco International Airport, and Lawrence Livermore National Laboratory, and nonpotable deliveries to the town of Sunol were assumed to remain constant into the future.⁹ Based on a California Department of Water Resources projection for the town of Groveland, the study assumed SFPUC water deliveries to Groveland would also remain constant. The retail demand study also took into account nonpotable water demand within San Francisco that is currently met by groundwater supplies.

As shown in Table E.2.1, retail customer demand is expected to decrease slightly by 2030 to a total demand of 93.4. The net decrease is attributed to an increase in the market penetration of plumbing code changes in the single-family, multifamily, and nonresidential sectors. The total savings due to the plumbing code changes factored into projected retail demand is estimated to be 10.3 mgd by 2030.

Conservation Potential

As discussed above, the end-use demand models factored in water savings that would occur over time (from the base year to 2030) as a result of natural fixture replacement and compliance with plumbing code requirements and effects of past conservation programs. In addition, the SFPUC undertook conservation potential studies in its wholesale and retail service areas to identify conservation potential from feasible conservation measures that could be implemented to partially offset overall growth in water demands. The 2030 purchase estimates (discussed below) factor in projected conservation savings estimated by the individual customers based on these studies.

⁹ The study does note, however, that the water demand associated with U.S. Navy sites, such as Treasure Island and Hunters Point Naval Shipyard, should be reevaluated as additional information becomes available regarding the future use of these areas.

Wholesale Customer Conservation Potential

The SFPUC, in conjunction with its 30 wholesale customer entities,¹⁰ conducted a comprehensive study to assess potential conservation savings in the wholesale customers' service areas. An initial list of 75 measures was screened qualitatively, considering the following factors:

- Commercial availability of technology/market maturity
- Service area match (i.e., appropriateness of the measure or technology considering such factors as climate, building stock, and lifestyle)
- Customer acceptance/equity
- Relative effectiveness of the measures available

Thirty-two potential conservation measures emerged from this initial screening. The list of 32 measures included (1) rebate and other incentive programs for installing water-saving devices, (2) city/county ordinances requiring the installation of water-saving devices, and (3) educational outreach and award programs that promote water use reductions in businesses and landscaping. (The list of 32 measures is included at the end of this appendix.) The DSS end-use model was used to estimate water savings and evaluate the cost-effectiveness of implementing the 32 measures. Taking into account the cost-benefit analysis and estimated water savings for each measure, as well as service area water characteristics, retail customer behavior patterns, budgetary considerations, and relative ease of implementation, each wholesale customer compiled three packages of conservation measures, referred to as Programs A, B, and C. Water savings resulting from the natural replacement of fixtures under current plumbing codes was assumed to occur with or without any of the three programs. In general, Program A consists of measures that are currently being implemented; Program B consists of the measures in Program A plus additional measures that were considered to be the most readily implemented; and Program C includes the measures in Programs A and B plus all other measures that appeared to be both feasible and cost-effective to implement. Since there was the potential for water savings from some measures to overlap, once the measures for each program were selected, they were modeled together as a program in order to provide the estimated savings for the program as a whole, accounting for the potential overlap between measures. Projected savings under the three programs for the wholesale customer service area are summarized in **Table E.2.3**, and savings projected for each program by customer are shown in **Table E.2.4**. To gauge the effect of plumbing codes and natural fixture replacement, the DSS model also was run without code-required fixture models in place; plumbing code effects on water savings are also shown in Tables E.2.3 and E.2.4.

¹⁰ As previously noted, there are 27 wholesale customers, and the reference to 30 wholesale customer entities considers the three CWS districts and the former Los Trancos County Water District as distinct entities as they are represented in the conservation potential study.

TABLE E.2.3
CONSERVATION EVALUATION RESULTS
FOR SFPUC WHOLESALE AND RETAIL CUSTOMER SERVICE AREAS
(mgd^a)

Conservation Program ^b	2030 Water Savings due to Conservation Programs, Wholesale Service Area	Total Potential Water Savings, Wholesale Service Area	2030 Water Savings due to Conservation Programs, Retail Service Area	Total Potential Savings, Retail Service Area	Total Potential Savings, Wholesale and Retail Service Areas
(Plumbing Code ^c)	–	25.4	–	10.3	35.7
Program/Package A	7.7	33.1 ^d	0.64	10.9 ^g	44.0
Program/Package B	14.5	40.0 ^e	3.93	14.2 ^h	54.2
Program/Package C	19.6	45.0 ^f	4.45	14.8 ⁱ	59.7

^a mgd = million gallons per day

^b The sets of conservation measures (A, B, and C) in the wholesale and retail conservation studies are referred to as programs and packages, respectively.

^c Plumbing code savings represent savings associated with the natural replacement of plumbing fixtures with more efficient fixture models, and are assumed to occur with or without implementation of the conservation programs.

^d Includes plumbing code savings plus Program A savings.

^e Includes plumbing code savings plus Programs A and B savings.

^f Includes plumbing code savings plus Programs A, B, and C savings.

^g Includes plumbing code savings plus Package A savings.

^h Includes plumbing code savings plus Packages A and B savings.

ⁱ Includes plumbing code savings plus Packages A, B, and C savings.

SOURCES: URS, 2004c; Hannaford and Hydroconsult, 2004.

As shown, a total savings of 25.4 mgd in 2030 is expected to be achieved as a result of natural replacement and plumbing code requirements in the wholesale service area; an additional 7.7 mgd would be saved with implementation of Program A; an additional 6.8 mgd would be saved with Program B over the savings achieved by Program A and the plumbing code; and an additional 5.1 mgd would be saved with implementation of Program C over the savings achieved by Programs A and B and the plumbing code. Multiple rounds of feedback from the wholesale customers were conducted, as needed, until the SFPUC and the wholesale customers were satisfied with the model inputs and results. Once agreement was reached, the wholesale customers submitted forms to the SFPUC indicating their concurrence with the demand projections and the range of conservation potential resulting from their Programs A, B, and C (URS, 2004c).

Following completion of the conservation potential study (and related studies described in this appendix), the wholesale customers submitted estimates of projected purchases for the year 2030, which included the customers' specific estimates of conservation savings as well as their other available sources of supply.

The customers' estimates are, for the most part, similar to the projections for Program B, and indicate savings of approximately 13 - 15 mgd (SFPUC, 2004). It should be noted, however, that because many of the wholesale customers meet their water demand through multiple supply sources, the water savings achieved through implementation of the conservation programs would not necessarily represent commensurate water savings for the SFPUC water system (URS, 2004c).

TABLE E.2.4
PROGRAM-SPECIFIC CONSERVATION POTENTIAL
AND CUSTOMER-PROJECTED CONSERVATION SAVINGS
(mgd^a)

SFPUC Customer	Plumbing Code	Program A	Program B	Program C	2030 Projected Conservation Savings ^b
Wholesale Customers					
Alameda County Water District	4.73	2.020	3.159	3.483	3.16
City of Brisbane	0.16	0.002	0.041	0.050	0.04
City of Burlingame	0.63	0.113	0.245	0.375	0.20
CWS–Bear Gulch District ^c	1.08	0.217	0.930	0.962	0.93
CWS–Mid-Peninsula District ^c	2.08	0.415	0.863	1.166	0.86
CWS–South San Francisco District ^c	0.92	0.208	0.560	0.650	0.56
Coastside County Water District	0.26	0.125	0.183	0.239	0.18
City of Daly City	1.06	0.093	0.448	0.531	0.44
City of East Palo Alto	0.33	0.009	0.092	0.163	0.16
Estero MID ^d	0.42	0.469	0.624	0.720	0.00 - 0.60
Guadalupe Valley MID ^d	0.03	0.001	0.097	0.098	0.10
City of Hayward	1.45	0.195	0.755	1.202	0.76
Town of Hillsborough	0.17	0.056	0.308	0.427	0.20
Los Trancos County Water District ^e	0.01	0.002	0.002	0.003	0.002
City of Menlo Park	0.22	0.014	0.160	0.349	0.16
Mid-Peninsula Water District	0.40	0.048	0.102	0.129	0.10
City of Millbrae	0.34	0.078	0.113	0.236	0.078 - 0.113
City of Milpitas	0.72	0.361	0.601	0.968	0.61
City of Mountain View	1.20	0.241	0.945	1.207	0.24 - 1.21
North Coast County Water District	0.55	0.126	0.185	0.300	0.00 - 0.185
City of Palo Alto	1.24	0.229	0.466	0.592	0.60
Purissima Hills Water District	0.02	0.055	0.077	0.288	0.08
City of Redwood City	1.51	0.593	0.828	1.026	0.59 - 1.02
City of San Bruno	0.68	0.028	0.185	0.266	0.185
City of San Jose (North) ^f	0.17	0.155	0.157	0.595	0.157
City of Santa Clara	1.77	0.647	1.011	1.233	1.00
Skyline County Water District	0.04	0.003	0.009	0.015	0.009
Stanford University	0.42	0.488	0.646	0.663	0.70
City of Sunnyvale	2.72	0.640	0.711	1.596	0.70
Westborough County Water District	0.13	0.015	0.020	0.055	See note g
<i>Subtotal, Wholesale Customers, by Program</i>	25.4	7.65	14.53	19.59	13 - 15
<i>Plus Plumbing Code (Wholesale Customers)</i>		25.4	25.4	25.4	
Total – Wholesale Customers		33.1	40.0	45.0	13 - 15
Retail Customers					
<i>Retail Customers, by Program^h</i>	10.3	0.64	3.93	4.45	0 - 4
<i>Plus Plumbing Code (Retail Customers)</i>		10.3	10.3	10.3	
Total – Retail Customers		10.9	14.2	14.8	0 - 4
Total, SFPUC Regional Water System Customers	35.7	44.0	54.2	59.7	13 - 19

^a mgd = million gallons per day.

^b Projected conservation savings represent estimates specified by the wholesale customers and the SFPUC (for retail customers) and were considered when making their 2030 purchase estimates (SFPUC, 2004; Popp, 2007).

^c CWS = California Water Service Company.

^d MID = Municipal Improvement District.

^e The former Los Trancos County Water District is now part of the CWS–Bear Gulch District. Information presented here reflects information in the wholesale service area conservation study (URS, 2004c).

^f Portion of north San Jose only.

^g The 2030 demand projection and purchase estimate for Westborough Water District is based on the district's 2005 UWMP, based on a request from the district 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 its 2030 purchase estimate. The purchase estimate originally submitted by Westborough in 2004 assumed conservation savings of 0.02 mgd.

^h The preferred alternative under the WSIP would result in 4 mgd of conservation savings (SFPUC, 2007).

SOURCES: URS, 2004c; URS, 2006; Hannaford and Hydroconsult, 2004; SFPUC, 2004; SFPUC, 2007; Popp, 2007.

Retail Customer Conservation Potential

A similar approach was taken to determine water conservation potential in the SFPUC's retail service area. The SFPUC initially evaluated the water conservation potential of 48 conservation measures, screening these down to 38 measures using the end-use, disaggregated forecast models employed for the demand projections. (The complete list of measures is included at the end of this appendix.) Market potential, costs, and benefits were identified for the 38 conservation measures.

Using the results of a benefit-cost analysis and professional judgment for each conservation measure, three conservation packages—Packages A, B, and C—were developed. Package A consists of the measures San Francisco is currently implementing. Package B includes all elements of Package A plus additional measures that would expand the current conservation program to an achievable, socially acceptable program that the SFPUC believes it can fund. Package C represents an upper bound of conservation that the SFPUC considers achievable and fundable; Package C includes all elements of Package B plus several additional measures. The additional measures in Package C are based on future improvements in technology (and the information about it) that are assumed to be achievable. For example, dishwasher rebates are included only in Package C because the current models of efficient dishwashers do not show significant water savings; they are included in Package C assuming the market availability of more efficient models will improve.

Projected savings under the three packages for San Francisco are shown in Tables E.2.3 and E.2.4. As shown, a total savings of 0.64 mgd in 2030 is expected to be achieved by implementation of Package A, over the 10.3-mgd savings projected from natural fixture replacement and plumbing codes; an additional 3.29 mgd would be saved with Package B over the savings achieved by Package A and the plumbing code; and an additional 0.52 mgd would be saved with Package C over the savings achieved by Packages A and B and the plumbing code. The 2030 purchase estimate range for the retail service area assumes conservation savings of 0 to 4 mgd (for the high end purchase estimate and for the proposed water supply option, respectively).

Combined Conservation Potential

As shown in Table E.2.3, the potential savings from implementation of plumbing codes and the three identified sets of conservation measures in the combined wholesale and retail service areas range from approximately 36 to 60 mgd. As shown in Table E.2.4, estimates provided by the wholesale customers indicate projected savings from conservation programs (apart from plumbing code savings) in 2030 for the wholesale service area of approximately 13 to 15 mgd. The WSIP proposed water supply option includes 4 mgd of projected savings in 2030 for the retail service area from conservation programs, apart from plumbing code savings.

Recycled Water Potential

Recycled water has the potential to replace potable supplies for such uses as landscape irrigation, toilet flushing, and cooling towers. The SFPUC also evaluated the recycled water potential in the wholesale and retail service areas. In the wholesale service area, the SFPUC identified 14 areas with current and/or planned recycled water projects; 9 areas that currently produce recycled water totaling approximately 12.6 mgd, and additional projects considered relatively certain to be implemented in the near future, as well as those under study.¹¹ The study estimated that by 2020, the total average annual yield of recycled water projects in the wholesale service area (i.e., current plus new projects, including projects under study) could produce 40 to 46 mgd. Total average annual yield includes water that would be used to meet nonpotable demand not represented in the SFPUC demand estimates. **Table E.2.5** summarizes the results of the study. Information provided by the wholesale customers indicates that by 2030 an estimated 9 mgd would be used in the wholesale service area to offset projected 2030 demand (see Table E.2.5) (URS, 2006).

SFPUC has published a technical feasibility report called the *Recycled Water Master Plan* (RMC, 2006), which assesses the feasibility of recycled water projects in the Westside area of San Francisco. The feasibility analysis identifies projects with the potential to provide approximately 6.2 mgd of recycled water to irrigate Golden Gate Park, Lincoln Park, Harding Park, the San Francisco Zoo, San Francisco State University, and other locations, as well as provide a supplemental water supply for Lake Merced (RMC, 2006). The first phase of projects identified in the report would provide 4.1 mgd recycled water to this area (RMC, 2006).

2030 Purchase Estimates

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 (see **Table E.2.6**). The changes in purchase estimates from 2001 are shown in Table E.2.1. As that table shows, the 2030 estimated purchases represent a total increase of 35 to 39 mgd, or 13 to 15 percent above 2001 purchases. Table E.2.6 also shows the percentage of water supply sources (including recycled water) that is represented by purchases from the SFPUC (i.e., the percentage of demand after conservation savings are taken into account). Purchases from the SFPUC in 2030 represent approximately 72 percent of the total SFPUC service area demand (with plumbing code savings) and about 75 percent of demand adjusted for conservation. (Figure 7.3 of PEIR Chapter 7 depicts historical water deliveries for the wholesale and retail services areas as well as the projected demand on the SFPUC system [i.e., estimated purchases] to 2030.)

¹¹ These projects, categorized in the technical memorandum as “planned and being implemented,” are defined as projects for which agencies have conducted planning studies and may have secured financing, and on which construction had begun or was planned to begin in the coming year. However, the projects in this category are not considered completely certain.

TABLE E.2.5
SUMMARY OF RECYCLED WATER POTENTIAL FOR THE SFPUC SERVICE AREA (mgd^a)

SFPUC Service Area Recycled Water Project Areas	Recycled Water Potential (Total Average Annual Yield)			2030 Projections (Offsets Potable Demand)	
	Current (2004) Recycled Water Projects	Planned Recycled Water Projects ^b	Recycled Water Projects Under Study or Previously Studied	Subtotal – Additional Potential Projects	2030 Projected Recycled Water Supply ^c
Alameda County Water District	3.5	0	1.5	1.5	1.40
City of Burlingame	0	0	3.9	3.9	
Coastside County Water District	0	0	0.5	0.5	
City of Hayward	0.2	0	8.3 – 10.3	8.3 – 10.3	
City of Millbrae	0.003	0	1	1	
City of Milpitas					1.77
North San Mateo County Sanitary District (Daly City) ^d	0.001	2.77	0	2.77	
North Coast County Water District	3.4	0.2	0	0.2	
Palo Alto RWQCP – Mountain View Project ^e	0	1.3 – 1.7	0	1.3 – 1.7	
Palo Alto RWQCP – Other ^f	1.5	0	2.26 – 4.18	2.26 – 4.18	
City of Palo Alto					0.76
Redwood City Recycled Water Project/ City of Redwood City ^g	0.1	1.65 – 2.8	0	1.65 – 2.8	0 – 1.00
South Bay Water Recycling Project ^h	3.1	0.19	1.91	2.1	
City of Santa Clara					4.00
Cities of South San Francisco – San Bruno	0	0	TBD	TBD	
Stanford University	0	0	0.06 – 0.98	0.06 – 0.98	
City of Sunnyvale	0.81	0.18	1.3	1.48	1.50
Subtotal – SFPUC Wholesale Customer Service Areaⁱ	12.6	6.3 – 7.8	20.7 – 25.6	27.0 – 33.4	9 – 10
SFPUC Retail Service Area	0	0	6	6	0 – 4
Total, SFPUC Service Areaⁱ	12.6	6.3 – 7.8	26.7 – 31.6	33 – 39.4	9 – 14

^a mgd = million gallons per day.

^b These projects are identified in the *Wholesale Customer Recycled Water Potential Technical Memorandum* as “Planned and Being Implemented.” However, they are not considered completely certain, according to the SFPUC. Therefore, they are identified in this table as “Planned.”

^c The source for this column is URS, 2006, except for SFPUC Retail Service Area, which is based on SFPUC, 2007.

^d Wholesale customers served are California Water Service Company (CWS), Daly City, and Westborough Water District.

^e Wholesale customers served are Palo Alto and Mountain View; RWQCP = Regional Water Quality Control Plant.

^f Wholesale customers served are Palo Alto, Mountain View, and Stanford University; RWQCP = Regional Water Quality Control Plant.

^g In November 2005, Redwood City informed the SFPUC of a revised purchase estimate to include 1 mgd of recycled water in lieu of 1 mgd of SFPUC purchases in 2030 (City of Redwood City, 2005). Despite this change, the overall 2030 purchase estimate remains at 300 mgd to be consistent with all the previous and ongoing WSIP studies.

^h Wholesale customers served are the Cities of Milpitas, San Jose, and Santa Clara.

ⁱ Of the 12.6 mgd produced by current recycled water projects, 4.3 mgd replaces a potable water supply.

SOURCES: SFPUC, 2007; RMC, 2004; RMC, 2006; URS, 2006; City of Redwood City, 2005.

TABLE E.2.6
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 ^a)	2030 Projected Conservation Savings (mgd ^a)	2030 Demand Adjusted for Conservation (mgd ^a)	2030 Projected Use of Recycled Water (mgd ^a)	2030 Projected Use of Ground-water Sources (mgd ^a)	2030 Projected Use of Other Surface Water Sources (mgd ^a)	2030 Projected Demand Adjusted for Use of Other Sources and Conservation (mgd ^a)	2030 Purchase Estimates (mgd ^a)	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 ^{b,c}	14.06	0.93	13.13			1.37	11.76	11.76	84%	90%
CWS-Mid-Peninsula District ^b	18.1	0.86	17.24				17.24	17.24	95%	100%
CWS-South San Francisco District ^b	9.9	0.56	9.34		1.37		7.97	7.97	81%	85%
Coastside County Water District ^d	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 ^e	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 ^f	6.8	0.00 - 0.60	6.2 - 6.8				6.20 - 6.80	6.20 - 6.80	91 - 100%	100%
Guadalupe Valley MID ^f	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 ^g	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 ^h	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 ⁱ	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) ⁱ	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 ^k	1.03	see note k	1.03				1.03	1.03	100%	100%
Total, Wholesale Service Area	324	13 - 15	308 - 311	9.4 - 10.4	39.3 - 42.1	52.6 - 53.1	203 - 209	204 - 209	63 - 65%	66 - 67%
SFPUC Retail Service Area^l	93.4	0 - 4	89.4 - 93.4	0 - 4	2.5 - 4.5	0	81 - 91	80 - 91	86 - 97%	89 - 97%
TOTAL	417	13 - 19	398 - 404	9.4 - 14.4	41.8 - 46.6	52.6 - 53.1	284 - 300	284 - 300	68 - 72%	71 - 74%

NOTE: Numbers may not sum due to rounding.

^a mgd = million gallons per day.^b CWS = California Water Service Company.^c CWS-Bear Gulch District includes the former Los Trancos County Water District.^d 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.^e 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).^f MID = Municipal Improvement District.^g 2030 conservation savings is based on URS 2004c and the City's UWMP as confirmed by the City (Popp, 2007).^h 2030 demand and conservation savings are based on information provided by the City of Palo Alto to the SFPUC (City of Palo Alto, 2005a).ⁱ 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.^j Portion of north San Jose only.^k 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).^l 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.

Conservation Measures

The following two tables are included with this appendix to show the conservation identified in the wholesale and retail conservation studies:

- **Table 2-2** of the *SFPUC Wholesale Customer Water Conservation Potential Technical Report* (URS 2004c), which lists the 32 conservation measures that emerged from 75 initial measures screened by the SFPUC, as described above; and
- **Table 19** of the *City and County of San Francisco Retail Water Demands and Conservation Potential* report (Hannaford and Hydroconsult, 2004), which lists the 48 measures initially identified in the conservation study.

References – Appendix E.2: Demand Methodology and Purchase Estimates

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Table 2-2
Description of Conservation Measures Selected for Further Evaluation

Conservation Measure	Measure Description
1. Residential Water Surveys	Offer indoor and outdoor water surveys to existing Single-Family and Multi-Family residential retail customers with high water use; provide customized report to homeowner.
2. Residential Retrofit	Provide owners of pre-1992 homes with retrofit kits that contain easy-to-install low flow showerheads, faucet aerators, and toilet tank retrofit devices.
3. Large Landscape Conservation Audits	Provide free landscape water audits to all public and private irrigators of landscapes larger than one acre with separate Irrigation accounts upon request.
4. Water Budgets	Provide a monthly irrigation water use budget as information on the water bill for all irrigators of landscapes larger than one acre with separate Irrigation accounts.
5. Clothes Washer Rebate	Provide a rebate on a new water efficient clothes washer for homeowners.
6. Public Information Program	Provide public education to raise awareness of conservation measures available to retail customers. Programs could include poster contests, speakers to community groups, radio and television time, and printed educational material such as bill inserts, etc.
7. Commercial Water Audits	Provide a free water audit to high water use Commercial accounts that evaluates ways for the business to save water and money.
8. ULF Toilet and Urinal Rebates	Provide rebates to pre-1994 businesses with high use fixtures for commercial ULF toilets (1.6 gal/flush) and commercial ULF urinals (1.0 gal/flush).
9. Residential ULF Toilet Rebate	Provide a rebate to homeowners to replace an existing high volume toilet with a new water efficient toilet.
10. Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings	Work with the real estate industry to require a certificate of compliance be submitted to the water utility verifying that a plumber has inspected the RSF or RMF property and efficient fixtures were either present or installed at the time of sale, before close of escrow.
11. Home Leak Detection and Repair	Use leak detection equipment to determine whether and where leaks are occurring on the premises and provide a plumber to the retail customer to repair leaks for free.
12. Rebates for 6/3 dual flush or 4 liter toilets	Provide a rebate or voucher for the retrofit of a 6/3 dual flush, 4-liter or equivalent very low water use toilet. Rebate amounts would reflect the incremental purchase cost and would be in the range of \$50 to \$100 per toilet replaced.

Table 2-2
Description of Conservation Measures Selected for Further Evaluation

Conservation Measure	Measure Description
13. ET Controller Rebates	Provide a rebate for the latest state of the art irrigation controllers with on-site temperature sensors or a signal from a central weather station that modifies irrigation times at least weekly (preferably daily) as the weather changes.
14. Xeriscape education and staff training at retail garden/irrigation supply houses	Sponsor training for staff of stores where plants and irrigation equipment is sold to educate sales people about the benefits of native (low water use) plants, efficiently irrigated.
15. Homeowner irrigation classes	Sponsor classes at stores where irrigation equipment is sold or other suitable venues on selection and installation of efficient equipment (drip irrigation, smart controllers, low volume sprinklers, etc.) and proper plant.
16. Promote water efficient plantings at new homes	Provide information for planting water-efficient landscaping, including avoiding strip turf sections that are difficult to water efficiently and using native plants that do not require supplemental watering. Information would be provided in brochures with the water bill, or mailed. Informational displays at Water Utility offices and nurseries could also be provided.
17. Offer incentives for replacement of clothes washers in coin-operated laundries	Offer incentives to apartment and coin-op laundry managers to retrofit or use efficient clothes washers. The rebate would either go to the manager or the washing machine leasing company.
18. Incentives for retrofitting sub-metering	Rescind any regulations that prohibit sub-metering of multi-family buildings and encourage sub-metering through water audits and direct mail promotions, and/or incentives to building owners.
19. Require sub-metering multifamily units	Require all new multi-family units to provide sub-meters on individual units. To help reduce financial impacts on tenants, regulations would be adopted that specify acceptable methods of metering and billing.
20. Rebate efficient clothes washers	Provide a rebate to new apartment complexes over a certain size with a common laundry room equipped with efficient washing machines.
21. Enforce landscape requirements for new landscaping systems (turf limitations / regulations)	Enforce existing requirements on use of native or low-water-using plants for landscaping purposes. Proof of compliance would be necessary to obtain a water connection on all new Multi-Family Residential and commercial projects. Non-compliers would face a surcharge on their water bill until they complied.
22. Restaurant low flow spray rinse nozzles	Provide free installation of 1.6 gpm spray nozzles for the rinse and clean operation in restaurants and other commercial kitchens.

Table 2-2
Description of Conservation Measures Selected for Further Evaluation

Conservation Measure	Measure Description
23. Focused water audits for hotels/motels	Provide free water audits to hotels and motels covering bathrooms, kitchens, ice machines, cooling towers, and irrigation system schedules.
24. WAVE Program (US EPA) for hotels	Provide hotels with information about the US EPA's WAVE program. This program encourages hotels to do their own water audit and then analyze their water use with the software provided. The software identifies water saving projects and computes paybacks. Hotels that agree to participate in the program also agree to install cost-effective water conserving equipment.
25. Hotel retrofit (w/financial assistance)	Following a free water audit offer participating hotels a rebate for identified water saving. Provide a rebate schedule for certain efficient equipment such as air-cooled ice machines for hotels that don't participate in an audit.
26. Award program for water savings by businesses	Sponsor an annual awards program for businesses that significantly reduce water use. Provide a plaque, presented at a lunch with the mayor.
27. Replace inefficient water using equipment	Provide a rebate for a standard list of water efficient equipment including icemakers, efficient dishwashers, cooling towers to replace once through cooling, irrigation controllers, and certain process equipment.
28. Require 0.5 gal/flush urinals in new buildings	Require new buildings be fitted with 0.5 gal/flush urinals.
29. Financial incentives for complying with water use budget	Link a landscape water budget to a rate schedule that penalizes the account holder for exceeding its water budget and rewards them for using less than the budget.
30. Financial incentives for irrigation upgrades	Provide rebates for selected types of irrigation equipment upgrade.
31. Require dedicated irrigation meters for new accounts	Require new accounts with a substantial amount of irrigated landscape have dedicated landscape meters and are charged on a separate rate schedule that recognizes the high peak demand placed on the system by irrigators.
32. Water Utility / City Department water reduction goals	Provide water use reduction goals for metered City and County accounts and offer audits and employee education.

Table 19
Selection of Conservation Measures by Package

Number				Program		
	Model No.	Meas. No.	Measure	A	B	C
RESIDENTIAL SINGLE FAMILY						
1	RSF-1	1a	Clothes Washer Rebate -25 g/l rebate	Yes	Yes	Yes
2		1b	Clothes Washer Rebate -17 g/l rebate	Yes	Yes	Yes
3		1c	Clothes Washer Rebate -17 g/l rebate	Yes	Yes	Yes
4	RSF-2	2	Toilets-6/3 or 4 liter Rebates	No	Yes	Yes
5		3	Toilets-ULF Rebate	Yes	Yes	Yes
6		7	Toilets-Retrofit	No	No	No
7		8	Toilets-1.6 gpf Replace on Sale	No	Yes	Yes
8	RSF-3	4	Public Information	Yes	Yes	Yes
9	RSF-4	5	Leak Detection/Repair	No	No	No
10	RSF-5	6	Water Surveys	Yes	Yes	Yes
11	RSF-6	7	Retrofit: 1.75 gpm showerheads	No	No	No
12	RSF-7	45	Dishwasher Rebate	No	No	Yes
RESIDENTIAL MULTI FAMILY						
13	RMF-1	9a	Clothes Washer Rebate -25 g/l rebate	Yes	Yes	Yes
14		9b	Clothes Washer Rebate -17 g/l rebate	Yes	Yes	Yes
15		9c	Clothes Washer Rebate -17 g/l rebate	Yes	Yes	Yes
16	RMF-2	2	Toilets-6/3 or 4 liter Rebates	No	Yes	Yes
17		3	Toilets-ULF Rebate	Yes	Yes	Yes
18		7	Toilets-Retrofit	No	No	No
19		8	Toilets-1.6 gpf Replace on Sale	No	Yes	Yes
20	RMF-3	10	Submetering Retrofit Incentives	No	No	No
21	RMF-4	11	Submetering Req. for New Units	No	No	Yes
22	RMF-5	6	Water Surveys	Yes	Yes	Yes
23	RSF-6	7	Retrofit: 1.75 gpm showerheads	No	No	No
NON-RESIDENTIAL MEASURES						
24	NR-1	14	Lscape-Audits	No	Yes	Yes
25	NR-3	16	Water Savings Awards	No	No	Yes
26	NR-4	17	Water Audits	No	Yes	Yes
27	NR-5	19	Urinals-ULF Rebate	No	Yes	Yes
28		37	Urinals-Require 0.5 gpf	No	No	Yes
29	NR-6	19	Toilets-ULF Rebate	No	Yes	Yes
30	NR-7	20	Large Innovative Retrofit Incentives	No	Yes	Yes
31	NR-8	21	Large New Project Incentives	No	Yes	Yes
32	NR-11	24	Audits-Hospitals	No	Yes	Yes
33	NR-12	25	Audits-Laundry SS Rebates	Yes	Yes	Yes
34	NR-13	26	Audits-Schools/Universities	No	Yes	Yes
35	NR-14	27	Audits-School/University Toilets	No	No	No
36	NR-15	28	Audits-School/University Landscaping	No	Yes	Yes
37	NR-16	29	School/University Artificial Turf	No	No	No
38	NR-18	31	Low Flow Sprayers-Grocery/Flower	No	Yes	Yes
39	NR-19	32	Low Flow Sprayers-Restaurants	No	Yes	Yes
40	NR-19a	46	Steamers-Restaurants	No	Yes	Yes
41	NR-20	42	Cooling Towers	No	No	No
42	NR-21	44	City/PUC - Water Broom	No	Yes	Yes
43	NR-21a	14	City/PUC - Landscaping	No	Yes	Yes
44	NR-22	44	Water Broom	No	Yes	Yes
45	NR-23	33	Audits-Hotels/Motels	No	Yes	Yes
46	NR-24	34	WAVE Program	No	No	No
47	NR-25	35	Require Fixture Replacement on Resale	No	No	Yes
48		36	Retrofit with Financial Assistance	No	No	Yes

APPENDIX E.3

Population, Employment, and Water Demand Projections

This appendix provides a more detailed analysis of the population and employment projections and the associated water demand projections discussed in the PEIR Chapter 7, Growth Inducement Potential and Indirect Effects of Growth. This appendix reviews in greater detail the population and employment projections used by the San Francisco Public Utilities Commission (SFPUC) and its wholesale customers to develop their 2030 water demand projections and subsequent water purchase requests to the SFPUC. It also provides more detail on the evolution of the Association of Bay Area Governments (ABAG) regional growth projections for the Bay Area, and compares those growth projections to the projections of population and employment growth that correspond to the water customers' projections of demand growth. Finally, it provides additional discussion of the relationship between the customer growth and demand projections and the growth projections contained in the local general plans as well as ABAG projections.

Organization of Appendix E.3

The analysis presented in this appendix begins by reviewing the water customers' projections of water demand and identifying the population and employment expectations that are the basis for those projections. These expectations establish a basis of comparison with projections prepared by regional and local planning agencies. (The assessment presented in Chapter 7 evaluates the consistency of the demand projections developed by SFPUC in consultation with the water customers with those of the regional planning agency [ABAG] and the respective local jurisdictions.)

This analysis then reviews ABAG's *Projections 2002*, which was the published set of regional projections available at the time the water demand projections were prepared, and which provided a basis for many of those projections. It goes on to trace the evolution of ABAG's projections sets through *Projections 2003* and *Projections 2005*, to establish the trend in thinking, on the part of the regional planning agency, about how the Bay Area will grow. These projections do not incorporate explicit assumptions about the Water System Improvement Program (WSIP), and consequently provide a reasonable regional framework for evaluation of the projections on which the water demand forecasts are based.

Next, this analysis describes other sets of projections—those in cities' general plans and water districts' urban water management plans (UWMPs) (to the extent they are available)—for the areas served by the SFPUC and its wholesale customers, and compares these other sets of

projections and ABAG's *Projections 2005* to the employment and population projections used by the respective water customers as the basis for projecting water demand.

Finally, this appendix compares the percentage increases in employment and population projected for the water customer service areas in both *Projections 2005* and the water customer demand studies (URS, 2004; Hannaford and Hydroconsult, 2004) to the percentage increase in water demand projected for each water customer service area.

Water Demand Projections

The majority of the wholesale customers selected ABAG's *Projections 2002* as the population and employment forecasts to be used in their demand forecasting models. There were some exceptions to this approach, such as where projections developed by the jurisdictions served or the BAWSCA annual survey were used. Table 4-1 of the *SFPUC Wholesale Customer Water Demand Projections Technical Report* (URS, 2004) (referenced in this appendix as the wholesale customer demand study) identifies the source of the projection for each wholesale customer. The *City and County of San Francisco Retail Water Demands and Conservation Potential* study (Hannaford and Hydroconsult, 2004) (referenced in this chapter as the retail customer demand study) identifies the sources of demographic data used for that study.

The wholesale customer demand study shows population and employment estimates for 2001 and projections through 2030. Because the horizon year for *Projections 2002* was 2025, it was necessary for the purposes of this PEIR to extend the projections to 2030. In most cases, the projections were extended by assuming the same (numeric) amount of growth between 2025 and 2030 as was projected to occur between 2020 and 2025.

Tables E.3.1 and **E.3.2** summarize the projections of employment and population growth used for the water demand projections, by county. In Table E.3.1, two interim years – 2005 and 2025 – have been added to the boundary years shown in the wholesale customer demand study. The estimates for 2005 and 2025 were created to provide a consistent interval for comparison of the growth assumed for the water demand projections to other sets of projections (primarily ABAG's *Projections 2003* and *Projections 2005*). For wholesale customers, the interim year estimates assume a constant numeric rate of growth over the entire projection period; in other words, both employment and population would increase in a straight line with constant slope over the 29-year period (2001-2030). This assumption is consistent with the procedure used in the wholesale demand report both to create year-by-year estimates and to extend the projections to 2030. The retail customer demand study uses a base year of 2000, but includes projections for 2005 and 2025 as well as 2030.

Table E.3.2 calculates the numeric and percentage changes in employment and population that would occur in the portion of each county served by the SFPUC and its wholesale customers.

TABLE E.3.1
EMPLOYMENT AND POPULATION PROJECTIONS FOR WATER DEMAND ESTIMATES:
SUMMARY BY COUNTY^a

	Employment				Population			
	2001	2005	2025	2030	2001	2005	2025	2030
Alameda County	238,565	251,963	318,953	335,701	456,962	468,786	527,908	542,688
Santa Clara County	501,186	519,755	612,598	635,809	466,452	482,168	560,746	580,391
San Mateo County	394,346	411,273	495,898	517,056	703,185	718,517	795,642	814,904
Total Wholesale Customers	1,134,097	1,182,991	1,427,449	1,488,566	1,626,599	1,669,471	1,884,296	1,937,983
San Francisco	638,840	656,480	770,500	795,400	760,075	772,470	834,448	849,942
Total Area Served	1,772,937	1,839,471	2,197,949	2,283,966	2,386,674	2,441,941	2,718,744	2,787,925

^a Includes only those portions of each county served by SFPUC wholesale water customers or served directly by the SFPUC (San Francisco County). Population estimates for San Mateo County include updated figures for the Westborough Water District from the district's Urban Water Management Plan .

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

TABLE E.3.2
POPULATION AND EMPLOYMENT PROJECTIONS FOR WATER DEMAND ESTIMATES:
EXPECTED CHANGE BY COUNTY^a

Area	2001-2030		2005-2025		2005-2030	
	#	%	#	%	#	%
Change in Employment						
Alameda County ^a	97,136	40.7%	66,990	26.6%	83,738	33.2%
Santa Clara County	134,623	26.9%	92,843	17.9%	116,054	22.3%
San Mateo County	122,710	31.1%	84,627	20.6%	105,783	25.7%
Total Wholesale Customers	354,469	31.3%	244,462	20.7%	305,575	25.8%
San Francisco	156,560	24.5%	114,020	17.4%	138,920	21.2%
Total Area Served	511,029	28.8%	358,482	19.5%	444,495	24.2%
Change in Population						
Alameda County ^a	85,726	18.8%	59,122	12.6%	73,902	15.8%
Santa Clara County	113,939	24.4%	78,578	16.3%	98,223	20.4%
San Mateo County	111,719	15.9%	77,125	10.7%	96,387	13.4%
Total Wholesale Customers	311,384	19.1%	214,825	12.9%	268,512	16.1%
San Francisco	89,867	11.8%	61,978	8.0%	77,472	10.0%
Total Area Served	401,251	16.8%	276,803	11.3%	345,984	14.2%

^a Includes only those portions of each county served by SFPUC wholesale water customers or served directly by the SFPUC (San Francisco County). Population estimates for San Mateo County include updated figures for the Westborough Water District from the district's Urban Water Management Plan .

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

These employment and population projections used in the water demand models indicate the type and amount of growth that is expected by wholesale customers and the SFPUC in the service area for which water will be required, and provide a basis for comparison with ABAG's current forecasts and other forecasts for the region.

Table E.3.3 compares the amount of growth expected between 2005 and 2025 to the amount that occurred between 1985 and 2005. This table provides an indication of whether future growth is expected to exceed past growth. It indicates that the percentage change in employment between 2005 and 2025 is expected to be smaller than the percentage change observed between 1985 and 2005, except in Santa Clara County and San Francisco County. Santa Clara County, which absorbed major employment losses during the “dot com bust” at the beginning of this decade, is estimated to have lost employment during the past 20 years. As a result, the percentage gain projected for the served portions of Santa Clara County during the next 20 years, although smaller than the percentage changes expected in the served portions of Alameda and San Mateo Counties, would represent a marked positive change from the experience of the past two decades. San Francisco, which was also affected by the dot com bust (but not as severely as Santa Clara County), showed modest employment growth during the past 20 years, but is expected to gain more jobs in the future.

TABLE E.3.3
POPULATION AND EMPLOYMENT PROJECTIONS FOR WATER DEMAND ESTIMATES:
EXPECTED CHANGE COMPARED TO PAST CHANGE^a

Area	1985-2005		2005-2025	
	#	%	#	%
Employment Change				
Alameda County	74,090	53.5%	66,990	26.6%
Santa Clara County	-18,770	-4.6%	92,843	17.9%
San Mateo County	54,770	21.5%	84,627	20.6%
Total Wholesale Customers	110,090	13.7%	244,462	20.7%
San Francisco	22,360	4.0%	114,020	17.4%
Total Area Served	132,450	9.7%	358,482	19.5%
Population Change				
Alameda County	116,100	32.4%	59,122	12.6%
Santa Clara County	74,600	19.2%	78,578	16.3%
San Mateo County	113,050	18.7%	77,125	10.7%
Total Wholesale Customers	303,750	22.5%	214,825	12.9%
San Francisco	79,500	11.1%	61,978	8.0%
Total Area Served	383,250	18.5%	276,803	11.3%

^a Includes only those portions of each county served by SFPUC wholesale water customers or served directly by the SFPUC (San Francisco County). Population estimates for San Mateo County include updated figures for the Westborough Water District from the district's Urban Water Management Plan .

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

In the areas of San Mateo County served by SFPUC wholesale customers, the percentage increase in employment is expected to be slightly smaller during the forecast period than it was during the past two decades, but the numeric change is expected to be greater (by nearly 30,000 jobs, which would be about 55 percent more than were added during 1985-2005).

Table E.3.3 further indicates that, without exception, the percentage change in population during the next two decades is expected to be smaller than the percentage change during the past two, and that, except areas of Santa Clara County served by SFPUC water customers, the numeric change is expected to be smaller as well. (The number of residents added in this portion of Santa Clara County between 2005 and 2025 is projected to exceed the number added between 1985 and 2005 by about 4,000, or five percent.)

Projections of employment and population for each wholesale customer's service area are presented in **Table E.3.4**. This table parallels county Table E.3.1 in that it provides estimates of employment and population in 2001, 2005, 2025, and 2030.

Tables E.3.5 and **E.3.6** provide information parallel to that provided in county Table E.3.2, by calculating the numeric and percentage change in employment (Table E.3.5) and population (Table E.3.6) for each wholesale customer service area during 2001-30, 2005-2025, and 2005-30.

Comparisons of ABAG and Other Forecasts

Overview of ABAG Projections

As was noted on page E.3-2, many of the wholesale customers selected the employment and population growth projections prepared by the Association of Bay Area Governments (ABAG) for use in the water demand model to forecast 2030 water demand for their service areas.¹ ABAG generally updates its projections every other year. At the time the demand projections for this project were prepared, *Projections 2002* was the current set.

Comparing Water Customers' Projections to ABAG Projections

The SFPUC wholesale customers' projections are specific to the area served by the respective water districts, while ABAG provides projections for cities – both for the area within each city's corporate limits and, where cities abut unincorporated areas, for cities and their spheres of influence or planning areas. Because most water customers' service areas are not congruent with the boundaries of ABAG projection areas, the wholesale customers' projections of employment and population growth are not directly comparable to ABAG's projections of employment and population growth.

¹ The end-use demand model utilized published population and employment projections to forecast the growth in the number of applicable water accounts. Each wholesale customer selected the projections source to be used for its service area. The selected population and employment projections were input into the demand model and the growth rate from the selected projection was applied to the applicable accounts. The water demand model and the development of water demand projections is described in more detail in PEIR Appendix E.2 and in the wholesale and retail customer demand studies (URS, 2004; Hannaford and Hydroconsult, 2004).

TABLE E.3.4
EMPLOYMENT AND POPULATION PROJECTIONS FOR WATER DEMAND ESTIMATES:
DETAIL FOR WATER CUSTOMERS

Customer	Employment				Population			
	2001	2005	2025	2030	2001	2005	2025	2030
Alameda County								
Alameda County Water District	151,092	160,853	209,657	221,858	316,523	325,269	368,999	379,931
Hayward	87,473	91,110	109,296	113,843	140,439	143,517	158,909	162,757
Santa Clara County								
Milpitas	53,566	56,678	72,239	76,129	62,756	66,354	84,344	88,841
Mountain View	75,629	78,393	92,214	95,669	71,160	72,610	79,858	81,670
Palo Alto	105,432	106,645	112,708	114,224	59,954	61,229	67,605	69,199
Purissima Hills Water District	420	425	451	457	6,032	6,133	6,637	6,763
San Jose (North)	2,500	2,618	3,206	3,353	11,098	11,455	13,240	13,686
Santa Clara	138,163	143,524	170,326	177,027	104,349	109,363	134,431	140,698
Stanford University	na	na	na	na	19,738	20,867	26,513	27,924
Sunnyvale	125,476	131,472	161,454	168,950	131,365	134,157	148,119	151,610
San Mateo County								
Brisbane	3,789	5,966	16,853	19,575	3,174	3,372	4,359	4,606
Burlingame	31,205	31,888	35,306	36,160	30,154	30,818	34,137	34,967
CWS – Bear Gulch District	42,899	43,571	46,933	47,774	66,197	67,235	72,422	73,719
CWS – Mid-Peninsula District	79,493	82,400	96,934	100,568	120,856	123,474	136,562	139,834
CWS – South San Francisco District	49,288	51,089	60,093	62,344	49,207	50,638	57,795	59,584
Coastside County Water District	5,402	5,594	6,555	6,795	18,319	19,237	23,826	24,973
Daly City	26,941	27,912	32,767	33,981	106,117	107,432	114,007	115,651
East Palo Alto	3,289	4,032	7,745	8,673	24,395	25,542	31,278	32,712
Estero MID	24,318	25,356	30,543	31,840	34,568	35,330	39,143	40,096
Guadalupe Valley MID	4,442	4,611	5,457	5,668	446	599	1,366	1,558
Hillsborough	1,216	1,239	1,352	1,380	11,618	11,768	12,520	12,708
Los Trancos County Water District ^a	na	na	na	na	740	789	1,033	1,094
Menlo Park	10,053	10,499	12,729	13,287	12,153	12,360	13,396	13,655
Mid-Peninsula Water District	14,705	15,742	20,925	22,221	26,443	26,657	27,729	27,997
Millbrae	6,664	6,850	7,777	8,009	21,460	21,972	24,534	25,174
North Coast County Water District	5,797	6,029	7,188	7,478	40,457	41,474	46,558	47,829
Redwood City	66,389	68,774	80,697	83,678	81,888	83,494	91,527	93,535
San Bruno	16,622	17,884	24,193	25,770	40,727	41,762	46,936	48,229
Skyline County Water District	224	224	224	224	1,210	1,413	2,429	2,683
Westborough Water District ^b	1,610	1,613	1,627	1,631	13,056	13,150	14,225	14,300
Total Wholesale Customers	1,134,097	1,182,991	1,427,449	1,488,566	1,626,599	1,669,470	1,884,437	1,937,983
San Francisco	638,840	656,480	770,500	795,400	760,075	772,470	834,448	849,942
Total Area Served	1,772,937	1,839,471	2,197,949	2,283,966	2,386,674	2,441,940	2,718,885	2,787,925

^a Los Trancos County Water District was acquired by CWS in 2006, and is now part of the CWS – Bear Gulch District. Because it was a separate entity when these projections were prepared, it is presented separately in this analysis.

^b Population estimates from Westborough Water District's 2005 Urban Water Management Plan.

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

TABLE E.3.5
EMPLOYMENT PROJECTIONS FOR WATER DEMAND ESTIMATES:
EXPECTED CHANGE FOR WATER CUSTOMERS

Area	Employment Change					
	2001-2030		2005-2025		2005-2030	
	#	%	#	%	#	%
Alameda County						
Alameda County Water District	70,766	46.8%	48,804	30.3%	61,005	37.9%
Hayward	26,370	30.1%	18,186	20.0%	22,733	25.0%
Santa Clara County						
Milpitas	22,563	42.1%	15,561	27.5%	19,451	34.3%
Mountain View	20,040	26.5%	13,821	17.6%	17,276	22.0%
Palo Alto	8,792	8.3%	6,063	5.7%	7,579	7.1%
Purissima Hills Water District	37	8.8%	26	6.0%	32	7.5%
San Jose (North)	853	34.1%	588	22.5%	735	28.1%
Santa Clara	38,864	28.1%	26,802	18.7%	33,503	23.3%
Stanford University	na	na	na	na	na	na
Sunnyvale	43,474	34.6%	29,982	22.8%	37,478	28.5%
San Mateo County						
Brisbane	15,786	416.6%	10,887	182.5%	13,609	228.1%
Burlingame	4,955	15.9%	3,418	10.7%	4,272	13.4%
CWS – Bear Gulch District	4,875	11.4%	3,362	7.7%	4,203	9.6%
CWS – Mid-Peninsula District	21,075	26.5%	14,534	17.6%	18,168	22.0%
CWS – South San Francisco District	13,056	26.5%	9,004	17.6%	11,255	22.0%
Coastside County Water District	1,393	25.8%	961	17.2%	1,201	21.5%
Daly City	7,040	26.1%	4,855	17.4%	6,069	21.7%
East Palo Alto	5,384	163.7%	3,713	92.1%	4,641	115.1%
Estero MID	7,522	30.9%	5,187	20.5%	6,484	25.6%
Guadalupe Valley MID	1,226	27.6%	846	18.3%	1,057	22.9%
Hillsborough	164	13.5%	113	9.1%	141	11.4%
Los Trancos County Water District ^b	na	na	na	na	na	na
Menlo Park	3,234	32.2%	2,230	21.2%	2,788	26.6%
Mid-Peninsula Water District	7,516	51.1%	5,183	32.9%	6,479	41.2%
Millbrae	1,345	20.2%	927	13.5%	1,159	16.9%
North Coast County Water District	1,681	29.0%	1,159	19.2%	1,449	24.0%
Redwood City	17,289	26.0%	11,923	17.3%	14,904	21.7%
San Bruno	9,148	55.0%	6,309	35.3%	7,886	44.1%
Skyline County Water District	0	0.0%	0	0.0%	0	0.0%
Westborough Water District ^b	21	1.3%	14	0.9%	18	1.1%
Total Wholesale Customers	354,469	31.3%	244,462	20.7%	305,577	25.8%
San Francisco	156,560	24.5%	114,020	17.4%	138,920	21.2%
Total Area Served	511,029	28.8%	358,482	19.5%	444,497	24.2%

^a Los Trancos County Water District was acquired by CWS in 2006, and is now part of the CWS – Bear Gulch District. Because it was a separate entity when these projections were prepared, it is presented separately in this analysis.

^b Population estimates from Westborough Water District's 2005 Urban Water Management Plan.

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

TABLE E.3.6
POPULATION PROJECTIONS FOR WATER DEMAND ESTIMATES:
EXPECTED CHANGE FOR WATER CUSTOMERS

Area	Population Change					
	2001-2030		2005-2025		2005-2030	
	#	%	#	%	#	%
Alameda County						
Alameda County Water District	63,408	20.0%	43,730	13.4%	54,662	16.8%
Hayward	22,318	15.9%	15,392	10.7%	19,240	13.4%
Santa Clara County						
Milpitas	26,085	41.6%	17,990	27.1%	22,487	33.9%
Mountain View	10,510	14.8%	7,248	10.0%	9,060	12.5%
Palo Alto	9,245	15.4%	6,376	10.4%	7,970	13.0%
Purissima Hills Water District	731	12.1%	504	8.2%	630	10.3%
San Jose	2,588	23.3%	1,785	15.6%	2,231	19.5%
Santa Clara	36,349	34.8%	25,068	22.9%	31,335	28.7%
Stanford University	8,186	41.5%	5,646	27.1%	7,057	33.8%
Sunnyvale	20,245	15.4%	13,962	10.4%	17,453	13.0%
San Mateo County						
Brisbane	1,432	45.1%	987	29.3%	1,234	36.6%
Burlingame	4,813	16.0%	3,319	10.8%	4,149	13.5%
CWS - Bear Gulch District	7,522	11.4%	5,187	7.7%	6,484	9.6%
CWS - Mid-Peninsula District	18,978	15.7%	13,088	10.6%	16,360	13.3%
CWS - South San Francisco District	10,377	21.1%	7,157	14.1%	8,946	17.7%
Coastside County Water District	6,654	36.3%	4,589	23.9%	5,736	29.8%
Daly City	9,534	9.0%	6,575	6.1%	8,219	7.7%
East Palo Alto	8,317	34.1%	5,736	22.5%	7,170	28.1%
Estero MID/Foster City	5,528	16.0%	3,813	10.8%	4,766	13.5%
Guadalupe Valley MID	1,112	249.3%	767	127.9%	959	159.9%
Hillsborough	1,090	9.4%	752	6.4%	940	8.0%
Los Trancos County Water District ^a	354	47.8%	244	30.9%	305	38.7%
Menlo Park	1,502	12.4%	1,036	8.4%	1,295	10.5%
Mid-Peninsula Water District	1,554	5.9%	1,072	4.0%	1,340	5.0%
Millbrae	3,714	17.3%	2,562	11.7%	3,202	14.6%
North Coast County Water District	7,372	18.2%	5,084	12.3%	6,355	15.3%
Redwood City	11,647	14.2%	8,033	9.6%	10,041	12.0%
San Bruno	7,502	18.4%	5,174	12.4%	6,467	15.5%
Skyline County Water District	1,473	121.7%	1,016	71.9%	1,270	89.9%
Westborough Water District	1,244	9.5%	1,075	8.2%	1,150	8.7%
Total	311,384	19.1%	214,966	12.9%	268,513	16.1%
San Francisco	89,867	11.8%	61,978	8.0%	77,472	10.0%
Total Area Served	401,251	16.8%	276,944	11.3%	345,985	14.2%

^a Los Trancos County Water District was acquired by CWS in 2006, and is now part of the CWS – Bear Gulch District. Because it was a separate entity when these projections were prepared, it is presented separately in this analysis.

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

To compare the changing expectation of growth in the SFPUC wholesale customer service area as depicted in the evolving sets of projections produced by ABAG, therefore, this analysis assigns wholesale customers to ABAG's projection units (typically cities or, where a city is bordered by unincorporated area, subregional study areas). As suggested above, this assignment is inexact: in some cases, only part of a city is served by a wholesale customer, or the wholesale customer serves an unincorporated area that could not be segregated from other unincorporated areas in the ABAG materials. **Tables E.3.A.1** and **E.3.A.2**, in Attachment E.3.A (at the end of this appendix), detail the assumptions that were made to establish a correspondence between areas served by wholesale water customers and areas for which ABAG has prepared projections of employment and population, and the resulting correspondences between water customers and ABAG areas.

Most of the discussion that follows – describing ABAG's projections for employment and population growth in the nine-county Bay Area, the four counties that include the SFUC service area, and the portions of the four counties within the SFPUC service area – is based solely on the ABAG estimates of current and future conditions. It is only when the ABAG projections are compared to the water customers' projections (e.g., beginning with **Table E.3.33** and the related text), that the correspondence between water customer service areas and ABAG jurisdictions may introduce some distortion into the analysis, because of the inexact matches between the ABAG areas and the water service areas.

ABAG Projections: Evolution from *Projections 2002* to *Projections 2005*

ABAG, the regional planning agency in the Bay Area, provides long-term demographic and economic forecasts for the nine Bay Area counties. ABAG produces a biennial *Projections* series developed from a series of computer models. The projections are utilized by regional transportation and air quality agencies, local government, and private industry. As noted above, ABAG projections were selected by many of the wholesale customers as the basis for their growth and employment projections. In addition, because ABAG is the regional planning agency in the Bay Area, the ABAG projections in general provide a useful tool for assessing assumptions and forecasts made by other agencies regarding future trends in the area.

In 2003, ABAG revised the assumptions that provide the basis for its biennial (every two year) projections, to incorporate additional assumptions about future development in the Bay Area. To lay out how this change in underlying assumptions compares to the underlying assumptions at the time water demand projections were being prepared (and to compare the projections based on those assumptions), this appendix first presents a comprehensive comparison of the ABAG *Projections 2002* with *Projections 2003*, the first year incorporating the smart growth principles, and then presents a comprehensive comparison of *Projections 2003* and *Projections 2005*, ABAG's current projections set. This process provides a look at the evolution of ABAG's expectations for growth in the Bay Area and its constituent communities.

Changes in the Underlying Assumptions

Basis for Projections 2002

ABAG's projections have historically been based on a model that forecasts growth in the region in relation to national economic and demographic trends. In this model, projections of total employment growth in the nine-county Bay Area are based on expected growth of the national economy and the relative attractiveness of the Bay Area compared to other regions. This regional forecast provides a "control total," which is then distributed among subareas within the region. The subareas are based primarily on municipal jurisdictions.²

The allocation of growth to subareas within the region has historically been based on existing patterns of economic activity and the availability of land for commercial, industrial, and residential development, and housing opportunities for employees. The distribution process begins with jobs: new economic activities are assumed to locate near existing similar or linked activities, and trends showing growth or decline are generally assumed to continue (although not necessarily at the same rate).

Residential (household and population) growth is projected for each county, based primarily on the "cohort-survival method" (births minus deaths), with additional assumptions about net migration. The migration assumptions are based on the relationship between predicted labor force-aged population and forecast employment: if a tight labor market is expected, then in-migration is assumed to occur. Assumptions about housing costs are also used, in recognition of the fact that housing prices outside the nine-county region may be more affordable than prices within the region.

The total population for each county is distributed to specific locations within the Bay Area (and beyond) based a series of variables including employment locations, housing opportunities and costs, education, and the cost of travel. The final forecasts are refined to recognize potential constraints on land availability. Land availability estimates are based on local land use policies and regulations, such as general plans and zoning codes.

Basis for Projections Beginning with Projections 2003

Beginning in 2003, ABAG added a new policy dimension to its regional forecasts, an overlay of "smart growth" principles. ABAG defines smart growth as:

Development that reflects higher densities, mixed use, and a higher proportion of housing and employment growth in urban areas, particularly near transit stations and along transit corridors, as well as in town centers (ABAG, 2002).

² Subareas reported in the *Projections* series are "subregional study areas," which may be cities (when city limits coincide with a city's sphere of influence), city spheres of influence (considered to be each city's expected ultimate urban boundaries until modified), or "other subregional areas." ABAG also develops some projections (including population) for cities within jurisdictional boundaries (city limits). ABAG details its projections for areas as small as census tracts.

The smart growth policies have the following key impacts of the on the projections:

- Substitution of ABAG’s smart growth policy-based assumptions about development potential for local land use policy assumptions. This substitution results in a geographic redistribution of development expectations. ABAG assumes that, over time – as general plans and zoning ordinances are updated – local policies will be modified to reflect smart growth principles.
- Rearrangement of the total expected growth in the region among jurisdictions, beginning in about 2010. The pattern of growth reflected in *Projections 2003* and *Projections 2005* is “mainly transit-oriented, and focuses development in urban core areas throughout the region.” ABAG, the Metropolitan Transportation Commission (MTC), and the State of California are assumed to make funding recommendations and decisions linking transportation projects to the adoption and implementation of smart growth land use principles. ABAG recognizes, however, that “because of the time required to obtain incentives and make investments a reality, changes to land use patterns won’t begin to occur until 2010” (ABAG, 2004).
- Increased housing production. *Projections 2003* (like its successor, *Projections 2005*) assumes that a combination of regulatory and policy changes, along with “partial government funding,” will be needed “to spur an increase in overall housing production, and to channel housing toward infill sites”. Specifically, the projections anticipate that the removal of barriers to infill development and an increase in (unspecified) government funds of \$350 million per year will help to increase regional housing production by 5,000 units per year between 2010 and 2020, and by 7,500 units per year between 2020 and 2030.

Growth Expected by *Projections 2002* and *Projections 2003*

Projected Growth in the San Francisco Bay Area

Table E.3.7 establishes a framework for evaluating the evolution of the ABAG projections by comparing the employment projections for ABAG’s entire nine-county area presented in ABAG’s *Projections 2002* – the set on which most of the wholesale customer water demand projections are based – to employment projections for the nine counties in *Projections 2003*, the first set that uses the smart growth principles. This comparison illustrates the change in expectations for employment growth resulting from ABAG’s shift to a smart growth policy-based projection. The table focuses on the change expected to occur between 2005 and 2025, which is the horizon year for *Projections 2002*.

TABLE E.3.7
ABAG PROJECTIONS 2002 AND PROJECTIONS 2003:
EMPLOYMENT PROJECTIONS FOR THE NINE-COUNTY BAY AREA

Source of Projection	Jobs in 2005	Jobs in 2025	New Jobs, 2005-2025
<i>Projections 2002</i>	3,933,870	4,932,590	998,720
<i>Projections 2003</i>	3,848,870	4,982,800	1,133,930
% change	-2%	1%	14%

SOURCES: ABAG, 2001; ABAG, 2002.

This table shows that *Projections 2003* anticipates more employment growth within the Bay Area than did *Projections 2002*: the number of jobs is estimated to be lower in 2005, and to increase to a higher total in 2025. *Projections 2003* forecasts that the Bay Area will gain 135,210 more jobs between 2005 and 2025 than *Projections 2002* forecasts for this period; by 2025, the Bay Area is projected to have about 50,200 more jobs, according to *Projections 2003*. This adjustment in the employment projection reflects ABAG's increasing understanding of how many jobs were lost in the "dot com bust" recession in the early part of this decade, coupled with the ongoing assumption that the *Projections 2002* forecast of total employment in 2025 continued to represent a reasonable expectation for the future.

Table E.3.8 provides a similar comparison for population in the nine-county Bay Area. This table indicates that *Projections 2003* anticipates about 23 percent more population growth in the nine-county Bay Area between 2005 and 2025 than was anticipated in *Projections 2002*. This additional growth (234,100 more residents by 2025 in *Projections 2003*) is consistent with the increase in housing production forecasted in *Projections 2003* compared with *Projections 2002*, which would add 87,500 housing units between 2010 and 2025.

TABLE E.3.8
ABAG PROJECTIONS 2002 AND PROJECTIONS 2003:
POPULATION PROJECTIONS FOR THE NINE-COUNTY BAY AREA

Source of Projection	Population in 2005	Population in 2025	Added Population, 2005-2025
<i>Projections 2002</i>	7,193,900	8,223,740	1,029,840
<i>Projections 2003</i>	7,193,900	8,457,800	1,263,900
% change	0%	3%	23%

SOURCES: ABAG, 2001; ABAG, 2002.

Projected Growth in the Four Water System Counties

The SFPUC water system delivers water to customers in four Bay Area counties: Alameda, Santa Clara, San Mateo, and San Francisco. The SFPUC system delivers water to 30 wholesale customers in the first three of these counties³ and to retail customers in San Francisco.⁴ (The four counties are considered here in their entirety; the following subsection considers the portion of the four-county area served within the service area of the SFPUC and its wholesale customers.)

³ There are 27 wholesale customers, but California Water Service Company (CWS) 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, the 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. The 30 wholesale customer entities referenced here include the CWS districts and Los Trancos as distinct entities.

⁴ The SFPUC also serves a few large retail customers in Alameda, San Mateo, and Tuolumne Counties, which project no change in water demand for 2030. This analysis focuses on projections of the wholesale customers and San Francisco.

To illuminate the differences between ABAG's *Projections 2002* and *Projections 2003* for the counties served by SFPUC water, **Tables E.3.9** and **E.3.10** compare employment and population projections in this four-county area. *Projections 2003* estimates that the four-county area had 81,000 fewer jobs in 2005 than did *Projections 2002*, but expects 20 percent (138,400) more jobs to be added between 2005 and 2025. By 2025, the number of jobs in the four-county area would be about two percent higher under *Projections 2003* than under *Projections 2002*.

TABLE E.3.9
ABAG PROJECTIONS 2002 AND PROJECTIONS 2003:
EMPLOYMENT PROJECTIONS FOR THE FOCUSED FOUR-COUNTY AREA

Source of Projection	Jobs in 2005	Jobs in 2025	Added Jobs, 2005-2025
<i>Projections 2002</i>	2,989,370	3,682,510	693,140
<i>Projections 2003</i>	2,908,370	3,739,920	831,550
% change	-3%	2%	20%

SOURCES: ABAG, 2001; ABAG, 2002.

TABLE E.3.10
ABAG PROJECTIONS 2002 AND PROJECTIONS 2003:
POPULATION PROJECTIONS FOR THE FOCUSED FOUR-COUNTY AREA

Source of Projection	Population in 2005	Population in 2025	Added Population, 2005-2025
<i>Projections 2002</i>	4,855,400	5,406,900	551,500
<i>Projections 2003</i>	4,855,400	5,695,800	840,400
% change	0%	5%	52%

SOURCES: ABAG, 2001; ABAG, 2002.

In combination with Table E.3.7, Table E.3.9 shows that:

- On a percentage basis, the four-county area accounts for greater employment losses as a result of the “dot com bust” than does the nine-county area as a whole. In the Bay Area as a whole (Table E.3.7), *Projections 2003* estimates *total* employment in 2005 that is about two percent lower than 2005 employment projected in *Projections 2002*; in the four-county area, the difference between these projections is three percent. Numerically, *Projections 2003* estimates that the nine Bay Area counties had 85,000 fewer jobs in 2005 than were forecasted in *Projections 2002*, and it estimates that the four-county area had 81,000 fewer jobs. In other words, the four-county area accounts for 95 percent of the nine-county employment adjustment for 2005 incorporated into *Projections 2003*.
- The increase in job *growth* in the four-county area anticipated by *Projections 2003* compared to *Projections 2002* – that is, about 138,400 more new jobs between 2005 and 2025 – is greater than the increase projected for the nine-county Bay Area as a whole (a

difference of about 135,200 new jobs between *Projections 2003* and *Projections 2002*). This difference means that, just as the four-county area experienced most of the job loss during the dot com bust, it would account for all of the added job growth during the ensuing recovery.

Together, the comparisons of projections for the nine-county Bay Area and the four-county area indicate that employment in the Bay Area is expected to be increasingly concentrated in the four counties in which SFPUC water customers are located.

Table E.3.10 provides similar comparisons for population in the four-county area. It shows that the estimates of population in 2005 are the same in the two sets of projections, but that *Projections 2003* anticipates 52 percent more growth (840,400 new residents compared to 551,500 million) than *Projections 2002*. By 2025, *Projections 2003* projects the four counties to have about 5 percent more residents than were forecasted in *Projections 2002*.

In combination with Table E.3.8, Table E.3.10 shows that:

- The difference between *Projections 2002* and *Projections 2003* in the expected *total* population in 2025 is greater for the four-county area (about 289,000 more residents in *Projections 2003* in 2025) than for the entire nine-county Bay Area (about 234,100 more residents forecasted in 2025).
- The difference between the two sets of projections in the expected population *growth* forecasted for the 20-year period is also greater in the four-county area (with nearly 289,000 more new residents forecasted in the four counties in *Projections 2003* than were forecasted in *Projections 2002*, compared to about 234,100 more new residents in the nine counties in *Projections 2003*). (The difference in the *change* is the same as the difference in the *total* (previous bullet) are the same because the starting point – that is, population in 2005 – is the same in *Projections 2003* and *Projections 2002*.)

Together, the comparisons of projections for the nine-county and four-county areas indicate an expectation that population growth in the Bay Area will increasingly be concentrated in the four counties in which SFPUC water customers are located.

Projected Growth in the Area Served by SFPUC Water Customers

Employment Growth

ABAG projections of employment growth in the portion of the four-county area served by SFPUC water are compared in **Table E.3.11**. This table indicates that, in general, more new jobs are forecasted for this area by *Projections 2003* than were forecasted by *Projections 2002*. Overall, according to *Projections 2003*, the area would add nearly 438,300 jobs during the 20-year period, representing a 25 percent gain compared to the 2005 employment base and about 20 percent more growth than was forecast in *Projections 2002*.

Table E.3.12 provides detail about the employment projections for the ABAG cities that are served by one or more SFPUC water customers.

TABLE E.3.11
ABAG PROJECTIONS 2002 AND PROJECTIONS 2003:
EMPLOYMENT PROJECTIONS FOR THE AREA SERVED BY SFPUC WATER CUSTOMERS
(WHOLESALE AND RETAIL)^a

Area	Source of Projection	Jobs in 2005	Jobs in 2025	Change, 2005-2025	
				Number	Percent
Alameda County	Proj. 2002	248,720	316,270	67,550	27.2%
	Proj. 2003	248,720	325,440	76,720	30.8%
Santa Clara County	Proj. 2002	517,310	617,590	100,280	19.4%
	Proj. 2003	499,410	608,030	108,620	21.7%
San Mateo County	Proj. 2002	382,280	465,240	82,960	21.7%
	Proj. 2003	362,460	464,870	102,410	28.3%
Total Wholesale Customers	Proj. 2002	1,148,310	1,399,100	250,790	21.8%
	Proj. 2003	1,110,590	1,398,340	287,750	25.9%
San Francisco	Proj. 2002	656,480	770,500	114,020	17.4%
	Proj. 2003	635,480	786,020	150,540	23.7%
Total Customers	Proj. 2002	1,804,790	2,169,600	364,810	20.2%
	Proj. 2003	1,746,070	2,184,360	438,290	25.1%

^a Includes only those portions of each county served by SFPUC wholesale water customers or served directly by the SFPUC (San Francisco County).

SOURCES: ABAG, 2001; ABAG, 2002.

Table E.3.13 sorts the individual jurisdictions within the service area (a single wholesale customer may serve several jurisdictions) according to whether greater (total) employment in 2025 is expected by *Projections 2003* or *Projections 2002*. The projections are generally similar: *Projections 2003* expects that about one-half (16) of the jurisdictions will have about the same number of jobs in 2025 as were anticipated in *Projections 2002* (i.e., the projection is within 5 percent of the figure in *Projections 2002*); eight jurisdictions will have more jobs in 2025; and seven will have fewer jobs.

Table E.3.14 sorts the individual jurisdictions according to which set of projections anticipates a greater *increase* in the number of jobs between 2005 and 2025. This table differs from Table E.3.13 in that it shows the *change* in jobs during the 20-year period rather than the *total* number of jobs at the end of the period. As shown in the table, *Projections 2003* anticipates greater employment growth in 19 of the jurisdictions, about the same amount in 3,⁵ and less growth in 10.

Combining the information from Tables E.3.13 and E.3.14 indicates that most of the jurisdictions in which more growth is anticipated during the next 20 years (from Table E.3.14) would be, in large part, regaining jobs lost at the beginning of this decade (reflected in a reduced ABAG estimate of employment in 2005).

⁵ In all of the comparison tables, “about the same” means “within five percent.”

TABLE E.3.12
ABAG PROJECTIONS 2002 AND PROJECTIONS 2003:
EMPLOYMENT PROJECTIONS FOR CITIES WITHIN THE SFPUC SERVICE AREA
(WHOLESALE AND RETAIL)^a

ABAG Jurisdiction	Projections 2002				Projections 2003			
	2005	2025	Change, 2005-2025		2005	2025	Change, 2005-2025	
			#	%			#	%
Alameda County								
Fremont ^b	115,700	146,520	30,820	26.6%	115,700	154,740	39,040	33.7%
Hayward	92,060	109,850	17,790	19.3%	92,060	109,760	17,700	19.2%
Newark ^b	19,480	26,630	7,150	36.7%	19,480	22,720	3,240	16.6%
Union City ^b	21,480	33,270	11,790	54.9%	21,480	38,220	16,740	77.9%
Santa Clara County								
Milpitas	53,310	69,540	16,230	30.4%	49,770	68,440	18,670	37.5%
Mountain View	78,710	94,370	15,660	19.9%	82,410	102,840	20,430	24.8%
Los Altos Hills ^c	2,730	2,890	160	5.9%	2,720	2,790	70	2.6%
Palo Alto ^d	112,520	119,040	6,520	5.8%	110,620	119,600	8,980	8.1%
Santa Clara	140,820	170,260	29,440	20.9%	135,140	166,710	31,570	23.4%
Sunnyvale	129,220	161,490	32,270	25.0%	118,750	147,650	28,900	24.3%
San Mateo County								
Atherton ^f	3,600	4,040	440	12.2%	3,470	4,450	980	28.2%
Belmont ^g	15,380	19,500	4,120	26.8%	14,410	18,710	4,300	29.8%
Brisbane	8,800	15,820	7,020	79.8%	8,130	16,580	8,450	103.9%
Burlingame	29,780	32,590	2,810	9.4%	28,640	32,980	4,340	15.2%
Colma ^h	2,640	3,270	630	23.9%	2,530	3,610	1,080	42.7%
Daly City	26,250	30,840	4,590	17.5%	25,230	34,110	8,880	35.2%
East Palo Alto	3,730	8,540	4,810	129.0%	3,450	5,920	2,470	71.6%
Foster City ⁱ	21,130	25,580	4,450	21.1%	20,330	24,120	3,790	18.6%
Half Moon Bay ^j	5,220	6,140	920	17.6%	5,010	5,720	710	14.2%
Hillsborough	1,240	1,360	120	9.7%	1,210	1,280	70	5.8%
Menlo Park ^k	31,140	38,580	7,440	23.9%	30,310	37,050	6,740	22.2%
Millbrae	6,210	7,200	990	15.9%	6,060	8,520	2,460	40.6%
Pacifica ^l	4,960	6,000	1,040	21.0%	4,770	5,970	1,200	25.2%
Portola Valley ^f	1,140	1,160	20	1.8%	1,130	1,140	10	0.9%
Woodside ^f	2,050	2,100	50	2.4%	2,050	2,060	10	0.5%
Redwood City ^m	65,020	77,650	12,630	19.4%	56,740	70,660	13,920	24.5%
San Bruno	16,680	22,880	6,200	37.2%	16,390	26,890	10,500	64.1%
San Carlos ⁿ	17,880	21,070	3,190	17.8%	17,430	22,080	4,650	26.7%
San Mateo ⁿ	64,060	75,490	11,430	17.8%	61,600	79,400	17,800	28.9%
South San Francisco ^o	55,370	65,430	10,060	18.2%	53,570	63,620	10,050	18.8%
Total Wholesale Customers	1,148,310	1,399,100	250,790	21.8%	1,118,590	1,395,340	287,750	25.9%
San Francisco	656,480	770,500	114,020	17.4%	635,480	786,020	150,540	23.7%
Total Area Served	1,804,790	2,169,600	364,810	20.2%	1,746,070	2,184,360	438,290	25.1%

^a No separate projections for Guadalupe MID (part of Brisbane), Skyline County Water District (serves part of Woodside), Westborough Water District (serves part of South San Francisco), Stanford University (included by ABAG in the projections for Palo Alto), or San Jose (serves only a small portion of the city). Totals differ slightly from those shown in Table E.3.11 because the ABAG jurisdictions for which employment projections are reported in this table differ in geography from the water customer areas (see Tables E.3.A.1 and E.3.A.2).

^b Fremont, Newark, and Union City are served by the Alameda County Water District.

^c Los Altos Hills is served by the Purissima Hills Water District.

^d Palo Alto projections include Stanford University

^e This footnote deleted.

^f Atherton, Portola Valley, and part of Woodside are served by CWS - Bear Gulch District. All of Portola Valley (including the portion previously served by Los Trancos County Water District, which is now a part of CWS) and Woodside are included in these projections.

^g Belmont is served by the Mid-Peninsula Water District, which also serves parts of San Carlos.

^h Colma is served by CWS - South San Francisco District

ⁱ Foster City is served by Estero MID, which also serves a portion of San Mateo. The projections for San Mateo are included in the projections for CWS - Mid-Peninsula District.

^j Half Moon Bay and the adjacent unincorporated area (included in these figures) are served by the Coastside County Water District.

^k The City of Menlo Park Water Agency serves only a portion of the City of Menlo Park (less than half of the city's population). These figures are for the entire city.

^l Pacifica is served by the North Coast County Water District.

^m Redwood City Water Agency also serves portions of San Carlos and Woodside.

ⁿ Parts of San Carlos and San Mateo are served by CWS - Mid Peninsula District. Both cities are included here in their entirety.

^o South San Francisco is served by CWS - South San Francisco District + Westborough Water District.

SOURCE: ABAG, 2001; ABAG, 2002.

TABLE E.3.13
ABAG PROJECTIONS 2002 AND PROJECTIONS 2003: TOTAL JOBS IN 2025

<i>Projections 2003 Forecast is Greater than Projections 2002 Forecast</i>			<i>Projections 2003 Forecast is About the Same as Projections 2002 Forecast^a</i>			<i>Projections 2003 Forecast is Less than Projections 2002 Forecast</i>		
Jurisdiction	Jobs in 2025^b	Proj. 2002 Jobs as % of Proj. 2003 Jobs	Jurisdiction	Jobs in 2025^b	Proj. 2002 Jobs as % of Proj. 2003 Jobs	Jurisdiction	Jobs in 2025^b	Proj. 2002 Jobs as % of Proj. 2003 Jobs
Alameda County								
Union City	38,220	87.0%	Hayward	109,760	100.1%	Newark	22,720	117.2%
Fremont	154,740	94.7%						
Santa Clara County^d								
Mountain View	102,840	91.8%	Palo Alto	119,600	99.5%	Sunnyvale	147,650	109.4%
			Milpitas	68,440	101.6%			
			Santa Clara	166,710	102.1%			
			Los Altos Hills	2,790	103.6%			
San Mateo County								
Millbrae	8,520	84.5%	San Mateo	79,400	95.1%	Foster City	24,120	106.1%
San Bruno	26,890	85.1%	Brisbane	16,580	95.4%	Hillsborough	1,280	106.3%
						Half Moon Bay ^d	5,720	107.3%
Daly City	34,110	90.4%	San Carlos	22,080	95.4%	Redwood City	70,660	109.9%
Colma	3,610	90.6%						
Atherton	4,450	90.8%	Burlingame	32,980	98.8%	East Palo Alto	5,920	144.3%
			Pacifica	5,970	100.5%			
			Portola Valley	1,140	101.8%			
			Woodside	2,060	101.9%			
			South San Francisco	63,620	102.8%			
			Menlo Park	37,050	104.1%			
			Belmont	18,710	104.2%			
San Francisco County								
			San Francisco	786,020	98.0%			

^a Number of jobs in 2025 in *Projections 2003* is within five percent of the number of jobs in 2025 in *Projections 2002*.

^b Number of jobs in 2025 forecast in *Projections 2003*.

^c Stanford University is included within the City of Palo Alto in the ABAG projections. Only a small portion of the City of San Jose is within the district that obtains water from the SFPUC. It is considered misleading to include figures for all of San Jose in this analysis.

^d Half Moon Bay plus Half Moon Bay (unincorporated).

SOURCES: ABAG, 2001; ABAG, 2002.

TABLE E.3.14
ABAG PROJECTIONS 2002 AND PROJECTIONS 2003: CHANGE IN NUMBER OF JOBS, 2005-2025

Projections 2003 Forecast is Greater than Projections 2002 Forecast			Projections 2003 Forecast is About the Same as Projections 2002 Forecast ^a			Projections 2003 Forecast is Less than Projections 2002 Forecast		
Jurisdiction	Change in Jobs, 2005- 2025 ^b	Proj. 2002 Change in Jobs as % of Proj. 2003 Change in Jobs	Jurisdiction	Change in Jobs, 2005- 2025 ^b	Proj. 2002 Change in Jobs as % of Proj. 2003 Change in Jobs	Jurisdiction	Change in Jobs, 2005- 2025 ^b	Proj. 2002 Change in Jobs as % of Proj. 2003 Change in Jobs
Alameda County								
Union City	16,740	70.4%	Hayward	17,700	100.5%	Newark	3,240	220.7%
Fremont	39,040	78.9%						
Santa Clara County ^c								
Palo Alto	8,980	72.6%				Sunnyvale	28,900	111.7%
Mountain View	20,430	76.7%				Los Altos Hills	70	228.6%
Milpitas	18,670	86.9%						
Santa Clara	31,570	93.3%						
San Mateo County								
Millbrae	2,460	40.2%	Belmont	4,300	95.8%	Menlo Park	6,740	110.4%
Atherton	980	44.9%	South San Francisco	10,050	100.1%	Foster City	3,790	117.4%
						Half Moon Bay ^d	710	129.6%
Daly City	8,880	51.7%				Hillsborough	70	171.4%
Colma	1,080	58.3%				East Palo Alto	2,470	194.7%
San Bruno	10,500	59.0%				Portola Valley	10	200.0%
San Mateo	17,800	64.2%				Woodside	10	500.0%
Burlingame	4,340	64.7%						
San Carlos	4,650	68.6%						
Brisbane	8,450	83.1%						
Pacifica	1,200	86.7%						
Redwood City	13,920	90.7%						
San Francisco County								
San Francisco	150,540	75.7%						

^a Number of jobs added between 2005 and 2025 in *Projections 2003* is within five percent of the number of jobs added between 2005 and 2025 in *Projections 2002*.

^b Number of jobs added between 2005 and 2025 in *Projections 2003*.

^c Stanford University is included within the City of Palo Alto in the ABAG projections. Only a small portion of the City of San Jose is within the district that obtains water from the SFPUC. It is considered misleading to include figures for all of San Jose in this analysis.

^d Half Moon Bay plus Half Moon Bay (unincorporated).

SOURCES: ABAG, 2001; ABAG, 2002.

Population Growth

Table E.3.15 compares expectations of population growth between 2005 and 2025 in the portion of the four-county area served by SFPUC water. This table indicates that *Projections 2003* expects nearly 137,000 more residents in the part of the four-county area served by SFPUC and its wholesale customers than did *Projections 2002*. This expectation represents overall growth of 350,420 residents, or about 66 percent more new residents than the 211,600 forecast by earlier set of projections.

TABLE E.3.15
ABAG PROJECTIONS 2002 AND PROJECTIONS 2003:
POPULATION PROJECTIONS FOR THE AREA SERVED BY SFPUC WATER CUSTOMERS
(WHOLESALE AND RETAIL)^a

Area	Source of Projection	Population in 2005	Population in 2025	Change, 2005-2025	
				Number	Percent
Alameda County	Proj 2002	482,700	532,500	49,800	10.32%
	Proj 2003	481,100	552,500	71,400	14.84%
Santa Clara County	Proj 2002	473,100	545,300	72,200	15.26%
	Proj 2003	472,700	560,800	88,100	18.64%
San Mateo County	Proj 2002	727,000	800,000	73,000	10.04%
	Proj 2003	726,990	826,710	99,720	13.72%
Total Wholesale Customers	Proj 2002	1,682,800	1,877,800	195,000	11.59%
	Proj 2003	1,680,790	1,940,010	259,220	15.42%
San Francisco	Proj 2002	798,600	815,200	16,600	2.08%
	Proj 2003	798,600	889,800	91,200	11.42%
Total Customers	Proj 2002	2,481,400	2,693,000	211,600	8.53%
	Proj 2003	2,479,390	2,829,810	350,420	14.13%

^a Includes only those portions of each county served by SFPUC wholesale water customers or served directly by the SFPUC (San Francisco County).

SOURCES: ABAG, 2001; ABAG, 2002.

Table E.3.16 provides detail about the population projections for the ABAG cities that are served by one or more SFPUC water customers.

Table E.3.17 sorts the jurisdictions served by SFPUC water according to whether greater *total* population in 2025 is expected by *Projections 2003* or *Projections 2002*. Slightly more than one-half of the jurisdictions (18 of 31) are expected to have about the same number of residents in 2025 (within 5 percent) in both sets of projections. In this case, however, most of the remaining jurisdictions (11 of 13) are expected by *Projections 2003* to have more residents in 2025, and only 2 are expected to have fewer residents.

Table E.3.18 sorts the jurisdictions according to whether greater *change* in population is expected by *Projections 2003* or *Projections 2002* in the jurisdictions served by SFPUC water. This table indicates that the same 18 jurisdictions that are expected to have greater population *growth* during the coming two decades under *Projections 2003* also are expected to have greater *total* population at the end of the 20-year period (as shown in Table E.3.17 [i.e., jurisdictions where the *Projections 2002* population as a percent of *Projections 2003* population is less than 1.00 percent]). Of the remaining 14 jurisdictions, however, 11 are expected to have less population growth with *Projections 2003* than with *Projections 2002*. Most of these 11 jurisdictions are relatively small: the population growth anticipated for these communities by *Projections 2003* ranges from 400 to 3,500 new residents over the 20-year period (except in Newark, where 6,400 new residents are expected).

TABLE E.3.16
ABAG PROJECTIONS 2002 AND PROJECTIONS 2003:
POPULATION PROJECTIONS FOR THE AREA SERVED BY SFPUC WATER CUSTOMERS
(WHOLESALE AND RETAIL)^a

ABAG Jurisdiction	Projections 2002				Projections 2003			
	2005	2025	Change, 2005-2025		2005	2025	Change, 2005-2025	
			#	%			#	%
Alameda County								
Fremont ^b	214,600	233,200	18,600	8.7%	214,600	245,500	30,900	14.4%
Hayward	148,800	161,200	12,400	8.3%	147,600	164,200	16,600	11.2%
Newark ^b	45,400	53,400	8,000	17.6%	45,300	51,700	6,400	14.1%
Union City ^b	73,900	84,700	10,800	14.6%	73,600	91,100	17,500	23.8%
Santa Clara County								
Milpitas	68,400	86,300	17,900	26.2%	68,700	89,300	20,600	30.0%
Mountain View	73,300	80,900	7,600	10.4%	73,200	85,700	12,500	17.1%
Los Altos Hills ^c	10,000	10,500	500	5.0%	9,800	10,200	400	4.1%
Palo Alto ^d	75,800	82,800	7,000	9.2%	74,500	85,100	10,600	14.2%
Santa Clara	108,600	134,000	25,400	23.4%	108,600	133,100	24,500	22.6%
Sunnyvale	137,000	150,800	13,800	10.1%	137,900	157,400	19,500	14.1%
San Mateo County								
Atherton ^f	7,300	8,000	700	9.6%	7,400	8,000	600	8.1%
Belmont ^g	25,900	28,200	2,300	8.9%	25,800	28,300	2,500	9.7%
Brisbane	3,870	5,480	1,610	41.6%	3,770	4,940	1,170	31.0%
Burlingame	30,300	33,600	3,300	10.9%	30,000	32,300	2,300	7.7%
Colma ^h	1,330	1,620	290	21.8%	1,320	1,870	550	41.7%
Daly City	111,300	118,400	7,100	6.4%	112,000	125,300	13,300	11.9%
East Palo Alto	31,500	38,200	6,700	21.3%	32,200	43,100	10,900	33.9%
Foster City ⁱ	29,900	33,000	3,100	10.4%	30,100	31,900	1,800	6.0%
Half Moon Bay ^j	24,500	29,800	5,300	21.6%	24,200	27,700	3,500	14.5%
Hillsborough	11,100	11,800	700	6.3%	11,100	11,700	600	5.4%
Menlo Park ^k	36,100	39,100	3,000	8.3%	36,300	41,200	4,900	13.5%
Millbrae	21,400	23,100	1,700	7.9%	21,500	22,600	1,100	5.1%
Pacifica ^l	40,000	44,300	4,300	10.8%	40,200	42,600	2,400	6.0%
Portola Valley ^f	7,300	7,900	600	8.2%	7,100	7,700	600	8.5%
Redwood City ^m	103,100	112,600	9,500	9.2%	102,100	119,500	17,400	17.0%
San Bruno	41,200	44,700	3,500	8.5%	40,800	47,900	7,100	17.4%
San Carlos ⁿ	29,600	31,200	1,600	5.4%	29,800	33,300	3,500	11.7%
San Mateo ⁿ	101,900	113,100	11,200	11.0%	102,100	117,100	15,000	14.7%
South San Francisco ^o	62,800	68,700	5,900	9.4%	62,500	72,600	10,100	16.2%
Woodside ^f	6,600	7,200	600	9.1%	6,700	7,100	400	6.0%
Total Wholesale Customers	1,682,800	1,877,800	195,000	11.6%	1,680,790	1,940,010	259,220	15.4%
San Francisco	798,600	815,200	16,600	2.1%	798,600	889,800	91,200	11.4%
Total Area Served	2,481,400	2,693,000	211,600	8.5%	2,479,390	2,829,810	350,420	14.1%

^a No separate projections for Guadalupe MID (part of Brisbane), Skyline County Water District (serves part of Woodside), Westborough Water District (serves part of South San Francisco), Stanford University (included by ABAG in the projections for Palo Alto), or San Jose (serves only a small portion of the city). Totals differ slightly from those shown in Table E.3.15 because the ABAG jurisdictions for which employment projections are reported in this table differ in geography from the water customer areas (see Tables E.3.A.1 and E.3.A.2).

^b Fremont, Newark, and Union City are served by the Alameda County Water District.

^c Los Altos Hills is served by the Purissima Hills Water District.

^d Palo Alto projections include Stanford University

^e This footnote deleted.

^f Atherton, Portola Valley, and part of Woodside are served by CWS - Bear Gulch District. All of Portola Valley (including the portion previously served by Los Trancos County Water District, which is now a part of CWS) and Woodside are included in these projections.

^g Belmont is served by the Mid-Peninsula Water District, which also serves parts of San Carlos.

^h Colma is served by CWS - South San Francisco District

ⁱ Foster City is served by Estero MID, which also serves a portion of San Mateo. The projections for San Mateo are included in the projections for CWS - Mid-Peninsula District.

^j Half Moon Bay and the adjacent unincorporated area (included in these figures) are served by the Coastside County Water District.

^k The City of Menlo Park Water Agency serves only a portion of the City of Menlo Park (less than half of the city's population). These figures are for the entire city.

^l Pacifica is served by the North Coast County Water District.

^m Redwood City Water Agency also serves portions of San Carlos and Woodside.

ⁿ Parts of San Carlos and San Mateo are served by CWS - Mid Peninsula District. Both cities are included here in their entirety.

^o South San Francisco is served by CWS - South San Francisco District + Westborough Water District.

SOURCE: ABAG, 2001; ABAG, 2002.

TABLE E.3.17
ABAG PROJECTIONS 2002 AND PROJECTIONS 2003: TOTAL POPULATION IN 2025

<i>Projections 2003 Forecast is Greater than Projections 2002 Forecast</i>			<i>Projections 2003 Forecast is About the Same as Projections 2002 Forecast^a</i>			<i>Projections 2003 Forecast is Less than Projections 2002 Forecast</i>		
Jurisdiction	Population in 2025 ^b	Proj. 2002 Pop. as % of Proj. 2003 Pop.	Jurisdiction	Population in 2025 ^b	Proj. 2002 Pop. as % of Proj. 2003 Pop.	Jurisdiction	Population in 2025 ^b	Proj. 2002 Pop. as % of Proj. 2003 Pop.
Alameda County								
Union City	91,100	93.0%	Fremont	245,500	95.0%			
			Hayward	164,200	98.2%			
			Newark	51,700	103.3%			
Santa Clara County^c								
Mountain View	85,700	94.4%	Sunnyvale	157,400	95.8%			
			Milpitas	89,300	96.6%			
			Palo Alto	85,100	97.3%			
			Santa Clara	133,100	100.7%			
			Los Altos Hills	10,200	102.9%			
San Mateo County								
Colma	1,870	86.6%	San Mateo	117,100	96.6%	Half Moon Bay	27,700	107.6%
East Palo Alto	43,100	88.6%	Belmont	28,300	99.6%			
San Bruno	47,900	93.3%	Atherton	8,000	100.0%	Brisbane	4,940	110.9%
San Carlos	33,300	93.7%	Hillsborough	11,700	100.9%			
Redwood City	119,500	94.2%	Woodside	7,100	101.4%			
Daly City	125,300	94.5%	Millbrae	22,600	102.2%			
South San Francisco	72,600	94.6%	Portola Valley	7,700	102.6%			
Menlo Park	41,200	94.9%	Foster City	31,900	103.4%			
			Pacifica	42,600	104.0%			
			Burlingame	32,300	104.0%			
San Francisco County								
San Francisco	889,800	91.6%						

^a Population in 2025 in *Projections 2003* is within five percent of the population in 2025 in *Projections 2002*.

^b Population in 2025 forecast in *Projections 2003*.

^c Stanford University is included within the City of Palo Alto in the ABAG projections. Only a small portion of the City of San Jose is within the district that obtains water from the SFPUC. It is considered misleading to include figures for all of San Jose in this analysis.

^d Half Moon Bay plus Half Moon Bay (unincorporated).

SOURCES: ABAG, 2001; ABAG, 2002.

Growth Expected by *Projections 2003* and *Projections 2005*

Projected Growth in the San Francisco Bay Area

ABAG's current set of projections, *Projections 2005*, continues to assume that Bay Area growth will begin to reflect "smart growth" principles beginning in about 2010. Accordingly, *Projections 2005* relies on the same assumptions about increased housing production introduced in *Projections 2003*. *Projections 2005* differs from *Projections 2003*, however, in that it readjusts employment and population estimates for 2005 to reflect improved information about the number of jobs lost in the dot com bust of the early part of this decade and improved estimates of the 2005 population.

TABLE E.3.18
ABAG PROJECTIONS 2002 AND PROJECTIONS 2003: CHANGE IN POPULATION, 2005-2025

<i>Projections 2003 Forecast is Greater than Projections 2002 Forecast</i>			<i>Projections 2003 Forecast is About the Same as Projections 2002 Forecast^a</i>			<i>Projections 2003 Forecast is Less than Projections 2002 Forecast</i>		
Jurisdiction	Change in Population, 2005-2025 ^b	Proj. 2002 Change in Pop. as % of Proj. 2003 Change in Pop.	Jurisdiction	Change in Population, 2005-2025 ^b	Proj. 2002 Change in Pop. as % of Proj. 2003 Change in Pop.	Jurisdiction	Change in Population, 2005-2025 ^b	Proj. 2002 Change in Pop. as % of Proj. 2003 Change in Pop.
Alameda County								
Fremont	30,900	60.2%				Newark	6,400	125.0%
Union City	17,500	61.7%						
Hayward	16,600	74.7%						
Santa Clara County^c								
Mountain View	12,500	60.8%	Santa Clara	24,500	103.7%	Los Altos Hills	400	125.0%
Palo Alto	10,600	66.0%						
Sunnyvale	19,500	70.8%						
Milpitas	20,600	86.9%						
San Mateo County								
San Carlos	3,500	45.7%	Portola Valley	600	100.0%	Atherton	600	116.7%
San Bruno	7,100	49.3%				Hillsborough	600	116.7%
Colma	550	52.7%				Brisbane	1,170	137.6%
Daly City	13,300	53.4%				Burlingame	2,300	143.5%
Redwood City	17,400	54.6%				Woodside	400	150.0%
South San Francisco	10,100	58.4%				Half Moon Bay ^d	3,500	151.4%
Menlo Park	4,900	61.2%				Millbrae	1,100	154.5%
East Palo Alto	10,900	61.5%				Foster City	1,800	172.2%
San Mateo	15,000	74.7%				Pacifica	2,400	179.2%
Belmont	2,500	92.0%						
San Francisco County								
San Francisco	91,200	18.2%						

^a Population added between 2005 and 2025 in *Projections 2003* is within five percent of the population added between 2005 and 2025 in *Projections 2002*.

^b Population added between 2005 and 2025 in *Projections 2003*.

^c Stanford University is included within the City of Palo Alto in the ABAG projections. Only a small portion of the City of San Jose is within the district that obtains water from the SFPUC. It is considered misleading to include figures for all of San Jose in this analysis.

^d Half Moon Bay plus Half Moon Bay (unincorporated).

SOURCES: ABAG, 2001; ABAG, 2002.

Table E.3.19 compares estimates of employment in 2005, and projections of employment in 2025, from *Projections 2003* and *Projections 2005* for the nine-county Bay Area. This comparison shows a reduction in the estimate of total jobs in 2005 from about 3.8 million to about 3.5 million, an adjustment of nine percent. *Projections 2005* forecasts nearly 4.8 million jobs in 2025, down from the 5.0 million anticipated by *Projections 2003*. This future total reflects an expectation of stronger employment growth (more new jobs), but even the addition of 12 percent more jobs than were anticipated in *Projections 2003* is not sufficient to achieve the same number of jobs anticipated by that set of forecasts, given the smaller employment base estimated for 2005 in *Projections 2005*.

TABLE E.3.19
ABAG PROJECTIONS 2003 AND PROJECTIONS 2005:
EMPLOYMENT PROJECTIONS FOR THE NINE-COUNTY BAY AREA

Source of Projection	Jobs in 2005	Jobs in 2025	Jobs in 2030	New Jobs, 2005-2025	New Jobs, 2005-2030
<i>Projections 2003</i>	3,848,870	4,982,800	5,226,400	1,133,930	1,377,530
<i>Projections 2005</i>	3,516,960	4,788,330	5,120,600	1,271,370	1,603,640
% change	-9%	-4%	-2%	12%	16%

SOURCES: ABAG, 2001; ABAG, 2002

Because both *Projections 2003* and *Projections 2005* extend the forecasts through 2030, that year is also included in this table. By 2030, *Projections 2005* anticipates that total employment in the nine-county Bay Area will reach 5.1 million jobs, which is within 2 percent of the *Projections 2003* forecast of 5.2 million. This total reflects the expected addition of 1.6 million new jobs during the 25-year interval from 2005, or about 16 percent more than the 1.4 million anticipated in *Projections 2003*.

Table E.3.20 provides the same comparison for population. It shows that the two sets of ABAG forecasts – *Projections 2003* and *Projections 2005* – maintain similar estimates of population in the nine Bay Area counties in 2005, and similar projections of population in the nine-county area in 2025. The projections for 2025 (8.42 million in *Projections 2005*; 8.46 million in *Projections 2003*) are within 0.5 percent of each other.

TABLE E.3.20
ABAG PROJECTIONS 2003 AND PROJECTIONS 2005:
POPULATION PROJECTIONS FOR THE NINE-COUNTY BAY AREA

Source of Projection	Population in 2005	Population in 2025	Population in 2030	Added Population, 2005-2025	Added Population, 2005-2030
<i>Projections 2003</i>	7,193,900	8,457,800	8,780,300	1,263,900	1,586,400
<i>Projections 2005</i>	7,091,700	8,419,100	8,747,100	1,327,400	1,655,400
% Change	-1%	0%	0%	5%	4%

SOURCES: ABAG, 2002; ABAG, 2004.

By 2030, both sets of projections anticipate that the population of the Bay Area will exceed 8.7 million, or about 1.6 million more than in 2005. The projections for that year are also within 0.5 percent of each other.

Projected Growth in the Four Water System Counties

Table E.3.21 focuses the comparison of employment anticipated in *Projections 2003* and *Projection 2005* on the four counties in which the SFPUC system provides water. (The four counties are considered here in their entirety; the following subsection considers the portion of the four-county area within the service area of the SFPUC and its wholesale customers.) This comparison indicates a downward adjustment of the job base in 2005 by about 345,000 jobs, or 12 percent (compared to a downward adjustment of 332,000, or 9 percent, for the nine-county area). This adjustment provides further indication that most of the Bay Area job losses early in this decade were in these four counties.

TABLE E.3.21
ABAG PROJECTIONS 2003 AND PROJECTIONS 2005:
EMPLOYMENT PROJECTIONS FOR THE FOCUSED FOUR-COUNTY AREA

Source of Projection	Jobs in 2005	Jobs in 2025	Jobs in 2030	New Jobs, 2005-2025	New Jobs, 2005-2030
<i>Projections 2003</i>	2,908,370	3,739,920	3,911,320	831,550	1,002,950
<i>Projections 2005</i>	2,563,600	3,516,890	3,765,020	953,290	1,201,420
% Change	-12%	-6%	-4%	15%	20%

SOURCES: ABAG, 2002; ABAG, 2004.

Table E.3.21 shows that *Projections 2005* anticipates that the four-county area will gain more employment between 2005 and 2025, and between 2005 and 2030, than did *Projections 2003*. The total numbers of jobs projected in 2025 and 2030 are, however, smaller in *Projections 2005*, as the expected growth in employment is insufficient to compensate for the reduction in 2005 employment (based on more recent, and, presumably, more accurate, information about current employment) incorporated into the forecasts.

Table E.3.22 provides the comparison of *Projections 2003* and *Projections 2005* in the four counties for population projections. This table also shows a small downward adjustment in the estimate for 2005 compared to *Projections 2003*; however, this adjustment is minor (about one percent of total population in the four-county area). *Projections 2005* anticipates more population growth in the four-county area than does *Projections 2003*, and a similar total population projected in the horizon years of 2025 and 2030 (within 0.5 percent of the total forecast in *Projections 2003*).

Projected Growth in the Area Served by SFPUC Water Customers

Employment Growth

Employment growth anticipated in the area served by SFPUC water customers by *Projections 2003* and *Projections 2005* is compared in **Table E.3.23**. This table shows that employment growth in three of the four counties is expected to follow the pattern observed in the nine-county area: *Projections 2005* anticipates greater employment growth between 2005 and 2025, and between 2005 and 2030, than does *Projections 2003*, but, because of the lower estimate of

TABLE E.3.22
ABAG PROJECTIONS 2003 AND PROJECTIONS 2005:
POPULATION PROJECTIONS FOR THE FOCUSED FOUR-COUNTY AREA

Source of Projection	Population in 2005	Population in 2025	Population in 2030	Added Population, 2005-2025	Added Population, 2005-2030
<i>Projections 2003</i>	4,855,400	5,695,800	5,943,500	840,400	1,088,100
<i>Projections 2005</i>	4,788,400	5,681,700	5,924,700	893,300	1,136,300
% Change	-1%	0%	0%	6%	4%

SOURCES: ABAG, 2002; ABAG, 2004.

TABLE E.3.23
ABAG PROJECTIONS 2003 AND PROJECTIONS 2005:
EMPLOYMENT PROJECTIONS FOR THE AREA SERVED BY SFPUC WATER CUSTOMERS
(WHOLESALE AND RETAIL)^a

Area	Source of Projection	Jobs in 2005	Jobs in 2025	Jobs in 2030	Change, 2005-2025		Change, 2005-2030	
					Number	Percent	Number	Percent
Alameda County ^a	Proj 2003	248,720	325,440	341,510	76,720	30.8%	92,790	37.3%
	Proj 2005	212,560	308,120	329,800	95,560	45.0%	117,240	58.2%
Santa Clara County	Proj 2003	499,410	608,030	624,370	108,620	21.7%	124,960	25.0%
	Proj 2005	393,700	512,830	544,610	119,130	30.3%	150,910	38.3%
San Mateo County	Proj 2003	362,460	464,870	483,850	102,410	28.3%	121,390	33.5%
	Proj 2005	309,470	435,600	469,900	126,130	40.8%	160,430	51.8%
Total Wholesale Customers	Proj 2003	1,110,590	1,398,340	1,449,730	287,750	25.9%	339,140	30.5%
	Proj 2005	915,730	1,256,550	1,344,310	340,820	37.2%	428,580	46.8%
San Francisco	Proj 2003	635,480	786,020	815,680	150,540	23.7%	180,200	28.4%
	Proj 2005	575,800	776,100	829,090	200,300	34.8%	253,290	44.0%
Total Customers	Proj 2003	1,746,070	2,184,360	2,265,410	438,290	25.1%	519,340	29.7%
	Proj 2005	1,491,530	2,032,650	2,173,400	541,120	36.3%	681,870	45.7%

^a Includes only those portions of each county served by SFPUC wholesale water customers or served directly by the SFPUC (San Francisco County).

SOURCES: ABAG, 2002; ABAG, 2004.

employment in 2005, *Projections 2005* forecasts less *total* employment in both horizon years than does *Projections 2003*. In San Francisco, however, *Projections 2005* forecasts stronger employment *growth* through 2030, and this change lifts the *total* employment in that year higher than that projected for San Francisco in *Projections 2003*.

Table E.3.24 provides detail about the employment projections for the ABAG cities that are served by one or more SFPUC water customers. Because of format constraints, the projections for 2025 are omitted; only estimates for 2005 and projections for 2030 are shown.

TABLE E.3.24
ABAG PROJECTIONS 2003 AND PROJECTIONS 2005: EMPLOYMENT PROJECTIONS FOR CITIES WITHIN
THE AREA SERVED BY SFPUC WATER CUSTOMERS (WHOLESALE AND RETAIL)^a

ABAG Jurisdiction	Projections 2003				Projections 2005			
	2005	2030	Change, 2005-2030		2005	2030	Change, 2005-2030	
			#	%			#	%
Alameda County								
Fremont ^b	115,700	163,690	47,990	41.5%	96,530	160,410	63,880	66.2%
Hayward	92,060	112,560	20,500	22.3%	74,930	100,430	25,500	34.0%
Newark ^b	19,480	23,220	3,740	19.2%	21,180	24,960	3,780	17.8%
Union City ^b	21,480	42,040	20,560	95.7%	19,920	44,000	24,080	120.9%
Santa Clara County								
Milpitas	49,770	70,490	20,720	41.6%	50,980	68,940	17,960	35.2%
Mountain View	82,410	104,750	22,340	27.1%	57,130	81,110	23,980	42.0%
Los Altos Hills ^c	2,720	2,790	70	2.6%	1,650	1,780	130	7.9%
Palo Alto ^d	110,620	121,130	10,510	9.5%	99,350	117,090	17,740	17.9%
Santa Clara	135,140	171,520	36,380	26.9%	110,030	152,670	42,640	38.8%
Sunnyvale	118,750	153,690	34,940	29.4%	74,560	123,020	48,460	65.0%
San Mateo County								
Atherton ^f	3,470	4,570	1,100	31.7%	2,530	3,710	1,180	46.6%
Belmont ^g	14,410	19,860	5,450	37.8%	8,190	14,070	5,880	71.8%
Brisbane	8,130	19,910	11,780	144.9%	8,200	20,420	12,220	149.0%
Burlingame	28,640	33,870	5,230	18.3%	22,850	33,370	10,520	46.0%
Colma ^h	2,530	3,930	1,400	55.3%	3,180	4,570	1,390	43.7%
Daly City	25,230	37,230	12,000	47.6%	17,980	29,830	11,850	65.9%
East Palo Alto	3,450	7,000	3,550	102.9%	2,130	6,110	3,980	186.9%
Foster City ⁱ	20,330	24,520	4,190	20.6%	14,190	21,110	6,920	48.8%
Half Moon Bay ^j	5,010	5,820	810	16.2%	7,540	8,490	950	12.6%
Hillsborough	1,210	1,280	70	5.8%	1,660	2,030	370	22.3%
Menlo Park ^k	30,310	37,670	7,360	24.3%	28,750	43,700	14,950	52.0%
Millbrae	6,060	8,930	2,870	47.4%	6,860	9,960	3,100	45.2%
Pacifica ^l	4,770	6,280	1,510	31.7%	6,170	7,670	1,500	24.3%
Portola Valley ^f	1,130	1,140	10	0.9%	2,560	2,720	160	6.3%
Redwood City ^m	56,740	71,890	15,150	26.7%	55,040	76,550	21,510	39.1%
San Bruno	16,390	28,400	12,010	73.3%	13,910	28,400	14,490	104.2%
San Carlos ⁿ	17,430	23,270	5,840	33.5%	16,590	26,930	10,340	62.3%
San Mateo ⁿ	61,600	81,490	19,890	32.3%	45,700	70,780	25,080	54.9%
South San Francisco ^o	53,570	64,730	11,160	20.8%	42,170	56,080	13,910	33.0%
Woodside ^f	2,050	2,060	10	0.5%	3,270	3,400	130	4.0%
Total Wholesale Customers	1,110,590	1,449,730	339,140	30.5%	915,730	1,344,310	428,580	46.8%
San Francisco	635,480	815,680	180,200	28.4%	575,800	829,090	253,290	44.0%
Total Area Served	1,746,070	2,265,410	519,340	29.7%	1,491,530	2,173,400	681,870	45.7%

^a No separate projections for Guadalupe MID (part of Brisbane), Skyline County Water District (serves part of Woodside), Westborough Water District (serves part of South San Francisco), Stanford University (included by ABAG in the projections for Palo Alto), or San Jose (serves only a small portion of the city). Totals differ slightly from those shown in Table E.3.23 because the ABAG jurisdictions for which employment projections are reported in this table differ in geography from the water customer areas (see Tables E.3.A.1 and E.3.A.2).

^b Fremont, Newark, and Union City are served by the Alameda County Water District.

^c Los Altos Hills is served by the Purissima Hills Water District.

^d Palo Alto projections include Stanford University

^e This footnote deleted.

^f Atherton, Portola Valley, and part of Woodside are served by CWS - Bear Gulch District. All of Portola Valley (including the portion previously served by Los Trancos County Water District, which is now a part of CWS) and Woodside are included in these projections.

^g Belmont is served by the Mid-Peninsula Water District, which also serves parts of San Carlos.

^h Colma is served by CWS - South San Francisco District

ⁱ Foster City is served by Estero MID, which also serves a portion of San Mateo. The projections for San Mateo are included in the projections for CWS - Mid-Peninsula District.

^j Half Moon Bay and the adjacent unincorporated area (included in these figures) are served by the Coastside County Water District.

^k The City of Menlo Park Water Agency serves only a portion of the City of Menlo Park (less than half of the city's population). These figures are for the entire city.

^l Pacifica is served by the North Coast County Water District.

^m Redwood City Water Agency also serves portions of San Carlos and Woodside.

ⁿ Parts of San Carlos and San Mateo are served by CWS - Mid Peninsula District. Both cities are included here in their entirety.

^o South San Francisco is served by CWS - South San Francisco District + Westborough Water District.

SOURCES: ABAG, 2002; ABAG, 2004.

Table E.3.25 sorts the individual jurisdictions within the service area (a single water customer may comprise several jurisdictions) according to whether greater employment in 2030 is expected by *Projections 2005* or *Projections 2003*. In this case, 8 of the 31 jurisdictions are expected to have about the same total employment in 2030 (within 5 percent) in both sets of projections, 11 of the jurisdictions are expected by *Projections 2005* to have more employment in 2030, and 12 are expected to have less.

TABLE E.3.25
ABAG PROJECTIONS 2003 AND PROJECTIONS 2005: TOTAL JOBS IN 2030

<i>Projections 2005 Forecast is Greater than Projections 2003 Forecast</i>			<i>Projections 2005 Forecast is About the Same as Projections 2003 Forecast^a</i>			<i>Projections 2005 Forecast is Less than Projections 2003 Forecast</i>		
Jurisdiction	Jobs in 2030 ^b	Proj. 2003 Jobs as % of Proj. 2005 Jobs	Jurisdiction	Jobs in 2030 ^b	Proj. 2003 Jobs as % of Proj. 2005 Jobs	Jurisdiction	Jobs in 2030 ^b	Proj. 2003 Jobs as % of Proj. 2005 Jobs
Alameda County								
Newark	24,960	93.0%	Union City	44,000	95.5%	Hayward	100,430	112.1%
			Fremont	160,410	102.0%			
Santa Clara County^c								
			Milpitas	68,940	102.2%	Santa Clara	152,670	112.3%
			Palo Alto	117,090	103.5%	Sunnyvale	123,020	124.9%
						Mountain View	81,110	129.1%
						Los Altos Hills	1,780	156.7%
San Mateo County								
Portola Valley	2,720	41.9%	Brisbane	20,420	97.5%	East Palo Alto	6,110	114.6%
	8,490	45.9%						
Half Moon Bay ^d			San Bruno	28,400	100.0%	San Mateo	70,780	115.1%
Woodside	3,400	60.6%						
			Burlingame	33,370	101.5%	South San Francisco	56,080	115.4%
Hillsborough	2,030	63.1%				Foster City	21,110	116.2%
Pacifica	7,670	81.9%				Atherton	3,710	123.2%
						Daly City	29,830	124.8%
Colma	4,570	86.0%				Belmont	14,070	141.2%
Menlo Park	43,700	86.2%						
San Carlos	26,930	86.4%						
Millbrae	9,960	89.7%						
Redwood City	76,550	93.9%						
San Francisco County								
			San Francisco	829,090	98.4%			

^a Number of jobs in 2030 in *Projections 2005* is within five percent of the number of jobs in 2030 in *Projections 2003*.

^b Number of jobs in 2030 forecast in *Projections 2005*.

^c Stanford University is included within the City of Palo Alto in the ABAG projections. Only a small portion of the City of San Jose is within the district that obtains water from the SFPUC. It is considered misleading to include figures for all of San Jose in this analysis.

^d Half Moon Bay plus Half Moon Bay (unincorporated).

SOURCES: ABAG, 2002; ABAG, 2004.

For comparison, as shown in Table E.3.13, *Projections 2003* expected 16 jurisdictions to have about the same employment in 2025 as did *Projections 2002*; 8 were expected to have more, and 7 were expected to have less. This comparison with the previous projections suggests that, although employment estimates for 2005 have again been readjusted downward in *Projections 2005*, expectations of future employment growth are now stronger than they were previously.

Table E.3.26 sorts the individual jurisdictions within the service area according to whether greater *increases* in employment between 2005 and 2030 are expected by *Projections 2005* or *Projections 2003*. Supporting the conclusions of the preceding paragraph, this table shows that *Projections 2005* forecasts greater employment growth than does *Projections 2003* for 25 of the 31 areas, about the same amount of growth for 5 areas, and less growth for only 1 area.

TABLE E.3.26
ABAG PROJECTIONS 2003 AND PROJECTIONS 2005: CHANGE IN NUMBER OF JOBS, 2005-2030

<i>Projections 2005</i> Forecast is Greater than <i>Projections 2003</i> Forecast			<i>Projections 2005</i> Forecast is About the Same as <i>Projections 2003</i> Forecast ^a			<i>Projections 2005</i> Forecast is Less than <i>Projections 2003</i> Forecast		
Jurisdiction	Change in Jobs, 2005- 2030 ^b	Proj. 2003 Change in Jobs as % of Proj. 2005 Change in Jobs	Jurisdiction	Change in Jobs, 2005- 2030 ^b	Proj. 2003 Change in Jobs as % of Proj. 2005 Change in Jobs	Jurisdiction	Change in Jobs, 2005- 2030 ^b	Proj. 2003 Change in Jobs as % of Proj. 2005 Change in Jobs
Alameda County								
Fremont	63,880	75.1%	Newark	3,780	98.9%			
Hayward	25,500	80.4%						
Union City	24,080	85.4%						
Santa Clara County^c								
Los Altos Hills	130	53.8%				Milpitas	17,960	115.4%
Palo Alto	17,740	59.2%						
Sunnyvale	48,460	72.1%						
Santa Clara	42,640	85.3%						
Mountain View	23,980	93.2%						
San Mateo County								
Portola Valley	160	6.3%	Brisbane	12,220	96.4%			
Woodside	130	7.7%	Pacifica	1,500	100.7%			
Hillsborough	370	18.9%	Colma	1,390	100.7%			
Menlo Park	14,950	49.2%	Daly City	11,850	101.3%			
Burlingame	10,520	49.7%						
San Carlos	10,340	56.5%						
Foster City	6,920	60.5%						
Redwood City	21,510	70.4%						
San Mateo	25,080	79.3%						
South San Francisco	13,910	80.2%						
Half Moon Bay ^d	950	85.3%						
San Bruno	14,490	82.9%						
East Palo Alto	3,980	89.2%						
Millbrae	3,100	92.6%						
Belmont	5,880	92.7%						
Atherton	1,180	93.2%						
San Francisco County								
San Francisco	253,290	71.1%						

^a Number of jobs added between 2005 and 2030 in *Projections 2005* is within five percent of the number of jobs added between 2005 and 2030 in *Projections 2003*.

^b Number of jobs added between 2005 and 2030 forecast in *Projections 2005*.

^c Stanford University is included within the City of Palo Alto in the ABAG projections. Only a small portion of the City of San Jose is within the district that obtains water from the SFPUC. It is considered misleading to include figures for all of San Jose in this analysis.

^d Half Moon Bay plus Half Moon Bay (unincorporated).

SOURCES: ABAG, 2002; ABAG, 2004.

Population Growth

Population growth forecasted in *Projections 2003* and *Projections 2005* for the portion of the four-county area served by SFPUC water is summarized in **Table E.3.27**. This table shows that *Projections 2005* anticipates greater *total* population in three of the counties (Alameda, Santa Clara, and San Francisco) in 2025, and greater population in all four in 2030, than does *Projections 2003*.

TABLE E.3.27
ABAG PROJECTIONS 2003 AND PROJECTIONS 2005:
POPULATION PROJECTIONS FOR THE AREA SERVED BY SFPUC WATER CUSTOMERS
(WHOLESALE AND RETAIL)^a

Area	Source of Projection	Population in 2005	Population in 2025	Population in 2030	Change, 2005-2025		Change, 2005-2030	
					Number	Percent	Number	Percent
Alameda County	Proj 2003	481,100	552,500	575,700	71,400	14.8%	94,600	19.7%
	Proj 2005	473,900	552,700	576,200	78,800	16.6%	102,300	21.6%
Santa Clara County	Proj 2003	472,700	560,800	579,200	88,100	18.6%	106,500	22.5%
	Proj 2005	463,100	561,700	585,100	98,600	21.3%	122,000	26.3%
San Mateo County	Proj 2003	726,990	826,710	838,230	99,720	13.7%	111,240	15.3%
	Proj 2005	716,100	818,800	840,900	102,700	14.3%	124,800	17.4%
Total Wholesale Customers	Proj 2003	1,680,790	1,940,010	1,993,130	259,220	15.4%	312,340	18.6%
	Proj 2005	1,653,100	1,933,200	2,002,200	280,100	16.9%	349,100	21.1%
San Francisco	Proj 2003	798,600	889,800	935,100	91,200	11.4%	136,500	17.1%
	Proj 2005	798,000	890,400	924,600	92,400	11.6%	126,600	15.9%
Total Customers	Proj 2003	2,479,390	2,829,810	2,928,230	350,420	14.1%	448,840	18.1%
	Proj 2005	2,451,100	2,823,600	2,926,800	372,500	15.2%	475,700	19.4%

^a Includes only those portions of each county served by SFPUC wholesale water customers or served directly by the SFPUC (San Francisco County).

SOURCES: ABAG, 2002, ABAG, 2004.

The table also shows that *Projections 2005* forecasts greater population *growth* in every county than does *Projection 2003*, during the 20-year period from 2005 through 2025, and greater *growth* in three of the four counties (excluding San Francisco) during the 25-year period from 2005 through 2030.

Table E.3.28 provides detail about the population projections for the ABAG cities that are served by one or more SFPUC water customers. Because of format constraints, the projections for 2025 are omitted; only estimates for 2005 and projections for 2030 are shown.

Table E.3.29 sorts the jurisdictions according to whether *Projections 2005* anticipates greater total population in 2030 than does *Projections 2003*. This table shows that, in most jurisdictions (28 of the 31), the projections are about the same. *Projections 2005* expects one jurisdiction (Millbrae) to have more residents in 2030, and two (Half Moon Bay and Colma) to have fewer.

TABLE E.3.28
ABAG PROJECTIONS 2003 AND PROJECTIONS 2005:
POPULATION PROJECTIONS FOR CITIES WITHIN THE AREA SERVED BY SFPUC WATER CUSTOMERS
(WHOLESALE AND RETAIL)^a

ABAG Jurisdiction	Projections 2003				Projections 2005			
	2005	2030	Change, 2005-2030		2005	2030	Change, 2005-2030	
			#	%			#	%
Alameda County								
Fremont ^b	214,600	257,100	42,500	19.8%	211,100	257,200	46,100	21.8%
Hayward ^d	147,600	169,800	22,200	15.0%	147,000	171,500	24,500	16.7%
Newark ^b	45,300	53,500	8,200	18.1%	44,400	53,400	9,000	20.3%
Union City ^b	73,600	95,300	21,700	29.5%	71,400	94,100	22,700	31.8%
Santa Clara County								
Milpitas	68,700	91,500	22,800	33.2%	65,500	91,400	25,900	39.5%
Mountain View	73,200	87,700	14,500	19.8%	72,000	89,600	17,600	24.4%
Los Altos Hills ^c	9,800	10,300	500	5.1%	9,900	10,700	800	8.1%
Palo Alto ^d	74,500	89,000	14,500	19.5%	74,000	92,200	18,200	24.6%
Santa Clara	108,600	138,700	30,100	27.7%	108,700	142,100	33,400	30.7%
Sunnyvale	137,900	162,000	24,100	17.5%	133,000	159,100	26,100	19.6%
San Mateo County								
Atherton ^f	7,400	8,100	700	9.5%	7,300	8,200	900	12.3%
Belmont ^g	25,800	28,900	3,100	12.0%	25,500	28,800	3,300	12.9%
Brisbane	3,770	5,390	1,620	43.0%	3,750	5,240	1,490	39.7%
Burlingame	30,000	32,500	2,500	8.3%	29,400	31,900	2,500	8.5%
Colma ^h	1,320	2,040	720	54.5%	1,350	1,860	510	37.8%
Daly City	112,000	126,900	14,900	13.3%	109,400	127,200	17,800	16.3%
East Palo Alto	32,200	44,600	12,400	38.5%	32,700	43,600	10,900	33.3%
Foster City ⁱ	30,100	32,100	2,000	6.6%	29,800	32,500	2,700	9.1%
Half Moon Bay ^j	24,200	28,000	3,800	15.7%	23,900	27,100	3,200	13.4%
Hillsborough	11,100	11,900	800	7.2%	11,000	11,800	800	7.3%
Menlo Park ^k	36,300	41,800	5,500	15.2%	35,300	41,100	5,800	16.4%
Millbrae	21,500	22,700	1,200	5.6%	21,200	24,500	3,300	15.6%
Pacifica ^l	40,200	42,900	2,700	6.7%	38,600	42,200	3,600	9.3%
Portola Valley ^f	7,100	7,800	700	9.9%	7,100	7,800	700	9.9%
Redwood City ^m	102,100	121,400	19,300	18.9%	101,700	122,300	20,600	20.3%
San Bruno	40,800	48,500	7,700	18.9%	41,700	50,700	9,000	21.6%
San Carlos ⁿ	29,800	34,100	4,300	14.4%	29,300	35,200	5,900	20.1%
San Mateo ⁿ	102,100	118,000	15,900	15.6%	99,300	119,800	20,500	20.6%
South San Francisco ^o	62,500	73,400	10,900	17.4%	61,200	71,800	10,600	17.3%
Woodside ^f	6,700	7,200	500	7.5%	6,600	7,300	700	10.6%
Total Wholesale Customers	1,680,790	1,993,130	312,340	18.6%	1,653,100	2,002,200	349,100	21.1%
San Francisco	798,600	935,100	136,500	17.1%	798,000	924,600	126,600	15.9%
Total Area Served	2,479,390	2,928,230	448,840	18.1%	2,451,100	2,926,800	475,700	19.4%

^a No separate projections for Guadalupe MID (part of Brisbane), Skyline County Water District (serves part of Woodside), Westborough Water District (serves part of South San Francisco), Stanford University (included by ABAG in the projections for Palo Alto), or San Jose (serves only a small portion of the city). Totals differ slightly from those shown in Table E.3.27 because the ABAG jurisdictions for which employment projections are reported in this table differ in geography from the water customer areas (see Tables E.3.A.1 and E.3.A.2).

^b Fremont, Newark, and Union City are served by the Alameda County Water District.

^c Los Altos Hills is served by the Purissima Hills Water District.

^d Palo Alto projections include Stanford University

^e This footnote deleted.

^f Atherton, Portola Valley, and part of Woodside are served by CWS - Bear Gulch District. All of Portola Valley (including the portion previously served by Los Trancos County Water District, which is now a part of CWS) and Woodside are included in these projections.

^g Belmont is served by the Mid-Peninsula Water District, which also serves parts of San Carlos.

^h Colma is served by CWS - South San Francisco District

ⁱ Foster City is served by Estero MID, which also serves a portion of San Mateo. The projections for San Mateo are included in the projections for CWS - Mid-Peninsula District.

^j Half Moon Bay and the adjacent unincorporated area (included in these figures) are served by the Coastside County Water District.

^k The City of Menlo Park Water Agency serves only a portion of the City of Menlo Park (less than half of the city's population). These figures are for the entire city.

^l Pacifica is served by the North Coast County Water District.

^m Redwood City Water Agency also serves portions of San Carlos and Woodside.

ⁿ Parts of San Carlos and San Mateo are served by CWS - Mid Peninsula District. Both cities are included here in their entirety.

^o South San Francisco is served by CWS - South San Francisco District + Westborough Water District.

SOURCES: ABAG, 2002; ABAG, 2004.

TABLE E.3.29
ABAG PROJECTIONS 2003 AND PROJECTIONS 2005: TOTAL POPULATION IN 2030

<i>Projections 2005 Forecast is Greater than Projections 2003 Forecast</i>			<i>Projections 2005 Forecast is About the Same as Projections 2003 Forecast^a</i>			<i>Projections 2005 Forecast is Less than Projections 2003 Forecast</i>		
Jurisdiction	Population in 2030 ^b	Proj. 2003 Pop. as % of Proj. 2005 Pop.	Jurisdiction	Population in 2030 ^b	Proj. 2003 Pop. as % of Proj. 2005 Pop.	Jurisdiction	Population in 2030 ^b	Proj. 2003 Pop. as % of Proj. 2005 Pop.
Alameda County			Hayward	171,500	99.0%			
			Fremont	257,200	100.0%			
			Newark	53,400	100.2%			
			Union City	94,100	101.3%			
Santa Clara County^c			Los Altos Hills	10,700	96.3%			
			Palo Alto	92,200	96.5%			
			Santa Clara	142,100	97.6%			
			Mountain View	89,600	97.9%			
			Milpitas	91,400	100.1%			
			Sunnyvale	159,100	101.8%			
San Mateo County								
Millbrae	24,500	92.7%	San Bruno	50,700	95.7%	Half Moon Bay ^d	27,100	103.3%
			San Carlos	35,200	96.9%	Colma	1,860	109.7%
			San Mateo	119,800	98.5%			
			Woodside	7,300	98.6%			
			Foster City	32,500	98.8%			
			Atherton	8,200	98.8%			
			Redwood City	122,300	99.3%			
			Daly City	127,200	99.8%			
			Portola Valley	7,800	100.0%			
			Belmont	28,800	100.3%			
			Hillsborough	11,800	100.8%			
			Pacifica	42,200	101.7%			
			Menlo Park	41,100	101.7%			
			Burlingame	31,900	101.9%			
			South San Francisco	71,800	102.2%			
			East Palo Alto	43,600	102.3%			
			Brisbane	5,240	102.9%			
San Francisco County			San Francisco	924,600	101.1%			

^a Population in 2030 in *Projections 2005* is within five percent of the population in 2030 in *Projections 2003*.

^b Population in 2030 forecast in *Projections 2005*.

^c Stanford University is included within the City of Palo Alto in the ABAG projections. Only a small portion of the City of San Jose is within the district that obtains water from the SFPUC. It is considered misleading to include figures for all of San Jose in this analysis.

^d Half Moon Bay plus Half Moon Bay (unincorporated).

SOURCES: ABAG, 2002; ABAG, 2004.

Table E.3.30 sorts the jurisdictions according to whether *Projections 2005* anticipates more population growth between 2005 and 2030 than does *Projections 2003*. As shown, 5 jurisdictions are expected to gain about the same number of new residents (within 5 percent), 21 are expected to gain more, and 5 are expected to gain fewer new residents, according to *Projections 2005*.

TABLE E.3.30
ABAG PROJECTIONS 2003 AND PROJECTIONS 2005:
CHANGE IN POPULATION, 2005-2030

<i>Projections 2005 Forecast is Greater than Projections 2003 Forecast</i>			<i>Projections 2005 Forecast is About the Same as Projections 2003 Forecast^a</i>			<i>Projections 2005 Forecast is Less than Projections 2003 Forecast</i>		
Jurisdiction	Change in Population, 2005- 2030 ^b	Proj. 2003 Change in Pop. as % of Proj. 2005 Change in Pop.	Jurisdiction	Change in Population, 2005- 2030 ^b	Proj. 2003 Change in Pop. as % of Proj. 2005 Change in Pop.	Jurisdiction	Change in Population, 2005- 2030 ^b	Proj. 2003 Change in Pop. as % of Proj. 2005 Change in Pop.
Alameda County								
Hayward	24,500	90.6%	Union City	22,700	95.6%			
Newark	9,000	91.1%						
Fremont	46,100	92.2%						
Santa Clara County^c								
Los Altos Hills	800	62.5%						
Palo Alto	18,200	79.7%						
Mountain View	17,600	82.4%						
Milpitas	25,900	88.0%						
Santa Clara	33,400	90.1%						
Sunnyvale	26,100	92.3%						
San Mateo County								
Millbrae	3,300	36.4%	Burlingame	2,500	100.0%	Brisbane	1,490	108.7%
Woodside	700	71.4%	Portola Valley	700	100.0%	East Palo Alto	10,900	113.8%
San Carlos	5,900	72.9%	Hillsborough	800	100.0%	Half Moon Bay ^d	3,200	118.8%
Foster City	2,700	74.1%	South San Francisco	10,600	102.8%	Colma	510	141.2%
Pacifica	3,600	75.0%						
San Mateo	20,500	77.6%						
Atherton	900	77.8%						
Daly City	17,800	83.7%						
San Bruno	9,000	85.6%						
Redwood City	20,600	93.7%						
Belmont	3,300	93.9%						
Menlo Park	5,800	94.8%						
San Francisco County								
						San Francisco	126,600	107.8%

^a Population added between 2005 and 2030 in *Projections 2005* is within five percent of the population added between 2005 and 2030 in *Projections 2003*.

^b Population added between 2005 and 2030 in *Projections 2005*.

^c Stanford University is included within the City of Palo Alto in the ABAG projections. Only a small portion of the City of San Jose is within the district that obtains water from the SFPUC. It is considered misleading to include figures for all of San Jose in this analysis.

^d Half Moon Bay plus Half Moon Bay (unincorporated).

SOURCES: ABAG, 2002; ABAG, 2004.

Conclusions about ABAG Growth Projections

The evolution of ABAG forecasts of employment and population growth in the Bay Area paints a picture of changed expectations of growth in the nine-county Bay Area, the four-county area in which SFPUC water customers are located, and the area served by SFPUC water customers, in generally consistent ways.

- Expectations of future *total* employment increased between *Projections 2002* and *Projections 2003*, and then decreased between *Projections 2003* and *Projections 2005*.

The reduction shown in *Projections 2005* results primarily from ongoing adjustments to the estimate of employment in 2005. Projections of *growth* between 2005 and 2025, and between 2005 and 2030, have been increased in successive sets of forecasts, but these increases do not completely offset the cumulative reductions in beginning year (2005) employment that have been made as the impacts of the dot com bust in the early part of this decade have become clearer; as a result, *total* employment expected at the end of the forecast period is lower in the later projections.

The successive sets of projections show that *Projections 2003* anticipated greater employment in 2025 than *Projections 2002*, but *Projections 2005* anticipate less employment in 2025 than either *Projections 2002* or *Projections 2003*, and less employment in 2030 than *Projections 2003* in all of the geographic areas considered. This summary comparison is shown in **Table E.3.31**.

TABLE E.3.31
ABAG PROJECTIONS OF EMPLOYMENT IN 2025: SUMMARY COMPARISON

Area	Year	<i>Projections 2002</i>	<i>Projections 2003</i>	<i>Projections 2005</i>
Nine-County Bay Area	2025	4,932,590	4,982,800	4,788,330
	2030		5,226,400	5,120,600
Four-County Area	2025	3,682,510	3,739,920	3,516,890
	2030		3,911,320	3,765,020
SFPUC Water Customers	2025	2,169,600	2,184,360	2,032,650
	2030		2,265,410	2,173,400

SOURCES: Tables E.3.7, E.3.9, E.3.11, E.3.19, E.3.21, E.3.23.

- Expectations of future population increased between *Projections 2002* and *Projections 2003*, and then decreased slightly between *Projections 2003* and *Projections 2005*. The future population anticipated by *Projections 2005* is, however, greater than the population anticipated by *Projections 2002*.

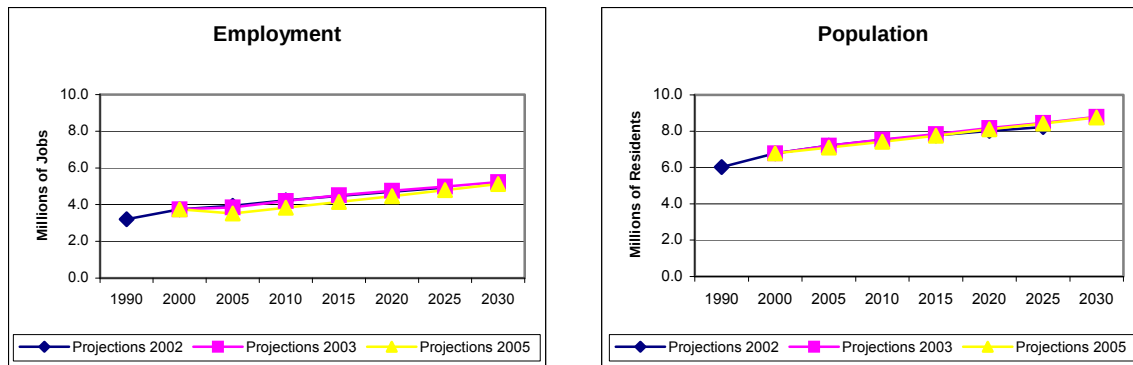
The increases result primarily from the smart growth assumptions that were initiated with *Projections 2003*. These assumptions *rearrange* population growth (but not employment growth) within the Bay Area, compared to assumed population growth trends in previous projections sets, locating it generally in urban areas that have transit stations and/or transit corridors, and *add* growth based on the assumption that barriers to infill development will be removed and increasing government assistance for housing production will be provided (ABAG 2002). The summary of population comparisons is shown in **Table E.3.32**.

TABLE E.3.32
ABAG PROJECTIONS OF POPULATION IN 2025: SUMMARY COMPARISON

Area	Year	Projections 2002	Projections 2003	Projections 2005
Nine-County Bay Area	2025	8,223,740	8,457,800	8,419,100
	2030		8,780,300	8,747,100
Four-County Area	2025	5,406,900	5,695,800	5,681,700
	2030		5,943,500	5,924,700
SFPUC Water Customers	2025	2,693,000	2,829,810	2,823,600
	2030		2,928,230	2,926,800

SOURCES: Tables E.3.8, E.3.10, E.3.17, E.3.20, E.3.22, E.3.28.

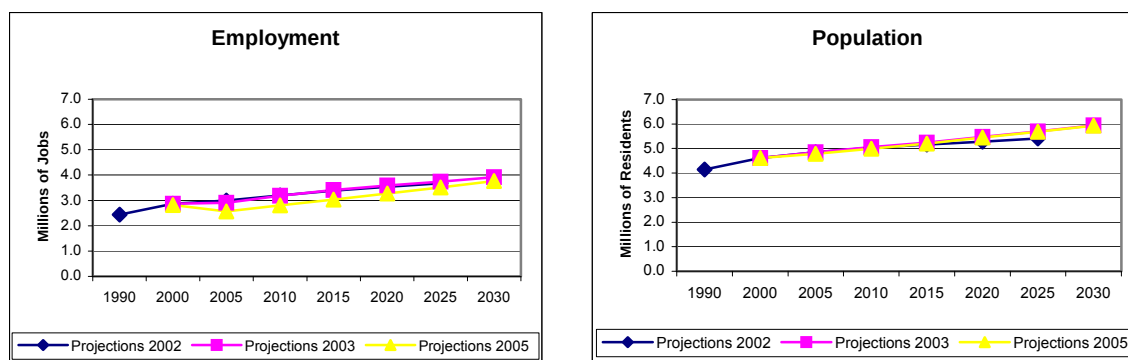
Figures E.3.1 and E.3.2 provide a summary comparison of the three projections sets for the nine-county bay area and the four counties that are partially served by the SFPUC and its wholesale customers. The figures illustrate that, notwithstanding the changes incorporated into *Projections 2003* and *Projections 2005*, the three sets of projections are similar both for the nine-county Bay Area (Figure E.3.1) and for the four-county area that is partially served by SFPUC water⁶ (Figure E.3.2). The employment graphs reflect the lower estimates of 2005 employment presented in *Projections 2003* and *Projections 2005*, and the more rapid growth expected between 2005 and 2030 that would make up for most of the job losses in the early part of this decade.



SFPUC Water System Improvement Program ■ 203287

Figure E.3.1
ABAG Projections of Employment and Population in the Nine-County Bay Area

⁶ SFPUC water serves all of San Francisco County and portions of Alameda, Santa Clara, and San Mateo Counties.



SFPUC Water System Improvement Program ■ 203287

Figure E.3.2

ABAG Projections of Employment and Population in the Four County Area (Partially) Served by SFPUC Water

Other Growth Projections

The ABAG projections reviewed above are the only comprehensive set of employment and population projections that cover the area served by SFPUC water. There are, however, other planning documents that include projections of population and/or jobs, and these documents provide additional context for considering the San Francisco and wholesale customer demand projections. Most of the SFPUC wholesale customers, or the cities they represent, have adopted urban water management plans, which include projections to 2030. Cities and counties served by SFPUC water have general plans that typically include projections of employment and population, and these projections provide indications of whether the demand forecasts are consistent with or more ambitious than the adopted planning policies. **Table E.3.33** compares projections of employment from these local sources to employment anticipated by ABAG's *Projections 2005*.

For each source, the table shows the expected employment in the most distant year for which the general plan has a forecast. In some cases, the projections from different sources are similar; in others, they diverge. Reasons for differences between sources may include:

- **Age of the projection source.** *Projections 2005* was prepared during 2004. Some of the general plans were prepared 10 or more years ago. The water customers updated their urban water management plans in 2005. Some of the UWMPs utilize more recent ABAG projections than were available when the water demand studies were undertaken.
- **Methodology.** Some local projections may be based more on the development capacity of the land available for development (e.g., as designated in the general plan) than on demand factors such as economic growth and comparative advantage of a location in the community.
- **Area covered.** General plans typically cover a city's "planning area," which may be larger than its corporate limits or sphere of influence in cases where there is unincorporated land adjacent to the city limits. Because UWMPs are produced by the water customers for their service areas,

TABLE E.3.33
COMPARISON OF GENERAL PLAN EMPLOYMENT PROJECTIONS TO
ABAG PROJECTIONS 2005, UWMPS, AND WATER CUSTOMER DEMAND PROJECTIONS
FOR GENERAL PLAN PROJECTION YEAR

Employment in General Plan Employment Year ^a Shown in:				
	General Plan ^b	UWMP	SFPUC Water Customer Projection ^c	Projections 2005
Cities with GP Employment Projections for 2010				
East Palo Alto	5,940	see note d	8,673	6,110
Foster City	18,760	see note d	see note e	15,560
Menlo Park	17,900	see note d	11,057 ^f	31,730
Milpitas	65,200	see note d	60,567	54,340
Mountain View	84,810	see note d	81,848	63,330
Palo Alto	98,500	108,450	108,161	102,190
San Mateo	67,628	see note d	see notes e, g	50,110
Santa Clara	151,280		177,027	152,670
Cities with GP Employment Projections for 2015				
Millbrae	12,006	see note d	7,313	8,190
Cities with GP Employment Projections for 2020				
Atherton	3,840	see note d	see note h	3,380
Colma	2,080	see note d	see note i	4,080
Daly City	34,260	34,000	33,981	29,830
Fremont	130,530	see note d	see note j	96,530
Newark	26,560	see note d	see note j	23,310
San Bruno	19,180		25,770	28,400
San Francisco	745,600	770,500	770,500	776,100
South San Francisco	71,400	see note d	59,466 ^k	51,210
Sunnyvale	152,730	see note d	153,959	101,590
Union City	20,710	see note d	see note j	34,900
Cities with GP Employment Projections for 2025				
Hayward	108,830	see note d	109,296	95,430
Hillsborough	1,360		1,323 ^l	1,970
Cities with GP Employment Projections for Years Prior to 2005 or No Applicable GP: Projections for 2030				
Belmont			22,221	14,070
Brisbane + Guadalupe Valley MID			25,243	20,420
Burlingame			36,160 ^m	33,370
Half Moon Bay			6,795	8,490 ⁿ
Los Altos Hills			see note o	1,780
Pacifica			7,478	7,670
Portola Valley				2,720
Redwood City		69,980	83,678	76,550
San Carlos			see note g	26,930
San Jose			3,353 ^p	
Stanford University				n.a.
Woodside				3,400

n.a. = Not available.

^a Employment shown is for the year of the most distant employment projection available in the general plan or other relevant local document (see note b). For example, employment figures in all columns for cities in the group titled "Cities with GP Employment Projections for 2010" are employment projected for or estimated in 2010.

^b Employment estimates are from each city's general plan (GP) or the general plan's EIR.

^c Estimates for years between 2001 and 2030 are derived by Mundie & Associates, based on linear interpolations of the water customers' projections presented in URS 2004.

^d UWMP does not forecast employment (some, but not all, UWMPs do forecast commercial, industrial, and other types of nonresidential accounts).

^e Estero MID (Foster City and part of San Mateo) projection for 2010 is 26,652.

^f Figure shown is for the portion of Menlo Park (less than half of the city's population) served by the SFPUC wholesale customer, the City of Menlo Park water agency.

^g CWS – Mid-Peninsula District (parts of the cities of San Mateo and San Carlos plus unincorporated areas) projection for 2010 is 86,034.

^h CWS – Bear Gulch District (Atherton, parts of Menlo Park, Portola Valley, and Woodside, plus unincorporated areas) projection for 2020 is 46,093.

TABLE E.3.33 (Continued)
COMPARISON OF GENERAL PLAN EMPLOYMENT PROJECTIONS TO
ABAG PROJECTIONS 2005, UWMPS, AND WATER CUSTOMER DEMAND PROJECTIONS
FOR GENERAL PLAN PROJECTION YEAR

- ⁱ CWS – South San Francisco District (Colma, parts of Daly City and South San Francisco, plus unincorporated areas) plus Westborough Water District projection for 2020 is 59,466.
- ^j Alameda County Water District (cities of Fremont, Newark, and Union City) projection is 151,092 in 2005; 160,853 in 2010, and 197,456 in 2020.
- ^k Figure shown is for CWS – South San Francisco District (Colma, parts of Daly City and South San Francisco, plus unincorporated areas) plus Westborough Water District.
- ^l Figure shown is for Town of Hillsborough water agency, which also serves some unincorporated area.
- ^m Figure shown is for the City of Burlingame water agency, which also serves some unincorporated areas.
- ⁿ Figure shown for *Projections 2005* includes ABAG's unincorporated Half Moon Bay.
- ^o Projection for Purissima Hills Water District (part of Los Altos Hills and some unincorporated areas) is 457.
- ^p Figure shown is for the City of San Jose water agency, which serves only a small part of the City of San Jose.

SOURCES: ABAG, 2004; ACWD, 2005; City and County of San Francisco, 2004; City of Burlingame, 2005; City of Daly City, 2004; City of Daly City, 2005; City of East Palo Alto, 2001; City of East Palo Alto, 2006; City of Foster City, 2001; City of Fremont, 2003; City of Hayward, 2002; City of Hayward, 2005; City of Menlo Park, 1994; City of Menlo Park, 2006; City of Millbrae, 1998; City of Millbrae, 2005; City of Milpitas, 2002a; City of Milpitas, 2005; City of Mountain View, 2002; City of Mountain View, 2005; City of Newark, 2002; City of Palo Alto, 2002; City of Palo Alto, 2005; City of Redwood City, 2005; City of San Mateo, 2001; City of Santa Clara, 2002; City of Santa Clara, 2005; City of South San Francisco, 2002; City of Sunnyvale, 2002; City of Sunnyvale, 2005; City of Union City, 2002; Coastside County Water District, 2005; CWS-Mid-Peninsula, 2005; CWS-South San Francisco, 2006; Hannaford and Hydroconsult, 2004; Mid-Peninsula Water District, 2005; SFPUC, 2005; Town of Atherton, 2002; Town of Colma, 1999; Town of Hillsborough, 2002; Westborough Water District, 2005; URS, 2004.

the area covered in these plans would be the same as the area considered for the water demand projections. However, in many cases the service area boundaries do not coincide with boundaries covered in cities' general plans or the areas covered in ABAG projections; some service areas include unincorporated areas or portions of multiple cities. As noted elsewhere in this analysis, the ABAG areas that were assigned to water customer service areas are not congruent with those areas (see **Attachment E.3.A, Tables E.3.A.1 and E.3.A.2** for correspondence between water customer service areas and ABAG areas).

In 13 of the 20 cases for which direct comparisons are available, Table E.3.33 shows that water customer projections of employment in the given general plan projection year exceed *Projections 2005* employment. This result is expected, because most of the water customer projections are based on extensions of *Projections 2002*, which anticipated higher overall employment in the near term and future years for most jurisdictions than does *Projections 2005*.

Table E.3.34 compares population projections contained in local general plans, urban water management plans, SFPUC demand documents, and *Projections 2005*. In almost all cases, Table E.3.34 indicates that future population levels anticipated by *Projections 2005* or the city's general plan exceed the population levels anticipated in the relevant water customer projection.⁷ In most cases, *Projections 2005* contains the highest forecast. This pattern is consistent with ABAG's assumptions that smart growth principles and increased housing production will be incorporated into planning policy and practice in the future, especially after 2010.

⁷ In Foster City, the water customer projection is higher than any of the others, but the water customer, which is Estero MID, serves a portion of San Mateo in addition to the City of Foster City.

TABLE E.3.34
COMPARISON OF GENERAL PLAN POPULATION PROJECTIONS TO ABAG PROJECTIONS 2005,
UWMPS, AND WATER CUSTOMER DEMAND PROJECTIONS FOR GENERAL PLAN PROJECTION YEAR

	Population in General Plan Population Year ^a Shown in:			
	General Plan ^b	UWMP	SFPUC Water Customer Projection ^c	Projections 2005
Cities with GP Population Projections for 2005				
Colma	1,285	see note d	see note d	1,350
Cities with GP Population Projections for 2010				
Belmont	27,800	see note f	see note f	26,000
Burlingame	31,500	30,200	31,648	30,200
Foster City	30,803	37,424 ^e	36,284 ^e	29,800
Menlo Park	35,285	10,344 ^g	12,619 ^g	35,600
Mountain View	75,200	75,200	74,422	76,000
Palo Alto	62,880	64,168	62,823	78,300
San Mateo	100,700	see note h	see note h	102,500
Santa Clara	129,900	116,527	115,630	117,400
Cities with GP Population Projections for 2015				
Millbrae	24,860	23,055	23,253	22,800
Cities with GP Population Projections for 2020				
Atherton	8,400	see note i	see note i	7,900
Daly City	113,000	114,291 ^j	112,363 ^j	120,200
East Palo Alto	34,600	29,612	29,844	39,600
Fremont	229,213	236,700	see note k	236,900
Half Moon Bay (incl. unincorporated area)	21,065	23,262	22,679	26,400
Milpitas	77,100 ^l	82,400	79,846	82,400
Newark	49,800	50,000	see note k	49,000
San Bruno	46,400	see note m	45,642	47,700
San Francisco	811,100	840,000	818,954 ⁿ	859,200
South San Francisco+Westborough Water District ^d	67,400	78,200	70,156	68,700
Sunnyvale	154,600	146,900	144,629	146,900
Union City	80,100	86,000	see note k	82,600
Cities with GP Population Projections for 2025				
Hayward	160,300	160,300	158,909	165,900
Hillsborough	11,800	n.a.	12,520	11,600
Cities with GP Population Projections for Years Prior to 2005 or No Applicable GP: Projections for 2030				
Brisbane + Guadalupe Valley MID		n.a.	6,164	5,240
Los Altos Hills		n.a.	see note o	10,700
Los Trancos County Water District ^p		see note q	1,094	n.a.
Pacifica		42,100	47,829	42,200
Portola Valley		see note q	see note q	7,800
San Carlos		see note h	see note h	35,200
Stanford University		n.a.	27,924	n.a.
Woodside		see note q	see note q	7,300

n.a. = Not available.

^a Population shown is for the year of the most distant population projection available in the general plan, housing element, or other relevant local document (see note b). For example, populations in all columns for cities in the group titled "Cities with GP Population Projections for 2005" are populations projected for or estimated in 2005.

^b Population estimates are from each city's general plan (GP) or the general plan's EIR.

^c Estimates for years between 2001 and 2030 are derived by Mundie & Associates, based on linear interpolations of water customer projections, except for the 2020 San Francisco projection, which is included in the Retail Demand Study (Hannaford and Hydroconsult, 2004).

^d CWS – South San Francisco District (Colma, parts of Daly City and South San Francisco, plus unincorporated areas) UWMP projection for 2020 is 64,050, and Westborough Water District (which serves part of South San Francisco) UWMP projection for 2020 is 14,150; the CWS-South San Francisco water customer projection for 2020 is 56,006 and the Westborough Water District water customer projection is the same as its UWMP projection (14,150).

TABLE E.3.34 (Continued)
COMPARISON OF GENERAL PLAN POPULATION PROJECTIONS TO ABAG PROJECTIONS 2005, UWMPs, AND WATER CUSTOMER DEMAND PROJECTIONS FOR GENERAL PLAN PROJECTION YEAR

- ^e Figures shown are for Estero MID (Foster City and part of San Mateo).
^f Mid-Peninsula Water District (Belmont, part of San Carlos, and portions of unincorporated San Mateo County) UWMP projection for 2010 is 26,130; water customer projection is 26,925.
^g Figures shown are for the City of Menlo Park water agency, which serves part of Menlo Park (less than half of the city's population).
^h CWS – Mid-Peninsula District (parts of the cities of San Mateo and San Carlos plus unincorporated areas) UWMP projection for 2010 is 129,070; water customer projection is 126,746. Part of San Mateo is served by Estero MID.
ⁱ CWS – Bear Gulch District (Atherton, parts of Menlo Park, Portola Valley, and Woodside, plus unincorporated areas) UWMP projection for 2020 is 57,730; water customer projection for 2020 is 71,125.
^j Figures shown are for City of Daly City water agency, which serves part of Daly City.
^k Alameda County Water District (cities of Fremont, Newark, and Union City) projection is 358,066 in 2020.
^l Based on Milpitas General Plan.
^m The UWMP (Table 2) reports three population projections: the draft general plan (2006), ABAG subregional (2005), and adjusted draft general plan (2001), although the draft general plan (2006) does not include a projection for 2020. The projections for 2020 are, respectively, 43,400 (based on a straight-line interpolation from projections shown for 2005 and 2025), 47,700, and 43,400.
ⁿ Figure is for Household Population in 2020 as shown in the Retail Demand Study (Hannaford and Hydroconsult, 2004).
^o Purissima Water District (part of Los Altos Hills and some unincorporated areas) water customer projection is 6,763.
^p Los Trancos County Water District was acquired by CWS in 2006, and is now part of the CWS – Bear Gulch District. Because it was a separate entity when these projections were prepared, it is presented separately in this analysis.
^q CWS – Bear Gulch District (Atherton, parts of Menlo Park, Portola Valley, and Woodside, plus unincorporated areas) UWMP projection for 2030 is 59,220; water customer projection is 73,719 (excluding Los Trancos).

SOURCES: ABAG, 2004; ACWD, 2005; CWS-Mid-Peninsula, 2005; CWS-South San Francisco, 2006; City and County of San Francisco, 2004; City of Belmont, 2002; City of Burlingame, 2002a; City of Burlingame, 2005; City of Daly City, 2004; City of Daly City, 2005; City of East Palo Alto, 1999; City of East Palo Alto, 2006; City of Foster City, 2001; City of Fremont, 2003; City of Half Moon Bay, 1993; City of Hayward, 2002; City of Hayward, 2005; City of Menlo Park, 1994; City of Menlo Park, 2006; City of Millbrae, 1998; City of Millbrae, 2005; City of Milpitas, 2002b; City of Milpitas, 2005; City of Mountain View, 2002; City of Mountain View, 2005; City of Newark, 2002; City of Palo Alto, 1998; City of Palo Alto, 2005; City of San Bruno, 2003; City of San Bruno, 2007; City of San Mateo, 2001; City of Santa Clara, 2002; City of Santa Clara, 2005; City of South San Francisco, 2002; City of Sunnyvale, 2002; City of Sunnyvale, 2005; City of Union City, 2002; Coastsides County Water District, 2005; Estero MID, 2005; Hannaford and Hydroconsult, 2004; Mid-Peninsula Water District, 2006; SFPUC, 2005; Town of Atherton, 2002; Town of Colma, 1999; Town of Hillsborough, 2002; URS, 2004; Westborough Water District, 2005.

Tables E.3.35 and E.3.36 provide a different comparison of the projections published by the various water customers, local general purpose governments, and ABAG: instead of focusing on the most distant future year of general plan projections, they focus on employment and population forecasts for 2030.

In just over half of the cases for which direct comparisons are available (11 of 20), Table E.3.35 shows that water customer projections of employment in 2030 exceed *Projections 2005* employment in that year. As previously noted (regarding Table 3.33) this result is expected because most of the water customer projections are based on extensions of *Projections 2002*, which anticipated higher overall employment in 2025 (that projection's horizon year) than does *Projections 2005* (for a comparison, see Table E.3.31). In some cases, too, the water customer encompasses a greater area than the city.

In most cases, Table E.3.36 shows that water customer projections of population in 2030 are smaller than the *Projections 2005* estimates for that year. This result is also expected: because most of the customer projections are based on *Projections 2002*, they do not incorporate ABAG's smart growth assumptions, which include increased housing production (and, consequently, population) after about 2010.

TABLE E.3.35
COMPARISON OF GENERAL PLAN EMPLOYMENT PROJECTIONS TO
ABAG PROJECTIONS 2005, UWMPs, AND WATER CUSTOMER DEMAND PROJECTIONS FOR 2030

	General Plan Employment Projection	UWMP Employment in 2030	SFUC Water Customer Employment Projection for 2030	Projections 2005 Employment in 2030
Cities with GP Employment Projections for 2010				
East Palo Alto	5,940		8,673	6,110
Foster City	18,760		see note b	21,110
Menlo Park	17,900		13,287 ^{c,d}	43,700
Milpitas	65,200		76,129	68,940
Mountain View	84,810		95,669 ^e	81,110
Palo Alto	98,500	114,224	114,224	117,090
San Mateo	67,628		see notes b,f	70,780
Santa Clara	151,280		177,027	152,670
Cities with GP Employment Projections for 2015				
Millbrae	12,006		8,009	9,960
Cities with GP Employment Projections for 2020				
Atherton	3,840		see note d	3,710
Colma	2,080		see note g	4,570
Daly City	34,260	34,000	33,981 ^{k,g}	29,830
Fremont	130,530		see note a	160,410
Newark	26,560		see note a	24,960
San Bruno	19,180		25,770 ^o	28,400
San Francisco	745,600	795,400	795,400	829,090
South San Francisco+Westborough Water District	71,400		63,975 ^g	56,080
Sunnyvale	152,730		168,950	123,020
Union City	20,710		see note a	44,000
Cities with GP Employment Projections for 2025				
Hayward	108,830		113,843	100,430
Hillsborough	1,360		1,380 ^h	2,030
Cities with GP Employment Projections for Years Prior to 2005 or No Applicable GP Employment Projection				
Belmont			22,221 ⁱ	14,070
Brisbane+Guadalupe Valley MID			25,243	20,420
Burlingame			36,160 ^j	33,370
Half Moon Bay			6,795 ^l	8,490 ^p
Los Altos Hills			see note m	1,780
Pacifica			7,478	7,670
Portola Valley			see notes d,n	2,720
Redwood City		69,980	83,678	76,550
San Carlos			see note f	26,930
San Jose (North)			3,353	
Stanford University			see note q	see note q
Woodside			see note d	3,400

^a Alameda County Water District (cities of Fremont, Newark, and Union City) projection for 2030 is 221,858.

^b Estero MID (Foster City and part of San Mateo) projection for 2030 is 31,840.

^c Figure shown is for the portion of Menlo Park (less than half of the city's population) served by the SFPUC wholesale customer, the City of Menlo Park Water Agency).

^d CWS – Bear Gulch District (Atherton, parts of Menlo Park, Portola Valley, and Woodside, plus unincorporated areas) projection for 2030 is 47,774.

^e Figure shown is for the City of Mountain View Water Agency, which serves most of Mountain View.

^f CWS – Mid-Peninsula District (parts of the cities of San Mateo and San Carlos plus unincorporated areas) projection for 2030 is 100,568.

^g Figure shown is for CWS – South San Francisco District (Colma, parts of Daly City and South San Francisco, plus unincorporated areas) and Westborough Water District combined.

^h Figure shown is for the Town of Hillsborough Water Agency, which also serves some unincorporated area.

ⁱ Figure shown is for the Mid-Peninsula Water District, which also serves a portion of San Carlos and some unincorporated areas.

^j Figure shown is for the City of Burlingame Water Agency, which also serves some unincorporated area.

^k Figure shown is for the portion of Daly City served by the City of Daly City Water Agency.

^l Figure shown is for the Coastside County Water District, which also serves unincorporated Half Moon Bay.

^m Purissima Hills Water District (part of Los Altos Hills and some unincorporated area) projection for 2030 is 457.

ⁿ A portion of Portola Valley is in the Los Trancos County Water District, has no nonresidential accounts. (Los Trancos was acquired by CWS in 2006, and is now part of the CWS – Bear Gulch District.)

^o Figure shown is for the City of San Bruno Water Agency, which also serves some unincorporated areas.

^p Includes ABAG's "unincorporated Half Moon Bay."

^q Employment projections were not provided for Stanford because it uses other parameters to forecast growth in non-residential accounts.

SOURCES: Same as sources for Table E.3.33.

TABLE E.3.36
COMPARISON OF GENERAL PLAN POPULATION PROJECTIONS TO
ABAG PROJECTIONS 2005, UWMPs, AND WATER CUSTOMER DEMAND PROJECTIONS FOR 2030

	General Plan Population Projection	UWMP Population in 2030	SFPUC Water Customer Population Projection for 2030	Projections 2005 Population in 2030
Cities with GP Population Projections for 2005				
Colma	1,285	see note a	see note a	1,860
Cities with GP Population Projections for 2010				
Belmont	27,800	see note c	see note c	28,800
Burlingame	31,500	31,900	34,967 ^d	31,900
Foster City	30,803	40,866	40,096 ^b	32,500
Menlo Park	35,285	11,218 ^{e,f}	13,655 ^{e,f}	41,100
Mountain View	75,200	81,700 ^g	81,670 ^g	89,600
Palo Alto	62,880	69,199	69,199	92,200
San Mateo	100,700	see note h	see note b, h	119,800
Santa Clara	129,900	140,698	140,698	142,100
Cities with GP Population Projections for 2015				
Millbrae	24,860	24,200	25,174	24,500
Cities with GP Population Projections for 2020				
Atherton	8,400	see note f	see note f	8,200
Daly City	113,000 ⁱ	115,651 ^{j,k}	115,651 ^{j,k}	127,200
East Palo Alto	34,600	32,712	32,712	43,600
Fremont	229,213	257,100	see note l	257,200
Half Moon Bay (incl. uninc. area)	21,065	24,973 ^m	24,973 ^m	27,100
Milpitas	77,100 ⁿ	91,400	88,841	91,400
Newark	49,800	53,500	see note l	53,400
San Bruno	46,400	see note o	48,229 ^p	50,700
San Francisco	811,100	871,000	849,942	924,600
South San Francisco+Westborough Water District	67,400	83,450 ^q	73,884 ^q	71,800
Sunnyvale	154,600	159,100	151,610	159,100
Union City	80,100	95,300	see note l	94,100
Cities with GP Population Projections for 2025				
Hayward	160,300	162,800	162,757	171,500
Hillsborough	11,800		12,708 ^r	11,800
Cities with GP Population Projections for Years Prior to 2005 or No Applicable GP Population Projection				
Brisbane + Guadalupe Valley MID		n.a.	6,164	5,240
Los Altos Hills		n.a.	see note s	10,700
Los Trancos Valley Water Dist. ^t		n.a.	1,094 ^v	
Pacifica		42,100	47,829	42,200
Portola Valley		n.a.	see notes f, v	7,800
San Carlos		see note h	see note h	35,200
Stanford University			27,924	n.a.
Woodside			see note f	7,300

^a CWS – South San Francisco District (Colma, parts of Daly City and South San Francisco, plus unincorporated areas) UWMP projection for 2030 is 60,150; water customer projection for 2030 is 59,584.

^b Estero MID (Foster City and part of San Mateo) projection for 2030 is 40,096.

^c Mid-Peninsula Water District (Belmont, part of San Carlos, and portions of unincorporated San Mateo County) UWMP projection for 2030 is 28,930; water customer projection is 27,997.

^d Figure shown is for the City of Burlingame Water Agency, which also serves some unincorporated area.

^e Figure shown is for the portion of Menlo Park (less than half of the city's population) served by the City of Menlo Park Water Agency.

^f CWS – Bear Gulch District (Atherton, parts of Menlo Park, Portola Valley, and Woodside, plus unincorporated areas) projection for 2030 is 73,719; UWMP population projection is 59,220 in 2030.

^g Figure shown is for the City of Mountain View Water Agency, which serves most of Mountain View.

^h CWS – Mid-Peninsula District (parts of the cities of San Mateo and San Carlos plus unincorporated areas) water customer population projection for 2030 is 139,834; UWMP population projection for 2030 is 134,010.

ⁱ The Housing Element of the Daly City General Plan projects this population within the city limits and a population of 120,000 within the (planning) area that corresponds to the ABAG subregional study area.

^j Figure shown is for the portion of Daly City served by the City of Daly City Water Agency.

^k Parts of Daly City and South San Francisco are served by CWS – South San Francisco District.

^l Alameda County Water District (cities of Fremont, Newark, and Union City) projection for 2030 is 379,931.

^m Figure shown is for the Coastside County Water District, which also serves unincorporated Half Moon Bay.

ⁿ Based on Milpitas General Plan.

^o 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.

^p Figure shown is for the City of San Bruno Water Agency, which also serves some unincorporated areas.

^q Figures shown are for the CWS – South San Francisco District plus Westborough Water District. For the Westborough Water District, the water customer projection is the same as the UWMP projection.

^r Figure shown is for the Town of Hillsborough Water Agency, which also serves some unincorporated area.

^s Purissima Hills Water District, (part of Los Altos Hills and some unincorporated area) projection is 6,763.

^t Los Trancos County Water District was acquired by CWS in 2006, and is now part of the CWS – Bear Gulch District. Because it was a separate entity when these projections were prepared, it is presented separately in this analysis.

^u Includes a portion of Portola Valley.

^v Portola Valley is served by CWS – Bear Gulch District; a portion of the city was previously served by the Los Trancos County Water District, which is now part of CWS – Bear Gulch.

SOURCE: See sources for Table E.3.34.

Summary: Comparison of Employment and Population Projections to Water Demand Projections

The review of employment and population projections presented above traces the evolution of ABAG's projections for Bay Area counties and communities from *Projections 2002*, which provided the basis for most water customer forecasts of future demand for water, through *Projections 2003*, which applied smart growth principles to the forecasts, and *Projections 2005*, which updated the smart growth-based forecasts. As shown in Tables E.3.31 and E.3.32, ABAG's projections of both employment and population were greater with *Projections 2003* than with *Projections 2002*. *Projections 2005* anticipated less total employment and population in 2030 than *Projections 2003*, but more in 2025 than *Projections 2002*. The downward adjustments of employment between *Projections 2003* and *Projections 2005* reflect improved understanding of the magnitude of job losses in the early 2000s: although *Projections 2005* anticipates more employment growth between 2005 and 2030 than did *Projections 2003*, the increased growth does not make up for the adjusted starting point.

Tables E.3.37 and E.3.38 provide final comparisons: they compare the percentage increases in employment and population to the expected percentage increase in water demand in each water customer service area. Table E.3.37 compares increased water demand to the employment and population forecasts in ABAG's *Projections 2005*, while Table E.3.38 compares increased water demand to employment and population forecasts used by the customers themselves.

There are two critical differences between Table E.3.37 and E.3.38: (1) in Table E.3.37, the geographic areas covered by the ABAG projections on the one hand and the customers' projections of water demand on the other are not congruent, and distortions in area may distort the comparisons of percentage change (see **Tables E.3.A.1 and E.3.A.2** for the correspondence between ABAG areas used in the table and water customer service areas), and (2) the water customers' projections are based primarily on *Projections 2002*. If the greatest proportion of water demand is associated with population (rather than employment), then the water demand projections are likely to be lower than forecasts based on *Projections 2005* (see text above).

Table E.3.37 indicates that, with only two exceptions, the percentage increases in water demand forecast by the water customers are smaller than the percentage changes in population and employment anticipated by *Projections 2005*. The exceptions are:

- *Hayward*: the water customer forecast shows a 38 percent increase in water demand; *Projections 2005* shows a 34 percent increase in employment and a 17 percent increase in population.
- *Purissima Hills Water District*: the water customer forecast shows an increase of 38 percent in water demand; *Projections 2005* anticipates increases of about 8 percent in both employment and population. Note, however, that (1) the water district includes some unincorporated areas that are not captured in the ABAG figures reported here, and (2) the district is quite small, with district-estimated employment of about 400 and population of about 6,000 in 2001.

TABLE E.3.37
COMPARISON OF INCREASES IN EMPLOYMENT AND POPULATION
TO EXPECTED INCREASES IN DEMAND
(PROJECTIONS 2005 ESTIMATES OF EMPLOYMENT AND POPULATION)

Customer/Jurisdiction	% Change in:		Change in Demand			Projected % of Total Demand in 2030
	Employ- ment	Population	2005 (MGD)	2030 (MGD)	% Change	
Alameda County						
Alameda County Water District	66.7%	23.8%	53.20	59.30	11.5%	14.2%
Hayward/Hayward	34.0%	16.7%	20.80	28.70	38.0%	6.9%
Santa Clara County						
Milpitas/Milpitas	35.2%	39.5%	13.00	17.70	36.2%	4.2%
Mountain View/Mountain View (most)	42.0%	24.4%	13.40	14.80	10.4%	3.6%
Palo Alto/Palo Alto	17.9%	24.6%	14.50	14.36	-1.0%	3.4%
Purissima Hills Water District	7.9%	8.1%	2.40	3.30	37.5%	0.8%
San Jose (North)	na	na	5.40	6.50	20.4%	1.6%
Santa Clara/Santa Clara	38.8%	30.7%	28.00	33.90	21.1%	8.1%
Stanford University/(part of Palo Alto)	na	na	4.30	6.80	58.1%	1.6%
Sunnyvale/Sunnyvale	65.0%	19.6%	25.00	26.80	7.2%	6.4%
San Mateo County						
Brisbane/Brisbane (part)	149.0%	39.7%	0.50	0.93	86.0%	0.2%
Guadalupe Valley MID/Brisbane (part)			0.39	0.81	107.7%	0.2%
Burlingame	46.0%	8.5%	4.80	4.90	2.1%	1.2%
CWS – Bear Gulch District	na	na	13.50	13.90	3.0%	3.3%
CWS – Mid Peninsula District	54.9%	20.5%	17.50	18.10	3.4%	4.3%
CWS – South San Francisco District	35.5%	17.8%	9.00	9.90	10.0%	2.4%
Coastside County Water District	12.6%	13.4%	2.70	3.20	18.5%	0.8%
Daly City/Daly City	65.9%	16.3%	8.70	9.10	4.6%	2.2%
East Palo Alto/East Palo Alto	186.9%	33.3%	2.60	4.80	84.6%	1.2%
Estero MID	48.8%	9.1%	6.00	6.80	13.3%	1.6%
Hillsborough	22.3%	7.3%	3.70	3.90	5.4%	0.9%
Los Trancos County Water District/ Portola Valley (part) ^a	na	na	0.11	0.14	27.3%	0.0%
Menlo Park/Menlo Park (part)	52.0%	16.4%	4.10	4.70	14.6%	1.1%
Mid-Peninsula Water District	71.8%	12.9%	3.70	3.80	2.7%	0.9%
Millbrae/Millbrae	45.2%	15.6%	3.30	3.30	0.0%	0.8%
North Coast County Water District/Pacifica	24.3%	9.3%	3.70	3.80	2.7%	0.9%
Redwood City	39.1%	20.3%	12.10	13.40	10.7%	3.2%
San Bruno	104.2%	21.6%	4.20	4.50	7.1%	1.1%
Skyline County Water District	na	na	0.19	0.31	63.2%	0.1%
Westborough Water District/ South San Francisco (part)	na	na	1.01	1.03	2.0%	0.2%
Total, Wholesale Service Area	46.8%	21.1%	281.80	323.82	14.9%	77.6%
SFPUC Retail Service Area/San Francisco	44.0%	15.9%	92.40	93.40	1.1%	22.4%
TOTAL	45.7%	19.4%	374.20	417.22	11.5%	100.0%

^a Los Trancos County Water District was acquired by CWS in 2006, and is now part of the CWS – Bear Gulch District. Because it was a separate entity when these projections were prepared, it is presented separately in this analysis.

SOURCES: ABAG, 2004; URS, 2004; Hannaford and Hydroconsult, 2004; Westborough Water District, 2005

TABLE E.3.38
COMPARISON OF INCREASES IN EMPLOYMENT AND POPULATION
TO EXPECTED INCREASES IN DEMAND
(WATER CUSTOMER ESTIMATES OF EMPLOYMENT AND POPULATION)^a

Customer/Jurisdiction	% Change in:		Change in Demand			Projected % of Total Demand in 2030
	Employ- ment (2005-2030)	Population (2005-2030)	2005 (MGD)	2030 (MGD)	% Change	
Alameda County						
Alameda County Water District	37.9%	16.8%	53.2	59.3	11.5%	14.2%
Hayward/Hayward	25.0%	13.4%	20.8	28.7	38.0%	6.9%
Santa Clara County						
Milpitas/Milpitas	34.3%	33.9%	13	17.7	36.2%	4.2%
Mountain View/Mountain View (most)	22.0%	12.5%	13.4	14.8	10.4%	3.6%
Palo Alto/Palo Alto	7.1%	13.0%	14.5	14.36	1.0%	3.4%
Purissima Hills Water District	7.5%	10.3%	2.4	3.3	37.5%	0.8%
San Jose (North)	28.1%	19.5%	5.4	6.5	20.4%	1.6%
Santa Clara/Santa Clara	23.3%	28.7%	28	33.9	21.1%	8.1%
Stanford University/(part of Palo Alto)	na	33.8%	4.3	6.8	58.1%	1.6%
Sunnyvale/Sunnyvale	28.5%	13.0%	25	26.8	7.2%	6.4%
San Mateo County						
Brisbane/Brisbane (part)	228.1%	36.6%	0.5	0.93	86.0%	0.2%
Burlingame	13.4%	13.5%	4.8	4.9	2.1%	1.2%
CWS – Bear Gulch District	9.6%	9.6%	13.5	13.9	3.0%	3.3%
CWS – Mid Peninsula District	22.0%	13.3%	17.5	18.1	3.4%	4.3%
CWS – South San Francisco District	22.0%	17.7%	9	9.9	10.0%	2.4%
Coastside County Water District	21.5%	29.8%	2.7	3.2	18.5%	0.8%
Daly City/Daly City	21.7%	7.7%	8.7	9.1	4.6%	2.2%
East Palo Alto/East Palo Alto	115.1%	28.1%	2.6	4.8	84.6%	1.2%
Estero MID	25.6%	13.5%	6	6.8	13.3%	1.6%
Guadalupe Valley MID/Brisbane (part)	22.9%	159.9%	0.39	0.81	107.7%	0.2%
Hillsborough	11.4%	8.0%	3.7	3.9	5.4%	0.9%
Los Trancos County Water District/ Portola Valley (part) ^b	na	38.7%	0.11	0.14	27.3%	0.0%
Menlo Park/Menlo Park (part)	26.6%	10.5%	4.1	4.7	14.6%	1.1%
Mid-Peninsula Water District	41.2%	5.0%	3.7	3.8	2.7%	0.9%
Millbrae/Millbrae	16.9%	14.6%	3.3	3.3	0.0%	0.8%
North Coast County Water District/Pacifica	24.0%	15.3%	3.7	3.8	2.7%	0.9%
Redwood City	21.7%	12.0%	12.1	13.4	10.7%	3.2%
San Bruno	44.1%	15.5%	4.2	4.5	7.1%	1.1%
Skyline County Water District	na	89.9%	0.19	0.31	63.2%	0.1%
Westborough Water District/ South San Francisco (part) ^c	1.3%	8.7%	1.01	1.03	2.0%	0.2%
Total, Wholesale Service Area	25.8%	16.1%	281.8	323.8	14.9%	77.6%
SFPUC Retail Service Area/ San Francisco	21.2%	10.0%	92.4	93.4	1.1%	22.4%
TOTAL	24.2%	14.2%	374.2	417.2	11.5%	100.0%

^a Includes only those portions of each county served by SFPUC wholesale water customers or served directly by the SFPUC (San Francisco County).

^b Los Trancos County Water District was acquired by CWS in 2006, and is now part of the CWS – Bear Gulch District. Because it was a separate entity when these projections were prepared, it is presented separately in this analysis.

^c Population estimates from the Westborough Water District's 2005 Urban Water Management Plan.

SOURCES: URS, 2004; Hannaford and Hydroconsult, 2004; Westborough Water District, 2005

The figures in Table E.3.38 indicate that, with only a few exceptions, the water customers themselves anticipate smaller increases in water demand than they do in employment and population. This relationship between water demand and employment/population growth reflects that other factors also influence the rate of water consumption. These factors could include changes in land use patterns such as higher-density development that results in less open landscaped area, shifts toward landscaping with drought-tolerant plants, and the effects of plumbing codes that require low-flow appliances in all new development and fixture replacement over time in existing homes and businesses. As a result of these types of changes, the rate of increase in water demand is lower than the rate of increase in population and employment.

In three cases, the water customer's forecast of the percentage increase in water demand exceeds its forecasts of the percentage increases in *both* employment *and* population:

- *Hayward*: the forecast shows an increase of 38 percent in water demand, compared to 25 percent in employment and 13 percent in population.
- *Milpitas*: the forecast shows an increase of 36 percent in water demand, compared to 34 percent in employment and 34 percent in population.
- *Purissima Hills*: the forecast shows an increase of 38 percent in water demand, compared to 8 percent in employment and 10 percent in population.

All three customers anticipate growth in a new category of high-water-use residential accounts associated with development of larger residences with larger landscaped areas and substantially higher water usage than older residences. Hayward also expects growth in renovated single family residences, commercial, and industrial accounts that will have higher water usage than existing accounts in those categories. Milpitas anticipates growth of high water uses commercial accounts. Milpitas also expects to increase the use of recycled water which offsets some of the increase in its future demand.

In three other cases, the water customer's forecast of the percentage increase in water demand exceeds its forecasts of the percentage increases in *either* employment *or* population:

- *Brisbane*: the forecast shows an increase of 86 percent in water demand, compared to 228 percent in employment but only 37 percent in population.
- *Guadalupe Valley MID*: the forecast shows an increase of 108 percent in water demand, compared to 23 percent in employment but 160 percent in population.
- *Menlo Park*: the forecast shows an increase of 15 percent in water demand, compared to 27 percent in employment but only 11 percent in population.
- *San Jose*: the forecast shows an increase of 20 percent in water demand, compared to 28 percent in employment but only 20 percent in population.

ATTACHMENT E.3.A

Table E.3.A.1 establishes a correspondence between the boundaries of wholesale customers in Alameda, Santa Clara, and San Mateo Counties and the jurisdictions/areas for which ABAG publishes population and employment projections. Table E.3.A.2 assigns jurisdictions to the respective water districts.

**TABLE E.3.A.1
COMPARISON OF WHOLESALE CUSTOMER BOUNDARIES AND
BOUNDARIES OF ABAG PROJECTION AREAS**

Customer	County	ABAG Jurisdiction(s)
Alameda County Water District	Alameda	Fremont Newark Union City
Brisbane	San Mateo	Brisbane (part)
Burlingame	San Mateo	Burlingame (Non-segregable) Unincorporated areas
Coastside County Water District	San Mateo	Half Moon Bay Unincorporated Half Moon Bay
CWS - Bear Gulch District	San Mateo	Atherton Menlo Park (part) (Non-segregable) Unincorporated areas Portola Valley (part) Woodside (part)
CWS - Mid Peninsula District	San Mateo	San Carlos (part) (Non-segregable) Unincorporated areas San Mateo (part)
CWS - South San Francisco District	San Mateo	Colma Daly City (part) (Non-segregable) Unincorporated areas South San Francisco (part)
Daly City	San Mateo	Daly City
East Palo Alto	San Mateo	East Palo Alto
Estero MID	San Mateo	Foster City San Mateo (part)
Guadalupe Valley MID	San Mateo	Brisbane (part)
Hayward	Alameda	Hayward
Hillsborough	San Mateo	Hillsborough (Non-segregable) Unincorporated areas
Los Trancos County Water District ^a	San Mateo	Portola Valley (part)
Menlo Park	San Mateo	Menlo Park (part)
Mid-Peninsula Water District	San Mateo	Belmont (Non-segregable) Unincorporated areas San Carlos (part)
Millbrae	San Mateo	Millbrae
Milpitas	Santa Clara	Milpitas
Mountain View	Santa Clara	Mountain View (most)
North Coast County Water District	San Mateo	Pacifica
Palo Alto	Santa Clara	Palo Alto
Purissima Hills Water District	Santa Clara	Los Altos Hills (Non-segregable) Unincorporated areas
Redwood City	San Mateo	Redwood City San Carlos (part) (Non-segregable) Unincorporated areas Woodside (part)
San Bruno	San Mateo	San Bruno (Non-segregable) Unincorporated areas
San Jose	Santa Clara	North San Jose/Alviso
Santa Clara	Santa Clara	Santa Clara
Skyline County Water District	San Mateo	Woodside (part) (Non-segregable) Unincorporated areas
Stanford University	Santa Clara	(part of Palo Alto)
Sunnyvale	Santa Clara	Sunnyvale
Westborough Water District	San Mateo	South San Francisco (part)

^a Los Trancos County Water District was acquired by CWS in 2006, and is now part of the CWS – Bear Gulch District. Because it was a separate entity when these projections were prepared, it is presented separately in this analysis.

**TABLE E.3.A.2
CORRESPONDENCE OF ABAG JURISDICTIONS WITH
WHOLESALE CUSTOMER WATER CUSTOMERS**

Wholesale Water Customers	Corresponding Jurisdiction(s)
Alameda County Water District	Fremont, Newark, Union City
Brisbane Guadalupe Valley MID	Brisbane
Burlingame ^a	Burlingame
Coastside County Water District	Half Moon Bay, unincorporated HMB
CWS - Bear Gulch District ^{a,b} Los Trancos County Water District ⁿ Skyline County Water District	Atherton, Portola Valley, Woodside ^l
CWS - Mid Peninsula District ^a	San Carlos, San Mateo ^j
CWS - South San Francisco District ^{a,c} Westborough Water District ^h	Colma, South San Francisco ^m
Daly City ⁱ	Daly City
East Palo Alto	East Palo Alto
Estero MID ^d	Foster City
Hayward	Hayward
Hillsborough ^a	Hillsborough
Menlo Park	Menlo Park ^k
Mid-Peninsula Water District ^{a,e}	Belmont
Millbrae	Millbrae
Milpitas	Milpitas
Mountain View	Mountain View
North Coast County Water District	Pacifica
Palo Alto Stanford University	Palo Alto
Purissima Hills Water District ^a	Los Altos Hills
Redwood City ^{a,f}	Redwood City
San Bruno ^a	San Bruno
San Jose ^g	(None)
Santa Clara	Santa Clara
Sunnyvale	Sunnyvale

^a Correspondence excludes non-segregable unincorporated areas that are not included in the ABAG definition of the jurisdiction.

^b Portion of Menlo Park served by CWS – Bear Gulch District assigned to Menlo Park.

^c Portion of Daly City served by CWS – South San Francisco District assigned to Daly City.

^d Portion of San Mateo served by Estero MID assigned to San Mateo.

^e Portion of San Carlos served by Mid-Peninsula Water District assigned to CWS – Mid-Peninsula District.

^f Portion of San Carlos served by Redwood City assigned to CWS – Mid-Peninsula District; portion of Woodside served by Redwood City assigned to CWS – Bear Gulch District.

^g Portion of North San Jose/Alviso served by San Jose Water District is not assigned.

^h Portion of South San Francisco served by Westborough Water District assigned to CWS – South San Francisco District.

ⁱ Includes portion of Daly City served by CWS – South San Francisco District.

^j Includes portions of San Carlos served by Mid-Peninsula Water District and Redwood City.

^k Includes portions of Menlo Park served by CWS – Bear Gulch District

^l Includes portion of Portola Valley served by Los Trancos Water District (now a part of CWS – Bear Gulch District) and portions of Woodside served by Redwood City and Skyline County Water District.

^m Includes portion of South San Francisco served by Westborough Water District.

ⁿ Los Trancos County Water District was acquired by CWS in 2006, and is now part of the CWS – Bear Gulch District. Because it was a separate entity when these projections were prepared, it is presented separately in this analysis.

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APPENDIX E.4

Growth Trends and Policies of a Selection of Jurisdictions

To supplement information on forecasted population and employment growth presented in PEIR Chapter 7 and provide a more in-depth understanding of service area growth trends, this appendix takes a more detailed look at the growth trends and policies of San Francisco and a selection of jurisdictions (and a university) served by wholesale customers. A selection of jurisdictions served by wholesale customers in each county of the wholesale service area are included. These jurisdictions represent a range of sizes and include, but are not limited to, the largest city (San Francisco), some of the other larger cities in the wholesale service area, and some of the cities projecting relatively substantial increases in water demand in 2030. in each county of the wholesale service area.

Summaries of growth trends and policies are presented for the jurisdictions and university listed below. The profiles are based primarily on information in BAWSCA agency profiles (BAWSCA, 2005), the general plans of the respective jurisdictions, and contacts with city planning departments. The population of each jurisdiction from Census 2000 (U.S. Census Bureau, 2000), and population estimates for 2005 and 2006 from the U.S. Census Bureau, ABAG, and the California Department of Finance (DOF) (U.S. Census Bureau, 2006; ABAG, 2004; California Department of Finance 2006) are included to provide a sense of recent growth.

- Alameda County: Fremont, Newark, Union City, and Hayward
- Santa Clara County: Milpitas, Santa Clara, Stanford University, and Sunnyvale
- San Mateo County: East Palo Alto, Redwood City, San Mateo, and South San Francisco
- San Francisco (City and County)

E.4.1 Alameda County

Fremont

Overview

Fremont is bordered by San Francisco Bay to the west, the foothills and mountains of the Diablo Range to the east, Union City and Hayward to the north, and Milpitas and San Jose to the south (refer to Figure 7.2 in PEIR Chapter 7). Fremont also borders—and encircles—the city of Newark. According to the Fremont General Plan (adopted in 1991¹), the city's land use mix

¹ Updated land use and housing elements, also cited herein, were adopted in 2003.

consists of approximately 29 percent single-family and multifamily residences, 3 percent retail/commercial space, 13 percent industrial space, and 55 percent open space² (City of Fremont, 1991).

Water Service

Fremont is served by the Alameda County Water District (ACWD), which also includes the cities of Newark and Union City. The ACWD service area encompasses approximately 103 square miles in southwestern Alameda County, on the east side of San Francisco Bay (refer to Figure 7.1 in PEIR Chapter 7). The ACWD serves a population of about 323,000 people, providing water to the cities of Fremont, Newark, and Union City. The ACWD consists primarily of single-family, owner-occupied homes. Residential accounts represent approximately 64 percent of ACWD's current total water demand; commercial and industrial accounts represent approximately 22 percent; and other uses and unaccounted-for water represent 7 and 8 percent of demand, respectively. According to the BAWSCA agency profile, the SFPUC supplies approximately 24 percent of the ACWD's water, while water from the State Water Project, local groundwater, and local surface water meet the remaining need (URS, 2004; BAWSCA, 2005).

Growth Trends and Policies

Fremont grew rapidly following its incorporation in 1956, with population increasing fourfold (to 100,000) by 1970. The population doubled again over the next three decades, to 203,413 in 2000 (City of Fremont, 2003a; U.S. Census Bureau, 2000). Population estimates since 2000 vary somewhat. The U.S. Census Bureau estimates Fremont's 2005 population to be 200,468, a 1.4 percent decrease, whereas the California DOF estimates Fremont's 2006 population to be 210,158, a 3.3 percent increase from 2000. These figures, ABAG estimates for 2005, and the buildout projections of the general plan are shown in **Table E.4.1**.

The Fremont Municipal Code does not include a growth ordinance per se, but the stated purposes of sections of the code governing subdivisions (Section 8-1101) and development agreements (Section 8-7101) include the promotion of orderly growth and development (City of Fremont, 2007).

The Fremont General Plan is a statement of the community's vision of its long-term or ultimate physical form and contains goals, policies, and programs intended to guide decision-making for future development in the city (City of Fremont, 1991). Goals related to growth management articulated in the 2003 Fremont General Plan Land Use Element include conservation of the city's open space resources (Goal LU 4) and protection of "sensitive hill face and uses in the remainder of the hill area" consistent with the area's character and environmental constraints (Goal LU 6). Buildout under the 1991 Fremont General Plan is expected to occur by 2010 and result in a total population of approximately 201,100 (less than the actual population in 2000) (City of Fremont, 1991). The more recent housing element (City of Fremont, 2003a) projects that the population will increase by 25,800 between 2000 and 2020 (i.e., from 203,413 to 229,213). The average household size is projected to be 3.17 in 2010 (City of Fremont, 2003b).

² Percentages derived from area information (acreage and square footage) provided in the Fremont General Plan.

**TABLE E.4.1
CURRENT POPULATION ESTIMATES AND FORECASTS OF SELECT JURISDICTIONS**

City	Actual Population	Current Population Estimates			Forecasts				
	U.S. Census 2000 Population	U.S. Census Estimated 2005 Population	ABAG Projections 2005 Estimated 2005 Population	Department of Finance Estimated 2006 Population	General Plan Buildout (Year) and Population	ABAG Projections 2005 Population Projection for General Plan Buildout Year	Customer- Selected Population Projection for 2030	ABAG Projections 2005 Population Projection for 2030	Percent of Supply (after Conservation) from SFPUC
Alameda County									
ACWD ^a	312,753	311,600	326,900	325,396	(2020) 359,113	368,500	379,931	404,700	25%
Fremont	203,413	200,468	211,100	210,158	(2020) 229,213	236,900		257,200	
Newark ^b	42,471	41,956	44,400	43,486	(2020) 49,800	49,000		53,400	
Union City	66,869	69,176	71,400	71,752	(2020) 80,100	82,600		94,100	
Hayward	140,030	140,293	146,300	146,398	(2025) 160,300	165,900	162,757	171,500	100%
Santa Clara County									
Milpitas ^c	62,698	63,383	65,400	65,276	(2020) 77,100	82,400	88,841	91,400	48%
Santa Clara ^d	102,361	105,402	108,700	110,771	(2010) 129,900	117,400	140,698	142,100	15%
Sunnyvale	131,760	128,902	131,700	133,544	(2025) 154,600	146,900	151,610	159,100	46%
San Mateo County									
East Palo Alto	29,506	32,242	32,700	32,083	(2020) 34,600	39,600	32,712	43,600	100%
Redwood City ^e	75,402	73,114	77,300	76,087	(2000) 70,000	87,100	93,535	122,300	92%
San Mateo ^f	92,482	91,081	94,900	94,315	(2010) 100,700	98,000	See note f	119,800	100%
South San Francisco ^g	60,552	60,735	61,000	61,824	(2020) 67,400	68,500	73,884	71,800	See note g
City and County of San Francisco	776,733	739,426	798,000	798,680	(2020) 811,100	859,200	849,942	924,600	97%

^a ACWD = Alameda County Water District; U.S. Census, ABAG, Department of Finance (DOF), and general plan figures are the combined estimates for Fremont, Newark and Union City.

^b The Newark general plan projection shown is from the 2002 housing element. The general plan (adopted in 1992) projected a buildout population of 51,942 by the year 2007.

^c The general plan population is based on the population shown in the general plan.

^d The general plan figure for Santa Clara is the average of the range projected in the general plan at buildout of 124,800 to 135,000.

^e The SFPUC provides 100 percent of Redwood City's potable water. The remaining 8 percent of demand indicated here is met by recycled water.

^f The city of San Mateo is served by the CWS–Mid-Peninsula District and Estero MID, both of which serve other jurisdictions as well; therefore, the 2030 population assumed by the wholesale customers is not comparable to projections for the city. The SFPUC supplies all of the CWS–Mid Peninsula District's and Estero MID's water.

^g The customer-selected projection is the combined 2030 estimates for the CWS–South San Francisco District (which also serves Colma and a small portion of unincorporated San Mateo County), based on the 2004 demand study, and the Westborough Water District, based on the district's 2005 UWMP. The SFPUC would supply approximately 85 percent of the CWS–South San Francisco District's water supply in 2030 and 100 percent of Westborough Water District's. The other figures are for South San Francisco only.

SOURCES: ABAG, 2004; California Department of Finance, 2006; City of East Palo Alto, 1999a; City of Fremont, 2003a; City of Hayward, 2002a; City of Milpitas, 2002a; City of Newark, 2002; City of Redwood City, 1990; City of San Mateo, 2001; City of Santa Clara, 2002; City of Sunnyvale, 2002; City of Union City, 2002a; U.S. Census Bureau, 2000; U.S. Census Bureau, 2006; URS, 2004, Westborough Water District, 2005.

Newark

Overview

Newark is bordered on all sides by the city of Fremont—to the north, east, and south by developed areas of Fremont, and to the west by salt ponds, wetlands, and other areas of the Fremont baylands (refer to Figure 7.2 in PEIR Chapter 7). According to the Newark General Plan, the city’s land use mix consists primarily of residential neighborhoods, with several key commercial shopping areas and smaller neighborhood commercial areas, industrial uses located primarily along the western edge of the developed part of the city, and salt evaporation ponds and processing facilities on the extreme western side of the city(City of Newark, 1992a).

Water Service

Newark, along with Fremont and Union City, is served by the ACWD. Refer to the description of ACWD under Fremont water service, above.

Growth Trends and Policies

Newark grew most rapidly in the 1960s, with the population nearly tripling (from 9,911 in 1960 to 27,157 in 1970). The population growth continued at a somewhat lower rate in the ensuing decades, increasing by approximately 18 percent in the 1970s and 1980s and 12 percent in the 1990s (City of Newark, 2002). According to the U.S. Census, the city’s population was 42,471 in 2000. Population estimates since 2000 vary somewhat. The U.S. Census Bureau estimates Newark’s 2005 population to be 41,956, a 1.2 percent decrease, whereas the DOF estimates Newark’s total population to be 43,486 as of January 1, 2006, a 2.4 percent increase from 2000 (see Table E.4.1).

Newark does not have an adopted growth management ordinance; policies contained within the general plan are intended in part to manage growth in the city (Slafter, 2005). The Newark General Plan (adopted in 1992) contains goals, policies, and programs intended to direct public and private decision-making and guide future growth and change within the city (City of Newark 1992a). The general plan identifies six study areas with the most potential for change, including areas along the city’s western and southern boundaries as well as an “infill³ area,” where development would result from development of the few remaining vacant sites or change in the existing uses within urbanized Newark.

Buildout under the general plan is expected to occur in 2007 and result in a total population of approximately 51,942 (City of Newark, 1992b). The more recent (2002) housing element projects a population of 49,800 in 2020, as shown in Table E.4.1. The housing element cites ABAG projections that the city will grow by about 13.5 percent by 2010 and at a lower rate (approximately 3 percent) between 2010 and 2020, as sites for new development are depleted (City of Newark, 2002).

³ “Infill” development generally refers to development of individual or small groups of vacant parcels that are surrounded by development.

Union City

Overview

Union City is bordered on the west by a salt marsh that is within the Hayward city limits, on the east by the foothills of the Diablo Range, on the north by Hayward, and on the south by Fremont (refer to Figure 7.2 in PEIR Chapter 7). The city's land use mix consists of approximately 18 percent residential uses, 3 percent commercial, 3 percent public/institutional, 58 percent agricultural and open space, and 9 percent vacant land or miscellaneous uses such as rights-of-way and canals (City of Union City, 2002b).

Water Service

Union City, along with Fremont and Newark, is served by the ACWD. Refer to the description of ACWD under Fremont water service, above.

Growth Trends and Policies

The city grew rapidly from the 1960s through the 1980s, from a population of approximately 7,000 in 1962 to 45,000 in 1983 (City of Union City, 2002c); growth continued through the 1990s, and in 2000 the city had a population of 66,869 according to the U.S. Census. Population estimates since 2000 vary somewhat. The U.S. Census Bureau estimates Union City's 2005 population to be 69,176, a 3.5 percent increase, whereas the DOF estimates Union City's total population to be 71,752 as of January 1, 2006, a 7.3 percent increase from 2000 (see Table E.4.1).

Union City does not have an adopted growth management ordinance. A prior growth management ordinance was revoked about 10 years ago, and since then the general plan has guided growth in the city (Leonard, 2005). The Union City General Plan (2002c) contains goals and policies to guide future development in the city. The general plan identifies several physical constraints that present challenges in planning for future growth, including sensitive wetland habitat near the city's western border, steep topography on the east side of the city, and limited available land. Infill development and redevelopment strategies are therefore identified as the primary means for accommodating future growth. The general plan identifies five business districts, which are generally underutilized or have obsolete uses, that can be redeveloped to help the city achieve housing and job growth goals (City of Union City, 2002c). Buildout under the general plan is expected to occur in 2020 and result in a total population of approximately 80,100 (City of Union City, 2002a).

Hayward

Overview

Hayward is located in western Alameda County, on the east side of San Francisco Bay (refer to Figure 7.2 in PEIR Chapter 7). The city encompasses approximately 61 square miles and is bordered on the west by the Bay, on the east by unincorporated Alameda County and the city of Pleasanton, on the south by Fremont and Union City, and on the north by the unincorporated

communities of San Lorenzo, Ashland, and Castro Valley, and by other unincorporated Alameda County lands.

Water Service

Hayward owns and operates its own water system (which is maintained and operated by the City's Public Works Department Utilities Division) and receives all of its water from the SFPUC. The Hayward water system serves the entire city, except for a small area in the northern part of the city that is served by the East Bay Municipal Utility District (EBMUD). The service area population was 144,500 as of 2005. Residential accounts represent approximately 57 percent of Hayward's current total water demand; commercial and industrial accounts represent about 34 percent; other uses represent 4 percent; and unaccounted-for water represents 5 percent (BAWSCA, 2005).

Growth Trends and Policies

Hayward grew rapidly in the 1950s with the opening of Interstate 580, from a population of 14,000 in 1950 to 72,000 in 1960. Industrial development surged in the 1960s and 1970s, and multifamily residential housing grew through the 1980s; by 1990, the city's population was 111,000. Residential development in the 1990s predominantly consisted of infill development in the form of single-family detached homes on smaller lots and, toward the end of the decade, townhouses or single-family attached units. Today, Hayward is highly urbanized. Although only about 50 percent of the total area within the city limits is in urban use, the remaining land is either baylands (marshes and salt ponds, 9 square miles), rangelands (5 square miles), or under water (within San Francisco Bay, 17 square miles) (City of Hayward, 2002a). Current land uses include 29 percent residential uses, 5 percent commercial, 14 percent industrial, 31 percent institutional, and 21 percent categorized as agricultural/rural, vacant, or other/unknown (City of Hayward, 2002b). According to the Census 2000, Hayward had a total population of 140,030 in 2000. Population estimates since 2000 vary somewhat. The U.S. Census Bureau estimates Hayward's 2005 population to be 140,293, a 0.2 percent increase, whereas the DOF estimated Hayward's total population to be 146,398 as of January 1, 2006, a 4.5 percent increase from 2000 (see Table E.4.1).

Hayward does not have an adopted growth management ordinance; policies contained within the general plan are intended in part to manage growth in the city (Rizk, 2005). The Hayward General Plan (adopted in 2002) serves as a policy guide for determining physical development in the city through 2025. The general plan includes policies that encourage the use of "smart growth" principals in long-range planning and development.⁴ The City of Hayward expects continued growth through 2025, with the general plan guiding a gradual transition of certain areas from lower to higher density. Buildout under the general plan is expected to occur in 2025 and

⁴ The general plan states that, while there is no universally accepted definition of smart growth, smart growth principles generally include those that would foster development that revitalizes central cities and suburbs, supports public transit, and preserves open space and agricultural lands by encouraging more infill development, more concentrated development, and more redevelopment, especially in areas served by transit or close to major employment centers (City of Hayward, 2002b).

result in a total population of approximately 160,300 for the city itself and 190,700 for the Hayward Planning Area, which includes the communities of Cherryland and Fairview (City of Hayward, 2002a). The general plan also includes a policy to evaluate annexing unincorporated islands⁵ and adjoining urbanized county areas within Hayward's sphere of influence (City of Hayward, 2002a; City of Hayward, 2002b).

E.4.2 Santa Clara County

Milpitas

Overview

Milpitas occupies an area of about 13.6 square miles and is located southeast of the south end of San Francisco Bay in northern Santa Clara County (refer to Figure 7.2 in PEIR Chapter 7). It is bordered by Fremont on the north, the foothills of the Diablo Range on the east, and San Jose on the south and west.

Water Service

The City of Milpitas owns and operates its own water system; it receives approximately 65 percent of its water from the SFPUC and the rest from the Santa Clara Valley Water District (SCVWD). In general, residents receive SFPUC water, while the SCVWD primarily serves industrial and commercial areas. Residential accounts represent approximately 43 percent of the city's total water demand; commercial/industrial uses represent 29 percent; other uses account for 23 percent; and unaccounted-for water represents approximately 4 percent of total demand (BAWSCA, 2005). According to the Milpitas general plan, the city's land uses consist of approximately 25 percent residential, 4 percent commercial, 14 percent industrial, 17 percent public facilities and parks, 5 percent transportation facilities (e.g., major streets, freeways, and rail), and 35 percent undeveloped lands (City of Milpitas, 2002a).

Growth Trends and Policies

While the origins of the city of Milpitas go back to the latter part of the 18th century, most of the city has developed in the last 30 years. Between 1980 and 1990 the city grew at an average annual rate of 3 percent, from a 1980 population of 37,820 to 50,690, and between 1990 and 2000 at an average annual rate of 2.2 percent. The city's growth rate between 1980 and 2000 was roughly twice that of Santa Clara County as a whole (City of Milpitas, 2002a). The city's population in 2000 was 62,698 (Census 2000). Population estimates since 2000 vary somewhat. The U.S. Census Bureau estimates Milpitas's 2005 population to be 63,383, a 1.1 percent increase, whereas the DOF estimates Milpitas's total population to be 65,276 as of January 1, 2006, a 4.1 percent increase from 2000 (see Table E.4.1). (The 2002 general plan update projected a population of 67,300 for 2005.)

⁵ By "islands" the general plan refers to pockets of unincorporated area within and adjacent to the City's industrial corridor (Hayward, 2004b).

Milpitas does not have an adopted growth management ordinance. Policies contained within the general plan are intended in part to manage growth in the city (Duncan, 2005). The City has adopted an Urban Growth Boundary (UGB), which delineates the ultimate extent of the urbanized area. The UGB was approved by local voters in 1998 and is intended to remain in place through 2018. According to the housing element (City of Milpitas, 2002b), the UGB does not include provisions related to residential development capacity or growth control and was primarily created as a hillside protection measure. The land use element includes policies related to the UGB (City of Milpitas, 2002a).

The Milpitas general plan, *2002 Update of the 1994 General Plan* (City of Milpitas, 2002a), serves as a policy guide for determining physical development in the city. The 2002 general plan update incorporates the 2002 Midtown Milpitas Specific Plan, which includes mixed-use development and new, very-high-density multifamily development. The revised general plan also includes transit-oriented development and gateway office overlay designations. According to the general plan, the rapid growth in the region has left little room in the flatlands for expansion of the city boundaries. With the Midtown Milpitas Specific Plan, the city's general plan population at buildout is projected to be 77,100 (City of Milpitas, 2002a; City of Milpitas, 2002c).

According to the 2002 housing element, approximately 87 percent of the development capacity to meet Milpitas' identified share of regional housing need is located within developed areas, and approximately 95 percent of the residential development capacity consists of higher density housing sites. The analysis of infrastructure and public services constraints concluded that adequate water supply is not a constraint to developing the city's fair share housing allocation (City of Milpitas 2002b).

City of Santa Clara

Overview

Santa Clara is located at the south end of San Francisco Bay; it is bordered by San Jose to the north, east, and south, and Sunnyvale and Cupertino to the west (refer to Figure 7.2 in PEIR Chapter 7).

Water Service

The City of Santa Clara owns and operates its own water system; the city's service area encompasses nearly 19.4 square miles. Local groundwater is the primary source of potable water. The SFPUC supplies approximately 15 percent of the city's water (URS, 2004; BAWSCA, 2005). According to the Santa Clara General Plan, the city normally receives about 30 percent of its water from the SFPUC and the SCVWD, and the remaining 70 percent from the city's 28 wells (City of Santa Clara, 2002). SFPUC water is delivered to the northern portion of the city, and SCVWD water is delivered to the southwestern portion of the city. Santa Clara also operates a recycled water system; tertiary-treated effluent from a plant jointly operated with San Jose is available for landscape irrigation and certain industrial uses (BAWSCA, 2005).

The northern portion of Santa Clara is predominantly commercial/industrial, and the southern portion is primarily residential (URS, 2004). Residential accounts represent approximately 45 percent of total water demand; commercial/industrial uses represent approximately 46 percent; other uses represent 7 percent; and unaccounted-for water represents 2 percent of total demand (BAWSCA, 2005). As of 2000, land uses consisted of approximately 37 percent residential, 6 percent commercial, 22 percent industrial, 30 percent public facilities (including institutional, educational, parks, and rights-of-way), 4 percent vacant, and 0.2 percent mixed use (City of Santa Clara, 2002).

Growth Trends and Policies

Santa Clara has grown by more than 800 percent since 1950, from a population of 11,702 in 1950 to 102,361 in 2000. The city's fastest growth occurred between 1950 and 1960, when the city experienced a fivefold population increase (to 58,850). Between 1960 and 1980, the population increased by nearly 50 percent (to 87,700). Since then, constraints on available land for residential development have limited new housing development and thus population growth. According to the housing element, the city grew by 7 percent between 1980 and 1990 and by 9 percent between 1990 and 2000 (City of Santa Clara, 2002). The city's population in 2000 was 102,361 (Census 2000), with 135,370 jobs and 39,630 dwelling units in the city (City of Santa Clara, 2002). Population estimates since 2000 vary somewhat. The U.S. Census Bureau estimates Santa Clara's 2005 population to be 105,402, a 3.0 percent increase, whereas the DOF estimates Santa Clara's total population to be 110,771 as of January 1, 2006, an 8.2 percent increase from 2000 (see Table E.4.1).

The 1992 Santa Clara General Plan (with land use and housing element updates in 2002) serves as a policy guide for determining physical development in the city through 2010. The general plan projects continued growth in the city through the development and redevelopment of underutilized properties and recognizes the need for preservation and enhancement of single-family areas. According to the general plan, the city is essentially built out; however, there is potential for development, redevelopment, and expansion at various locations in the city. The general plan identifies a number of sites for new development, including some sites distributed throughout the city and some in specific areas, such as along the El Camino Real corridor and the area northeast of Agnew Road (City of Santa Clara, 2002). Buildout under the general plan is expected to occur in 2010 and result in a total population ranging from 124,800 to 135,000, about 151,280 jobs, and up to 12,556 additional dwelling units (City of Santa Clara, 2002).

Stanford University

Overview

Stanford University comprises approximately 8,200 acres in Santa Clara and San Mateo Counties. Approximately 4,000 acres containing the university's academic, open space, and agricultural land are located in unincorporated Santa Clara County, on the border of San Mateo County. The university is generally bordered on the northwest by Menlo Park, on the southeast, east, and south by Palo Alto, and on the west by Portola Valley and unincorporated Santa Clara County.

Water Service

The university's water system, operated by the Stanford Utilities Division, primarily serves the central campus, which comprises approximately 2,000 acres (3.1 square miles). Approximately 70 percent of the university's water supply—and all of its potable water—is supplied by the SFPUC; approximately 8 percent of total supply is groundwater, and approximately 22 percent is nonpotable surface (lake) water used for irrigation (BAWSCA, 2005).

According to the Stanford University Community Plan, land uses in the central campus area consist of the academic campus, open space, and low- and moderate-density residential uses (Santa Clara County, 2000). Residential uses account for approximately 35 percent of water demand; commercial/industrial uses represent about 24 percent; other uses represent 40 percent; and unaccounted-for water represents approximately 1 percent of demand (BAWSCA, 2005). The current cumulative building area on campus is approximately 12.3 million gross square feet (gsf).

Growth Trends and Policies

Stanford was founded in 1891; most new development at the campus, in the form of academic buildings, support services, and student housing, has occurred since World War II. Since 1960, the building area has almost tripled, from 4,363,375 gsf to 12,294,230 in 2000. Growth since 1960 represents an average annual addition of approximately 198,300 square feet of building area. The campus building area includes approximately 9,760 units of undergraduate and graduate housing. (Stanford University is not shown in Table E.4.1 because most of the data presented in the table do not apply to the university. The Stanford Water Utility serves only the university, whereas ABAG, DOF, and the Census Bureau data are developed for cities and counties.)

The 1995 Santa Clara County General Plan sets goals and overall policy direction for physical development and land use in unincorporated areas of the county. The Stanford Community Plan (adopted as an amendment of the General Plan in 2000) refines the policies of the general plan as they apply to Stanford lands within the county. The community plan identifies policies and establishes various land use designations. The plan emphasizes two basic principles of the Santa Clara County General Plan: compact and efficient urban development, and conservation of natural resources. However, the community plan is not intended to define the long-term development potential of Stanford's unincorporated lands in terms of the amount or location of development beyond the planning horizon (Santa Clara County, 2000).

In the community plan, the concept of urban growth boundaries promoted in the county general plan is applied to the university in the form of an Academic Growth Boundary (AGB). According to the community plan, development at Stanford must occur within the AGB; furthermore, the AGB will remain in the established location for a period of at least 25 years and may only be modified within this period by a fourth-fifths vote of all members of the board of supervisors. In addition to the 25-year time limitation, the AGB cannot be modified until the total building area on the central campus reaches 17,300,000 square feet. At the rate of 200,000 square feet of additional development per year (the historical growth rate at the campus), a total of 5 million square feet would be added in 25 years, for a total building area in the central campus, excluding

housing, of 17,300,000 square feet. The community plan indicates that an additional 2,035,000 gsf of academic and academic support space and 3,018 additional housing units may be constructed through 2010.

Development on the campus is also regulated by a general use permit issued by Santa Clara County. Concurrent with development of the community plan, Stanford University applied to the County to revise its general use permit, requesting an additional 2,035,000 square feet of academic and support space, 2,000 housing units for students, and 350 units for postdoctoral fellows. These facilities would result in the development of 3,485,000 square feet of new building area on the campus between 2000 and 2010. A revised general use permit was issued in 2000.

City of Sunnyvale

Overview

Sunnyvale is located at the southwest end of San Francisco Bay (refer to Figure 7.2 in PEIR Chapter 7). The city is bordered on the north by San Francisco Bay, on the west by Mountain View and Los Altos, on the south by Cupertino, and on the east by Santa Clara and San Jose.

Water Service

The City of Sunnyvale owns and operates its own water system. The service area for the water utility is contiguous with the city limits; however, CWS serves several small areas within the city. The city's water service area encompasses nearly 24 square miles (URS, 2004; BAWSCA, 2005). The 1996 water resources sub-element of the Sunnyvale General Plan indicates that the SFPUC provides approximately 40 percent of the city's water and the SCVWD provides approximately 50 percent; the remaining 10 percent is from local groundwater sources (City of Sunnyvale, 1996). BAWSCA's more recent agency profiles indicate that the SFPUC provides approximately 42 percent, with SCVWD, CWS, and local groundwater providing the balance (BAWSCA, 2005). Residential accounts represent approximately 58 percent of total water demand; commercial/industrial uses represent 23 percent; other uses represent 17 percent; and unaccounted-for water represents 2 percent of demand (BAWSCA, 2005). According to the general plan, the city's land use mix consists of approximately 41 percent residential; 6 percent commercial; 18 percent industrial; 10 percent public facilities; 14 percent baylands, creeks, and sloughs; and 11 percent categorized as "other," which includes public and private schools and religious, military, park, agricultural, and vacant land uses (City of Sunnyvale, 1997).

Growth Trends and Policies

Between 1950 and 2000, Sunnyvale changed from an agricultural area and location for heavy industry to a center for high technology. The city's first surge of growth in the 1950s established its basic development pattern. The city continued to grow rapidly until the mid-1970s. Today Sunnyvale is nearly built out, and infill development, redevelopment, and revitalization activities predominate (City of Sunnyvale, 2002). The city's population in 2000 was 131,760 (Census 2000). Population estimates since 2000 vary somewhat. The U.S. Census Bureau estimates

Sunnyvale's 2005 population to be 128,902, a 2.2 percent decrease, whereas the DOF estimates the city's population to be 133,544 as of January 1, 2006, a 1.4 percent increase over 2000 (see Table E.4.1).

Sunnyvale does not have an adopted growth management ordinance. Growth in the city is managed through the general plan and zoning ordinance (Zarrin, 2006). The Sunnyvale General Plan is the principal policy document guiding future conservation and development of the city. It includes both long-term goals and policies and shorter term "action statements" to guide local government decisions (City of Sunnyvale, 2002). Growth-related policies of the land use and transportation element include promotion of integrated and coordinated local land use and transportation planning, protection of regional environmental resources through local land use practices, and protection of the integrity of the city's residential, industrial, and commercial neighborhoods (City of Sunnyvale, 1997). Buildout under the general plan is expected to occur in 2025 and result in a total population of 154,600 (City of Sunnyvale, 2002).

E.4.3 San Mateo County

City of East Palo Alto

Overview

East Palo Alto is located at the southern end of the San Francisco Peninsula on the populous west side of San Francisco Bay (refer to Figure 7.2 in PEIR Chapter 7). The city is bordered by the Bay to the east, Menlo Park to the north and west, and Palo Alto to the south.

Water Service

East Palo Alto's public water system is operated under contract through the city's Department of Public Works by American Water Company⁶ (City of East Palo Alto, 2006). The city's service area encompasses approximately 2.5 square miles and covers most of the city. The SFPUC is the city's only source of supply. (Two other water companies, the Palo Alto Mutual Water Company and the O'Conner Tract Mutual Cooperative Water Company, which are not SFPUC customers, also provide water to small sections of the city.) Residential accounts represent approximately 68 percent of the municipal water system's total water demand; commercial/industrial accounts represent about 13 percent; other uses represent about 9 percent; and unaccounted-for water represents 10 percent (BAWSCA, 2005). According to the city's general plan, land uses consist of approximately 52 percent residential, 2 percent commercial, 6 percent industrial, 7 percent institutional, and 33 percent open space, conservation resource management, agricultural, or vacant lands (City of East Palo Alto, 1999b).

⁶ Previously, the city's water system had been operated by San Mateo County under the name East Palo Alto Waterworks District; the city took over the water distribution system from the county in 2001.

Growth Trends and Policies

Prior to the city's incorporation in 1983, East Palo Alto was part of unincorporated San Mateo County. The area historically regarded as East Palo Alto was much larger than the city's current area of 2.5 square miles. Between the late 1940s and 1960s, areas previously part of East Palo Alto were annexed to Menlo Park and Palo Alto. Economic activities in East Palo Alto have included farming, ranching, and brick manufacturing. Today, the city has a mix of small industrial, agricultural, and commercial businesses. Since its incorporation, the city has grown dramatically—by 29 percent between 1980 and 1990 (from a population of 18,292 to 23,451) and by 26 percent between 1990 and 2000. However, development of additional housing has not kept pace with the population growth, resulting in an increase in household size from 2.7 people per housing unit in 1980 to 4.2 people per housing unit in 2000 (City of East Palo Alto, 2001). The city's population in 2000 was 29,506 (Census 2000). Population estimates since 2000 are similar. The U.S. Census Bureau estimates East Palo Alto's 2005 population to be 32,242, a 9.3 percent increase, and the DOF estimates the city's population to be 32,083 as of January 1, 2006, an increase of 8.7 percent over 2000 (see Table E.4.1).

East Palo Alto does not have any growth management ordinances in effect (Banico, 2005). The East Palo Alto General Plan (City of East Palo Alto, 1999b) serves as a policy guide for determining the appropriate physical development and character for the city. The general plan identifies infill properties as the site of much of the new development that will occur in the city, and emphasizes redevelopment or renovation of major portions of the community as critical to achieving fiscal stability (City of East Palo Alto, 1999b). East Palo Alto expects continued growth through general plan buildout. Buildout is projected to occur in 2020, with a population of 34,600 (City of East Palo Alto, 1999a).

City of Redwood City

Overview

Redwood City is located in the geographic center of the San Francisco Peninsula, near the southern end of San Mateo County (refer to Figure 7.2 in PEIR Chapter 7). The city is bordered by the Bay to the east, San Carlos, Belmont, and Foster City and unincorporated county land to the north and west, Woodside to the west, and Atherton, Menlo Park, and unincorporated land to the south.

Water Service

Redwood City owns and operates its own water utility and supplies water to portions of Woodside, San Carlos, and unincorporated areas of the county. The city's service area includes about 83,000 residents and covers roughly 35 square miles. Redwood City purchases all of its potable water from the SFPUC (BAWSCA, 2005). The area within the city's boundaries is roughly divided between land and water areas, with 54 percent land area and 46 percent water area. According to the Redwood City General Plan (City of Redwood City, 1990), 46 percent of the city's land area is in residential development, the city's predominant land use; other uses

include public and quasi-public land uses (14 percent), commercial land use (10 percent), industrial land use (6 percent), and streets and rights-of-way (25 percent).

Growth Trends and Policies

At the time San Mateo County was formed, in 1856, Redwood City was the only bayside settlement that resembled a real town, and in 1867 it became the county's first incorporated city. By 1870, the city had a population of more than 700, which nearly doubled by 1880. While the city continued to grow steadily in the ensuing decades, the postwar population influx that occurred throughout California from 1940 to 1960 created the most dramatic growth in Redwood City's history—from 12,453 to 46,290 (City of Redwood City, 1990). During the 1970s and 1980s, changes in industry and housing occurred, with the craft industries of the city's early years giving way to high-technology and information-age industries (City of Redwood City, 1990). The 1990 Redwood City General Plan indicated that the city was expected to reach a population of 70,000 by the year 2000 (Redwood City, 1990, Chapter 4, p. 4-1). The EIR for the Downtown Precise Plan cites ABAG's *Projections 2005* forecasts for the city (not including its sphere of influence) of 87,100 in 2020. The city's population in 2000 was 75,402 (Census 2000). Population estimates since 2000 vary somewhat. The U.S. Census Bureau estimates Redwood City's 2005 population to be 73,114, a 3.0 percent decrease, whereas the DOF estimates the city's population to be 76,087 as of January 1, 2006, a 0.9 percent increase over 2000 (see Table E.4.1).

Redwood City is essentially built out, and future development will be accommodated through infill development, including the redevelopment of industrial sites and development along the El Camino Real corridor. In May 2006, the Planning Commission adopted principals to guide its general plan update (currently underway) and provide the foundation for general plan elements. These guiding principals include (among others) planning for sustainability, which recognizes the city's long-term obligations to future residents and encourages development that conserves natural resources; working to develop attractive, convenient transportation alternatives to the automobile; and designing for active pedestrian and bicycle-friendly streets and public spaces (City of Redwood City, 2006). The City's recently adopted Downtown Precise Plan (City of Redwood City, 2007a) provides for housing in the downtown area that is affordable to a range of incomes, mixed residential and commercial development, and the concentration of retail development in certain areas proximate to civic buildings and activities, so that access to transit and parking, customers, and destination identity for a variety of land uses are shared. The plan is intended to revitalize the downtown area and serve as a tool to help the city meet its goals and achieve sustainable development (City of Redwood City, 2007a). The City Council approved the "moderate intensity" alternative of the plan, which would allow development of 2,500 additional residential units as well as specified amounts of office, retail and lodging in the downtown planning area (City of Redwood City, 2007b). According to the plan's EIR, neither of the development alternatives considered (a maximum intensity alternative and a moderate intensity alternative) would permit buildout totals that were substantially different from buildout allowed under existing zoning, the City expected that achieving permitted buildout totals was more likely to be realized with adoption of the precise plan; (City of Redwood City, 2007c).

Redwood City's Franklin Project Phase I, a development that includes residential units and retail within walking distance of the Caltrain station and downtown area, was the first project to receive a grant from the City/County Association of Governments of San Mateo County (C/CAG) Transit Oriented Development (TOD) Incentive Program. The C/CAG's TOD Incentive Program won the Environmental Protection Agency's National Award for Smart Growth in 2002 (U.S. EPA, 2002).

City of San Mateo

Overview

The city of San Mateo is located in the middle of the San Francisco Peninsula (refer to Figure 7.2 in PEIR Chapter 7). The city is bordered by the Bay to the east, Burlingame to the north, Hillsborough to the west, and Belmont to the south.

Water Service

San Mateo is served by the CWS–Mid-Peninsula District, which is located in central San Mateo County; this water district also serves San Carlos and adjacent unincorporated portions of San Mateo County, including the Highlands and Palomar Park (refer to Figure 7.1 in PEIR Chapter 7). In 2001, the CWS–Mid-Peninsula District served 120,856 residents and covered approximately 17 square miles. All of the district's water is supplied by the SFPUC, as local water storage is not feasible and groundwater of adequate quantity and quality is not available (BAWSCA, 2005).

Growth Trends and Policies

San Mateo's development began in earnest with the establishment of a stagecoach stop along the Old County Road (El Camino Real [Highway 82]) in the 1850s. With the advent of the railroad in the 1860s, the center of city activity shifted to the area along Third Avenue and B Street. The city was incorporated in 1894 and remained a relatively small, rural community until the 1940s. The city grew substantially during World War II and the following years, from a population of 19,405 in 1940 to 69,870 by 1960, and its economic base shifted toward office and retail sectors (City of San Mateo, 1990).

During the 1970s and 1980s, population growth slowed, increasing by only 16,000, while both retail space and office space increased significantly. Retail uses are now largely concentrated at Hillsdale Shopping Center, along El Camino Real, and office uses are concentrated in office parks along the Highway 92 corridor and, to a lesser extent, the downtown area. According to the general plan, these changes have altered the image of San Mateo as a "bedroom community" to a place where people can both live and work as well as an important subregional office retail center (City of San Mateo, 1990).

The general plan characterizes San Mateo as becoming a larger, more diverse, and more complex community, but also as one with a slowing growth rate due to the continued decrease in average household size, limited vacant land, and high local land values. The population of the city and its sphere of influence was expected to increase from an estimated 92,482 in 2000 to 100,700 in

2010 (City of San Mateo, 2001). According to the Census 2000, the city's population in 2000 was 92,482. Population estimates since 2000 vary somewhat. The U.S. Census Bureau estimates San Mateo's 2005 population to be 91,081, a 1.5 percent decrease, whereas the DOF estimates the city's population to be 94,315 as of January 1, 2006, a 2 percent increase over 2000 (see Table E.4.1).

The City of San Mateo does not have growth management policies, as the city is largely built out. Future growth is expected to be accommodated through redevelopment on infill sites (Ring, 2006). An example of such development is the San Mateo Rail Corridor Transit-Oriented Development Plan, which was adopted in 2005. Implementation of the plan is expected to improve access to Caltrain stations and provide higher density housing that will help alleviate some of the measures throughout the Bay Area for both affordable and market-rate housing (City of San Mateo, 2005).

City of South San Francisco

Overview

South San Francisco is located at the northern end of the San Francisco Peninsula (refer to Figure 7.2 in PEIR Chapter 7). The city is bordered by the Bay to the east, Colma to the north, Daly City and Pacifica to the west, and San Bruno to the south.

Water Service

South San Francisco is served by CWS–South San Francisco District, which also serves Colma, part of unincorporated San Mateo County, and a small part of Daly City, and Westborough Water District. CWS–South San Francisco encompasses approximately 11.2 square miles; in 2001, it served a population of 49,207. Land use in the water district service area includes both residential and commercial areas (City of South San Francisco, 1999). In FY 2001/2002 approximately 89 percent of the CWS–South San Francisco's water supply was provided by the SFPUC (BAWSCA, 2005). The remaining water demand in the CWS–South San Francisco service area is met by groundwater supply (City of South San Francisco, 1999). Westborough Water District encompasses approximately 1 square mile; in 2000 it served a population of 13,033 (Westborough Water District, 2005). Land use in the service area is primarily residential with some commercial land uses. In FY 2001/2002, 100 percent of Westborough's supply was provided by the SFPUC (BAWSCA, 2005).

Growth Trends and Policies

Steel mills and other industries began to locate in South San Francisco following construction of the Southern Pacific Railroad line between San Francisco and San Jose (1904 to 1907). When the city incorporated in 1908 it had 1,989 residents and 14 major industries. The city's steel and shipbuilding industries continued to grow through the 1920s and World War II, and helped to spur residential growth. South San Francisco's fastest period of growth was during the war and postwar period; between 1940 and 1960, the population increased sixfold, from approximately

6,000 to over 39,000. This growth, achieved through extensive annexation and residential subdivision, was fueled by continued industrial growth. Almost half of the city's existing housing units were built between 1940 and 1959. In the 1960s, drainage and fill of marshlands made shoreline areas available for development. Over the past 30 years, the city's industrial base has slowly transformed, with warehousing, research, and biotechnology replacing steel production and other heavy industries. Since the 1960s, infill development has been the primary means of accommodating growth and change along major arteries west of Highway 101, although major expansion has occurred in the Westborough area and the area east of Highway 101. South San Francisco contains 8.3 percent of San Mateo County's population (City of South San Francisco, 1999). The city's population in 2000 was 60,552 (Census 2000). Population estimates since 2000 vary slightly. The U.S. Census Bureau estimates South San Francisco's 2005 population to be 60,735, a 0.3 percent increase, whereas the DOF estimates the city's population to be 61,824 as of January 1, 2006, a 2.1 percent increase over 2000 (see Table E.4.1).

The city identifies the Terrabay multi-use development project, on the south slopes of San Bruno Mountain, as its last phase of expansion. Future growth is expected to be limited to redevelopment and a few remaining unincorporated islands within the city. The general plan projects that the city's growth rate will be much slower over the 20-year horizon of the plan than the growth experienced in the 10 years before its publication (in 1999). The general plan forecasts a buildout population of 67,400, although buildout is not necessarily expected to occur within the 20-year horizon of the plan (City of South San Francisco, 1999).

E.4.4 City and County of San Francisco

Overview

San Francisco is located at the northern tip of the San Francisco Peninsula. The city is surrounded by water on three sides: to the west by the Pacific Ocean, and to the north and east by San Francisco Bay. The city is bordered to the south by San Mateo County and the cities of Daly City and Brisbane.

Water Service

The City and County of San Francisco (CCSF) owns its own water system, which is maintained and operated by the SFPUC. The SFPUC is the retail water supplier for all of the city's water users. The SFPUC regional water system meets 100 percent of the city's potable water demand and about 97 percent of total demand. Nonpotable groundwater, which is not linked hydraulically to the SFPUC water system, supplements the city's potable supply and is used for landscape irrigation at Golden Gate Park, the San Francisco Zoo, and along the Great Highway. According to the *City and County of San Francisco Retail Water Demands and Conservation Potential* (Hannaford and Hydroconsult, 2004), in 2000 (the study's base year) residential water use accounted for approximately 57 percent of the city's water use; commercial, industrial, and municipal uses accounted for approximately 33 percent; other uses (which include builders and contractors and docks and shipping) accounted for less than 1 percent (0.3 percent); and

unaccounted-for water represented about 10 percent. For 2005, this distribution of water use was expected to shift slightly, with 56 percent residential use, 35 percent nonresidential, 0.3 percent builders/ contractors and docks/shipping, and 9 percent unaccounted-for water (Hannaford and Hydroconsult, 2004).

Growth Trends and Policies

San Francisco was incorporated as a city on April 15th, 1850. The County of San Francisco and the City of San Francisco were established as separate entities by the state legislature in 1850 and were combined by the legislature in 1856.⁷ At that time, San Francisco's population was approximately 30,000 (CCSF, 2006a; CCSF, 2006b). By 1900, the city had grown approximately tenfold, to 342,782 residents (U.S. Census Bureau, 1995).

The city grew steadily for most of the first half of the 20th century, with the population increasing more than 20 percent each decade from 1900 to 1930. There was little change between 1930 and 1940, and between 1940 and 1950 the city grew by 22 percent, to a population of 775,357. In each of the next three decades the city's population declined somewhat, decreasing by 12 percent overall between 1950 and 1980. By 1980 this downward trend reversed, and the city grew by 7 percent each decade between 1980 and 2000, to a population of 776,733 (an increase of only 0.2 percent above the 1950 population) (U.S. Census Bureau, 1995; U.S. Census Bureau, 2000). Population estimates since 2000 vary somewhat. The U.S. Census Bureau estimates San Francisco's 2005 population to be 739,426, a 4.8 percent decrease, whereas the DOF estimates the city's population to be 798,680 as of January 1, 2006, a 2.8 percent increase from 2000 (see Table E.4.1).

According to the general plan housing element, San Francisco is a "mature built-up city with very few large open tracts of land to develop" (CCSF, 2004). The *Citywide Action Plan* (CCSF, 2006c) "explores comprehensively the issue of how to meet the need for housing and jobs in ways that capitalize upon and enhance the best qualities of San Francisco as a place." Under this plan, the planning department is developing policy initiatives "for supporting and encouraging higher density, mixed-use—primarily residential—infill in selected transit-rich corridors."

In a November 2005 letter to ABAG, San Francisco's interim planning director indicated the CCSF's disagreement with the 2030 population projections contained in ABAG's *Draft Projections 2005* (provided to the CCSF prior to publication). The letter indicated that the CCSF expected less growth than was projected in *Draft Projections 2005*, despite its efforts to implement smart growth principles and increase development densities along major transit corridors (Macris, 2004). According to the CCSF, the forecast of job and household growth presented in its *2002 Land Use Allocation*—which estimates more growth in both jobs and households than forecasted in *Projections 2002*, but less than forecasted in the *Draft Projections 2005*—is a more realistic projection. The *2002 Land Use Allocation* estimates that San Francisco will add 23,144 housing units between 2000 and 2030 (for a total of 373,513, a 13 percent

⁷ When the City and County were combined, the part of San Francisco County south of the city's corporate boundary became part of San Mateo County.

increase) and 151,807 jobs in the same period (for a total of 786,000, a 24 percent increase) (Macris, 2004). The published estimates in *Projections 2005* (of 829,090 jobs and 398,280 households by 2030) (ABAG, 2004) are somewhat lower than those presented in the draft document, but are still greater than estimates presented in San Francisco's *2002 Land Use Allocation*.

E.4.5 Summary of Growth Trends and Policies of Select Jurisdictions

The jurisdictions profiled in the preceding section are a sample of cities in the service area. 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. As the profiles indicate, these cities are largely urbanized, typically experienced their most rapid period of growth in the postwar decades through the 1970s, and are largely built out. Milpitas and East Palo Alto have experienced high rates of growth more recently (over the past 30 years) and are also highly urbanized. On average, San Francisco's population has been stable over the past 50 years. While none of these jurisdictions has adopted growth management ordinances per se, their general plans include policies to manage growth, in some cases including the establishment of urban growth or hillside protection boundaries (or, in the case of Stanford University's community plan, an analogous academic growth boundary). Most of the general plans identify infill development and redevelopment and/or revitalization of previously developed areas (strategies consistent with smart growth policies) as the principal means of accommodating future growth.

In addition to the general plan projections discussed above, Table E.4.1 presents a comparison between the 2030 population projections used for the wholesale customer water demand forecasts and ABAG *Projections 2005* forecasts, for both 2030 and the buildout years for the respective general plans. (Table E.4.1 includes subtotals for Fremont, Newark, and Union City for comparison with the ACWD projection.)

As the table shows, the population projections used for the WSIP water demand projections are reasonably consistent with the population projections in the jurisdictions' general plans, although the stated general plan projection years do not extend to 2030. The general plans of three cities—Milpitas, Sunnyvale, and East Palo Alto—expect more population at buildout than is assumed for the 2030 water demand projections. The general plan projections for the jurisdictions served by the other water customers (that can be compared) are within 11 percent of the population projections used for the water demand forecasts, although the general plan projection years are 2010 or 2020. This comparison suggests that the population growth estimated in the water demand projections for these jurisdictions has largely been addressed in the jurisdictions' general plans, and has been fully addressed in the case of three of the cities.

The projected 2030 population projection used for Hayward in the demand study is about 2 percent higher than that presented in the city's general plan. The 2030 population assumed for San Francisco in the demand study is about 5 percent higher than projected in the city's general plan. The 2030 population assumed for the ACWD demand forecast is about 6 percent higher

than projections in the respective general plans (considering the projections in the Fremont, Newark, and Union City General Plans combined). The demand study projection for Redwood City is about 7 percent higher than that presented in the city's general plan. The population assumed for South San Francisco in the demand study (for CWS-South San Francisco and Westborough Water District, as updated by Westborough Water District's UWMP) is about 8 percent higher than the combined general plan projections of South San Francisco and Colma, which is also served by the CWS-South San Francisco, and the projection used for the Santa Clara demand forecast is about 8 percent higher than the population projected (for 2010) in the general plan.. (The 2030 population for the CWS–Mid-Peninsula District and Stanford University estimated in the demand study are not directly comparable to the growth projected in the San Mateo General Plan and the Stanford University Community Plan.)

The ABAG projections for 2030, which incorporate smart growth assumptions (as discussed in PEIR Section 7.3 and Appendix E.3), are somewhat higher than either the general plan or WSIP demand study projections (see Table E.4.1).

References – Appendix E.4

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APPENDIX E.5

Summary of Planned Growth – Impacts and Mitigation Measures

This appendix supplements information presented in PEIR Chapter 7, Growth Inducement Potential and Secondary Effects of Growth. As discussed in Chapter 7, the environmental impact reports (EIRs) prepared for the general plans, area plans and specific plans of the jurisdictions within the SFPUC service area identify impacts associated with planned growth in the respective jurisdictions and identify measures to mitigate those impacts. **Table E.5.1** summarizes the impacts and mitigation measures identified in the EIRs and CEQA Findings prepared for those planning documents. These environmental impacts are the secondary environmental effects of growth supported in part by the proposed project (see Chapter 7). Table E.5.1 is intended to provide a summary overview of the impacts and mitigation measures identified in the relevant planning document EIRs for jurisdictions served by SFPUC water, and does not purport to reflect the full scope and intent of those EIRs. For a complete discussion of the impacts, please refer to the specific EIRs.

The following EIRs and City Council and Board of Supervisors resolutions were reviewed and are summarized in Table E.5.1. These documents are incorporated by reference into this Draft PEIR, pursuant to CEQA Guidelines 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.

- City of Belmont San Juan Hills Area Plan EIR, State Clearinghouse #86122320 (1988), Western Hills Area Plan EIR, State Clearinghouse #89051615 (1990)
- City of Brisbane 1993 General Plan EIR, State Clearinghouse #93071072 (1994)
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- City of Foster City General Plan EIR, State Clearinghouse #92073017 (1993)
- City of Fremont General Plan EIR, State Clearinghouse #90030675 (1991)
- City of Hayward General Plan EIR, State Clearinghouse #2001072069 (2002)
- City of Menlo Park General Plan EIR, State Clearinghouse #890 124 20 (1994)
- City of Millbrae General Plan EIR, State Clearinghouse #98041090 (1998), Millbrae Station Area Specific Plan EIR, State Clearinghouse #98041091 (1998)
- City of Milpitas Midtown Milpitas Specific Plan EIR, State Clearinghouse #2000092027 (2002)
- City of Mountain View General Plan EIR, State Clearinghouse #91083044 (1992)

- City of Newark General Plan Update Project 2007 EIR, State Clearinghouse #91093071 (1992)
- City of Palo Alto Comprehensive Plan 1998–2010 EIR, State Clearinghouse #96052043 (1997)
- City of Redwood City Downtown Precise Plan EIR, State Clearinghouse #2006052027 (2007)
- City of San Bruno General Plan and EIR (1984)
- City of San Jose General Plan EIR, State Clearinghouse #94023031 (1994)
- City of San Mateo General Plan EIR, State Clearinghouse #89100308 (1990)
- San Mateo County Board of Supervisors Resolution 48639 Adopting Findings Pursuant to Certification of the Final Environmental Impact Report for the San Mateo County General Plan, State Clearinghouse #84042404 (1986)
- City of Santa Clara Resolution No. 5728: A Resolution and Related Findings Certifying a Final Environmental Impact Report and Directing the Filing of a Notice of Determination, General Plan Amendment #32, State Clearinghouse #8908017 (1992)
- Santa Clara County General Plan EIR, State Clearinghouse #94023004 (1994)
- Stanford University Community Plan EIR, State Clearinghouse #1999112107 (2000)
- City of Union City General Plan EIR, State Clearinghouse #2000112009 (2002)

Negative declarations were prepared for the following general plans, specific plans, and general plan elements and therefore are not represented in Table E.5-1:

- Town of Atherton General Plan Revisions (2002)
- City of Burlingame General Plan (1969), Bayfront Specific Plan (2004), North Rollins Road Specific Plan (2004), and Housing Element (2002)
- Town of Colma General Plan (1999)
- City of Daly City General Plan Land Use and Circulation Elements (1987) and Housing Element (2004)
- Town of Hillsborough General Plan (2005)
- Town of Los Altos Hills General Plan (1975)
- Town of Portola Valley General Plan (1998 except for Housing Element, which appears to be 1990)
- City of San Carlos General Plan (1992) and Housing Element (2001)
- City and County of San Francisco General Plan (1998) and Housing Element (2004)
- City of Sunnyvale General Plan Elements: Land Use and Transportation Element (1997), Water Resources Sub-element, and (1996), Housing and Community Revitalization Sub-element (2002)
- Town of Woodside General Plan Housing Element (2003)

TABLE E.5.1
SIGNIFICANT MITIGABLE (S) AND SIGNIFICANT UNAVOIDABLE (U) IMPACTS OF GROWTH IDENTIFIED BY
GENERAL AND SPECIFIC PLAN ENVIRONMENTAL IMPACT REPORTS IN PROJECT AREA

Impact	JURISDICTION																				
	Belmont ^a	Brisbane ^b	East Palo Alto ^c	Foster City ^d	Fremont ^e	Hayward ^f	Menlo Park ^g	Millbrae ^h	Milpitas ⁱ	Mountain View ^j	Newark ^k	Palo Alto ^l	Redwood City ^m	San Bruno ⁿ	San Jose ^o	City of San Mateo ^p	San Mateo County ^q	City of Santa Clara ^r	Santa Clara County ^s	Stanford University ^t	Union City ^u
2000 Population	25,123	3,597	29,506	28,803	203,413	140,030	30,785	20718	62,698	70,708	42,471	58,598	75,402	40,165	894,943	92,482		102,361	100,300		66,869
AESTHETICS																					
Impacts																					
• Alteration of visual setting or degradation of existing views	S	S			S	S		S			S				S, U	S	S			S	
• Impacts on scenic resources, including resources within a scenic highway corridor						S											S				
• Impacts on visual quality due to loss of open space														U							
• Creation of new source(s) of light and/or glare, or incremental increases in light or glare			S			S					S		S							S	S
• Cumulative impacts on visual quality																	U				
Mitigation Measures																					
• Develop, strengthen, and/or implement design and landscaping standards and conduct project-specific design review.	X		X																		
• Implement general plan programs and policies and general plan EIR measures that address visual quality in the planning area. (Such policies and measures may include site planning and design procedures and standards, architectural review, and standards pertaining to landscaping and natural areas.)		X				X		X			X						X				
• Provide incentives, including zoning ordinance density or intensity bonuses, streamlined permitting, and rehabilitation funding, to encourage and support projects offering exceptional design quality or otherwise contributing to the desired level of physical quality in the city.			X																		
• Conduct project-specific environmental review and require mitigation to protect visual character and reduce aesthetic impacts, including impacts on natural resources.			X			X										X				X	
• Implement/require measures to reduce light and glare.			X								X		X							X	X
• Implement general plan policies that address visual impacts from nearby incompatible uses.					X										X		X				
AGRICULTURAL RESOURCES																					
Impacts																					
• Conversion of agricultural land to nonagricultural uses					U						S								S		U
• Cumulative loss of agricultural land																			U		
• Conflicts between agricultural uses and adjacent land uses																			S		
• Impacts of continued grazing and farming on soil or other environmental resources																	S		S		
Mitigation Measures																					
• Implement general plan policies that designate agricultural uses as permitted uses in all open space areas.					X																
• Implement general plan programs and policies that reduce impacts on agricultural soils.											X						X				
• Prepare a cumulative impact analysis of projected losses due to the permanent conversion of south county agricultural lands																			X		
• Evaluate and adopt mechanisms (e.g., impact fees, conservation easements, and purchase of development rights) to offset impacts on prime agricultural lands.																			X		
• Implement recommendations of a study on the development of golf courses in areas zoned for agriculture to reduce impacts.																			X		

S = Significant mitigable impact U = Significant and unavoidable impact X = Mitigation measure identified in Environmental Impact Report

TABLE GROWTH E.5.1 (Continued)
SIGNIFICANT MITIGABLE (S) AND SIGNIFICANT UNAVOIDABLE (U) IMPACTS OF GROWTH IDENTIFIED BY
GENERAL AND SPECIFIC PLAN ENVIRONMENTAL IMPACT REPORTS IN PROJECT AREA

Impact	JURISDICTION																				
	Belmont ^a	Brisbane ^b	East Palo Alto ^c	Foster City ^d	Fremont ^e	Hayward ^f	Menlo Park ^g	Millbrae ^h	Milpitas ⁱ	Mountain View ^j	Newark ^k	Palo Alto ^l	Redwood City ^m	San Bruno ⁿ	San Jose ^o	City of San Mateo ^p	San Mateo County ^q	City of Santa Clara ^r	Santa Clara County ^s	Stanford University ^t	Union City ^u
Implement general plan programs and policies, and measures identified in the general plan EIR, to protect agricultural and prevent its conversion to non-agricultural uses.																			X		
AIR QUALITY																					
Impacts																					
Conflicts with, or obstruction of, the implementation of an applicable air quality attainment plan or congestion management plan																					S
Violation of a stationary source air quality standard or contribution to an existing or projected air quality violation			U																		
Increases in air emissions and/or ozone precursors		U	U				U	U	U		S			U		U	S	U			
Exposure of new sensitive land uses to toxic air contaminant or local odor emission sources										S		S			S						
Periodic construction-related air quality impacts	S		S		S	S		S			S		S		S					S	
Increases in exhaust emissions from traffic	U				U			U					U		U		S				
Cumulative impacts on regional air quality in the Bay Area								U	U	U					U		U				
Mitigation Measures																					
Implement BAAQMD- and EIR-specified control measures to mitigate construction dust and emissions.	X				X	X		X					X								
Participate in and promote local and regional planning efforts to improve air quality.			X							X	X										
Provide site features and implement measures to encourage use of alternative modes of travel (to single-passenger vehicles) and reduce vehicle trips. (Such measures include implementing improvements to bicycle and pedestrian circulation systems and working with local and regional planning and transportation agencies to improve public transit services.)	X	X	X					X	X	X	X		X			X	X	X			X
Implement selected roadway and/or intersection improvements to maximize the efficiency of the circulation system.		X	X				X									X					
Implement general plan measures to reduce soil erosion and associated air quality impacts.																	X				
Implement general plan measures that reduce dependence on automobile use and improve the efficiency of the existing transportation system.																	X				
Reduce negative effects caused by roadways and rail lines on visual quality, air quality and noise.										X											
Require adequate buffers, ventilation systems, and other measures to reduce impacts of odors or toxic emissions.												X									
Implement general plan natural resource chapter policies regarding air quality impacts.															X						
Facilitate mixed-use development and maintain jobs/housing balance.																X					
Reduce diesel emissions.																				X	
BIOLOGICAL RESOURCES																					
Impacts																					
Impact(s) on/loss of special-status animal or plant species		S				S			S		S		S		S		S			S	
Impacts on biological resources due to individual or cumulative impacts on wetlands, riparian habitat, or other sensitive habitat	S	S	S	S, U	S	S		S		S	S	S	S	U	S		S		U	S	
Conflicts with local policies or ordinances protecting biological resources													S		S					S	
Cumulative impacts on biological resources			S																	S	

S = Significant mitigable impact U = Significant and unavoidable impact X = Mitigation measure identified in Environmental Impact Report

TABLE GROWTH E.5.1 (Continued)

SIGNIFICANT MITIGABLE (S) AND SIGNIFICANT UNAVOIDABLE (U) IMPACTS OF GROWTH IDENTIFIED BY GENERAL AND SPECIFIC PLAN ENVIRONMENTAL IMPACT REPORTS IN PROJECT AREA

Impact	JURISDICTION																				
	Belmont ^a	Brisbane ^b	East Palo Alto ^c	Foster City ^d	Fremont ^e	Hayward ^f	Menlo Park ^g	Millbrae ^h	Milpitas ⁱ	Mountain View ^j	Newark ^k	Palo Alto ^l	Redwood City ^m	San Bruno ⁿ	San Jose ^o	City of San Mateo ^p	San Mateo County ^q	City of Santa Clara ^r	Santa Clara County ^s	Stanford University ^t	Union City ^u
• Disruption of wildlife migration or travel corridors																				S	
Mitigation Measures																					
• Negotiate any necessary streambed alteration agreements with the California Department of Fish and Game.	X					X															
• Plant native species for revegetation and landscaping purposes.	X																				
• Implement the San Bruno Mountain Habitat Conservation Plan.		X																			
• Implement general plan policies and programs to protect biological resources.		X			X						X						X				
• Conduct project-specific environmental review and implement mitigation.		X	X									X	X								
• Obtain all applicable resource agency permits prior to development within areas under the jurisdiction of federal, state, or local resource agencies.			X																		
• Coordinate with all applicable resource agencies to ensure that required mitigation protocols and design modifications are incorporated during the early stages of project review.													X								
• Where impacts on special-status species may occur, coordinate with relevant resource agencies as early as possible and substantially complete the consultation prior to or in conjunction with project environmental review.			X																		
• Require project-specific surveys conducted by qualified professionals according to established protocols to determine on-site resources and appropriate site-specific mitigation measures.			X	X		X			X				X							X	
• Protect and preserve open space areas and design any improvements in open space areas to minimize adverse impacts on habitats and other open space values.				X				X		X											
• Exclude development in environmentally sensitive areas that would result in a net loss of significant wetlands.				X																	
• Avoid wetlands and replace them where avoidance is infeasible.																				X	
• Include a program in the general plan to conduct a detailed wetland delineation study of vacant sites to accurately determine the extent of jurisdictional wetlands.								X													
• Maximize open space preservation opportunities in the development review process.								X													
• Protect and restore plant and wildlife habitats.				X						X							X			X	
• Protect wildlife from the hazards of urbanization.										X											
• Implement the identified program to mitigate impacts on California Tiger Salamander.																				X	
• Develop a program to educate the public and landowners about sensitive biotic resources in the area and best management practices for preserving those resources.																			X		
CULTURAL RESOURCES																					
Impacts																					
• Disturbance of historical resource(s)		S	S		S			S	S		S		S, U		S		S			S	
• Disturbance of archaeological resource(s)			S			S		S		S	S		S		S		S	S		S	
• Disturbance of paleontological resource(s)								S		S						S	S			S	
• Disturbance of human remains								S		S						S				S	
• Disturbance of unknown subsurface cultural resources	S	S			S	S						S									
• Cumulative impacts on historical resources																			U	U	
• Cumulative impacts on historical, archaeological, or paleontological resources																	U			S	

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TABLE GROWTH E.5.1 (Continued)
SIGNIFICANT MITIGABLE (S) AND SIGNIFICANT UNAVOIDABLE (U) IMPACTS OF GROWTH IDENTIFIED BY
GENERAL AND SPECIFIC PLAN ENVIRONMENTAL IMPACT REPORTS IN PROJECT AREA

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Mitigation Measures																					
• Implement general plan policies and programs and measures identified in the general plan EIR to protect cultural resources.		X			X	X		X			X	X	X		X		X	X			
• Conduct project-specific review and implement identified mitigation consistent with general plan cultural resource policies.		X	X			X			X				X				X				
• If any cultural resources are found, halt work and protect the site from disturbance until a qualified archaeologist / cultural resources specialist has evaluated the resources and identified appropriate site-specific mitigation.	X					X															
• If human remains are found, halt work and notify the county coroner; implement subsequent specified actions and investigations as applicable, consistent with California Public Resources Code Section 5097.98.						X															
• Identify sensitive paleontological resources prior to commencement of development activities and recover sensitive fossils.			X																		
• Conduct the proposed work consistent with the state and federal standards for historic resources.									X												
• Implement CEQA Guidelines Section 15064.5 provisions for the accidentally discovery of historic or archeological resources.									X												
• Maintain documentation of significant archeological and historical sites.										X											
• Develop standard practices or contingency plans for archeological materials that are unearthed during construction.										X											
• Support the preservation of historic buildings and structures.									X	X						X					
• Implement measures to protect historic, archaeological, and paleontological resources.																				X	
GEOLOGY AND SOILS																					
Impacts																					
• Exposure to earthquake fault rupture hazards						S												S			
• Exposure to hazards from strong seismic ground shaking	S	S	S		S	U		S		S	S							S	U		
• Exposure to seismic-related ground failure, including liquefaction		S	S			S		S			S		S					S			
• Exposure to landslides	S	S				S															
• Exposure to flooding, including flooding as a result of levee or dam failure																S					
• Soil erosion or the loss of topsoil	S	S									S		S				S				
• Cumulative impacts on soil resources																	U				
• Damage to structures or utilities caused by soils with high shrink-swell potential						S															
• Hazards, including architectural and/or structural damage, due to differential settlement								S													
• Exposure of new development on or downslope of unstable slopes to rockfall or landslide hazards	S																				
• Exposure to seismic-, geologic-, and/or flood-related hazards														U	S		S				
• Cumulative impacts associated with exposure to natural hazards																	U				
Mitigation Measures																					
• Prohibit off-road vehicle use and implement an erosion control plan.	X																				
• Prohibit grading during the rainy season (Oct. 15 - April 15).	X																				

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TABLE GROWTH E.5.1 (Continued)
SIGNIFICANT MITIGABLE (S) AND SIGNIFICANT UNAVOIDABLE (U) IMPACTS OF GROWTH IDENTIFIED BY
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• Implement the geologic hazard policy map and engineering geology map, table of geological criteria for development, and related policies and mitigation measures.	X																				
• Implement general plan policies and programs to mitigate potential geologic and seismic hazards.		X			X			X							X		X				
• Implement general plan policies and programs to mitigate impacts on soils.											X										
• Conduct/require site-specific environmental review that characterizes site-specific soils, geology, and seismic conditions, conduct site-specific geotechnical review as applicable, and implement identified measures to mitigate project-specific impacts from expansive or corrosive soils and geologic and seismic hazards.		X	X			X		X					X								
• Use open space easements and other regulatory techniques to prohibit development and avoid public safety hazards in areas where geologic instability or faulting is identified.			X																		
• Adopt and enforce the most recent state seismic requirements and applicable standards for structural design of new development and redevelopment (e.g., the Uniform Building Code and California Building Code).			X			X				X								X			
• Promote disaster preparedness in the community with the disaster simulation program. Adopt a disaster preparedness plan and continue to conduct simulation exercises.			X																		
• Require new development within the Alquist Priolo Special Study Zone to comply with applicable regulations pertaining to fault rupture hazard.						X															
• Determine the expansion potential of clay soils on a project-specific basis. Remove or amend and compact highly expansive soils under new buildings. Drain surface water away from buildings to minimize shrink-swell potential.						X															
• Minimize disruption of vegetation during construction and implement measures to reduce soil movement, in accordance with best management practices.						X															
• Continue programs to educate residents about seismic hazards.										X											
• Develop an ordinance to upgrade unreinforced masonry buildings.										X											
• Continue to update the city's emergency preparedness plan.										X											
• Prohibit reduction in creek capacity, implement flood control measures and the San Mateo Creek capital improvement program, and conduct public information programs.																X					
• Implement County plans and policies to reduce impacts; however substantial property damage and loss of life could occur in a major earthquake.																			X		

HAZARDS AND HAZARDOUS MATERIALS

Impacts																					
• Release of or exposure to hazardous materials		S	S			S		S							S	S	S			S	
• Exposure to the risk of loss, injury or death involving wildland fires		S														S					
• Hazards associated with unreinforced masonry buildings		S																			
• Increased risk of structural fires and the degree of damage sustained from industrial chemical fires			S																		
• Exposure to soil and/or groundwater contamination		S						S	S	U											
• Safety hazard(s) related to aircraft overflights											S										

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TABLE GROWTH E.5.1 (Continued)
SIGNIFICANT MITIGABLE (S) AND SIGNIFICANT UNAVOIDABLE (U) IMPACTS OF GROWTH IDENTIFIED BY
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• Potential impacts related to emergency response											S		S				S				
• Increased exposure to man-made and natural hazards																	S				
• Increased exposure to fire hazard in rural areas																	S				
• Impacts on vegetation, water and wildlife resources from elimination of vegetation to reduce fire hazards																	S				
• Cumulative effects from increased exposure to man-made hazards																	U				
Mitigation Measures																					
• Implement general plan programs and policies that address public safety hazards in the planning area.		X						X			X				X		X	X			
• Conduct project-specific environmental review and implement identified measures to mitigate identified potential hazards.		X	X						X							X		X			
• Implement measures identified in the Precise Plan EIR to reduce traffic impacts and ensure the adequacy of project-level emergency-response provisions.													X								
• Adopt and maintain a disaster preparedness plan including emergency response for accidents involving hazardous materials and promote disaster preparedness in the community.			X																		
• Continue to participate in the National Flood Insurance Administration program and investigate the availability of levee reconstruction funding.			X																		
• For proposed projects within the planning area of the airport, ensure consistency with the Airport Land Use Plan and participate in future amendments to the plan.			X																		
• Cooperate with federal, state, and local agencies to effectively regulate and manage hazardous waste.			X																		
• Prior to development of or in proximity to a reported hazardous material site, implement specified measures, including appropriate site assessment, remediation, and follow-up investigation.						X			X												
• Include programs in the general plan to map and remediate potential hazardous soils sites in the city.								X													
• Implement measures to minimize the risks from the use of or accidental exposure to hazardous materials.										X							X				
• Support NASA/Ames as the future federal operator of Moffett Field.										X											
• Implement a risk management plan.																				X	
HYDROLOGY AND WATER QUALITY																					
Impacts																					
• Degradation of surface water and/or groundwater quality		S	S					S			S							S		S	
• Increases in impervious surfaces and/or alternations to drainage resulting in exposure to flood hazards and/or the need for new drainage facilities		S	U			S	S								S			U			
• Degradation of surface water quality from construction activities and/or post-construction uses						S							S								
• Water pollution from stormwater runoff							U								S						
• Exposure of people and property to flooding						S		S		S							S				
• Increased bank erosion and bed sedimentation, risks of landslides, and impacts on new structures as a result of increased runoff from inadequately designed uphill drainage systems	S																				
• Direct and/or cumulative impacts on the hydrologic regime					S															S	
• Increased demands on groundwater resources											S										

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TABLE GROWTH E.5.1 (Continued)
SIGNIFICANT MITIGABLE (S) AND SIGNIFICANT UNAVOIDABLE (U) IMPACTS OF GROWTH IDENTIFIED BY
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• Flood hazards, including hazards related to potential dam failure											S	S				S					
• Increases in impervious surfaces from cumulative development resulting in increasing frequency and severity of downstream flooding												U								S	
Mitigation Measures																					
• Implement general plan programs and policies that address impacts on drainage facilities and flood control channels and that control erosion and sedimentation.	X	X			X			X			X				X						
• Conduct project-specific environmental review and implement identified mitigation of construction and operational impacts. Include specified requirements such as adherence to best management erosion and sedimentation control practices and calculations to determine the adequacy of site drainage facilities and public facilities.		X				X	X						X							X	
• Require new development projects and substantial redevelopment projects to incorporate as applicable best management practices of the National Pollutant Discharge Elimination System permit and requirements of other applicable plans to control runoff pollutants and sedimentation.			X															X			
• Establish an advisory network of representatives having jurisdiction over the San Francisquito Creek to ensure the community needs for flood control and infrastructure maintenance are met.			X																		
• Identify deficiencies in local storm drainage systems and determine and implement needed improvements and maintenance.			X																		
• Implement general plan policies and programs that protect against dam failure inundation.					X																
• Cooperate with other agencies in preparing plans and developing projects to alleviate flooding potential in newly mapped floodplain areas. Require new developments in mapped 100-year flood zones to provide evidence of flood control protection and compliance with applicable regulations of flood management agencies.						X															
• Reopen the Marsh Road water storage and treatment facility, implement drainage capital improvements, and conduct hydrologic studies.							X														
• Include a policy in the general plan requiring finished floor elevations for new structures to be completed above the 8.2 feet NGVD and requiring other improvements constructed below 8.2 NGVD to be built to withstand temporary inundation.								X													
• Establish pollution control measures that keep pollutants from entering storm drain systems.										X											
• Ensure proper use, storage and disposal of toxic chemicals to prevent soil contamination.										X											
• Implement improvements and policies recommended by the Storm Drainage Task Force.	X																				
• Require ongoing technical evaluations of dam safety and cooperation with relevant entities to implement project-specific mitigation measures included in the technical studies.												X									
• Provide adequate storm drainage systems in new development in coordination with the Santa Clara Valley Water District and the San Mateo County Flood Control District.												X									
• Prohibit reduction of creek capacity.																X					
• Implement flood control measures.																X					

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• Implement the San Mateo Creek Capital Improvement Project.																X					
• Conduct a comprehensive drainage study that includes a survey of maintenance needs for the city's creeks and channels; develop funding, maintenance, and public education programs addressing water quality and flood control issues and develop an enforcement program for illegal dumping in creeks and channels.																X					
• Raise levees to 108 feet.																X					
• Require public notification of flood hazards.																X					
• Implement general plan that reduce exposure to flood hazard.																	X				
• Manage stormwater runoff.															X					X	
• Maintain groundwater recharge.																				X	
• Protect water quality.																				X	
• Support flood control improvements that reduce flood hazards. Regulate the type, location and intensity of land uses within flood-prone areas. Require expansion of storm drainage facilities where needed to serve new development.																		X			
LAND USE & PLANNING																					
Impacts																					
• Conflict(s) with an applicable land use plan, policy, and/or regulation					S			U													
• Land use incompatibilities	S			S	S	S		U		S		S			S	S	S		S		
• Intensification of land uses or substantial changes in land use density, scale, and/or character			S	S	S			U			S				S		S		S		
• Loss of open space or agricultural lands or the premature urbanization of rural areas					S										U		S		S		
• Potential failure or underutilization of neighborhood commercial centers				S																	
• Division of an established community						S															
• Increases in the existing oversupply of jobs							U														
• Visual, traffic and other environmental impacts of constructing a bicycle connection across El Camino Real												S									
• Inefficient land use patterns																	S		S		
• Cumulative land use impacts																	U				
Mitigation Measures																					
• Implement applicable general plan land use programs and policies that address the clustering of development, resource protection, zoning code modification(s), potential impacts of intensified land uses, conflicts between incompatible land uses, impacts on open space, and/or golf course development.	X		X		X			X									X		X		
• Encourage open space dedications and assessment fees.	X																				
• Work with San Mateo and the Mid-Peninsula Open Space District to maintain a buffer between the planning area and Sugarloaf Mountain.	X																				
• Review implementation of the general plan and land use policy map to identify the effect of land development and use in the community on City revenues and costs of providing public facilities and services.			X																		
• Develop a design and improvement plan as part of the City's capital improvement plan.			X																		
• Prepare area or specific plans for neighborhoods identified in the general plan.			X																		

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• Provide adequate resources to enforce the zoning ordinance and other ordinances to achieve the desire level of physical quality in the city.			X																		
• Conduct project-specific environmental review, including design and architectural review as applicable, and implement identified mitigation consistent with general plan land use policies.				X		X					X	X					X		X		
• Monitor commercial and industrial development annually (and prepare a written report every two years) to determine whether land use element policies should be changed.							X														
• Preserve, protect, and enhance the character of residential, retail, and commercial districts and ensure compatibility between the residential, retail, commercial, and industrial districts.										X											
• Preserve mobile home parks, and assure safe construction of mobile and modular housing.										X											
• Ensure that zoning, building regulations and public works requirements are equitable and City processes are efficient.										X											
• Adopt and apply performance standards for review of mixed use developments.												X									
• Construct an at-grade pedestrian/bicycle crossing as specified in the general plan EIR.												X									
• Implement City Concept, Community Development, Aesthetic, Cultural, and Recreational chapter policies of the general plan.															X						
• Prevent incompatible land uses; avoid concentrations of potentially incompatible uses; adopt design policies.																X					
• Establish 20-year growth limits as recommended in the plan's urban growth boundary policy.																			X		
• Deny expansion of commercial development into viable agricultural land and emphasize in-fill to meet these needs (to be implemented by the LAFCO).																			X		
• Implement the appropriate recommendations of the agricultural preserve study																			X		
• Conduct studies and implement recommendations on recreational vehicle park needs and golf course development.																			X		
MINERAL RESOURCES																					
Impacts																					
• Impacts of mineral extraction operations on land, water, air, biological resources																	S				
• Depletion of non-renewable mineral resources																	S				
• Cumulative impacts from the depletion of non-renewable resources and permanent alteration of landforms																	U				
Mitigation Measures																					
• Promote growth management and sphere of influence planning.																	X				
• Maintain the County land use database to monitor land conversion rates, the health of the rural economy, and impacts on resources from land use changes.																	X				
• Implement general plans and policies that require identification of significant mineral resource areas and the buffering of extraction activities from incompatible land uses.																	X				

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TABLE GROWTH E.5.1 (Continued)
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NOISE																					
Impacts																					
• Exposure to or generation of excessive noise levels or groundborne vibration		S	S	S	S	S		S				S	S		S		S	S		S	
• Substantial permanent increase in ambient noise levels				S		S											S				
• Substantial temporary or periodic increase(s) in ambient noise levels						S															
• Exposure of additional residents or businesses to excessive noise levels from aircraft overflights		U																U			
• Exposure of adjacent land uses to noise from future light rail line.															S						
• Short-term noise impacts during construction	S		S			U		S		S			S		S					U	S
• Increased noise levels particularly from vehicular traffic	U	S	S		U	S	U			U	S	S		U	S, U	S					
Mitigation Measures																					
• Implement general plan programs and policies that reduce noise impacts.		X		X				X				X			X		X				
• Implement/require measures to reduce construction noise (e.g., requiring limits on construction hours, use of hospital-grade mufflers on equipment, use of sound barriers or baffles, and/or limits on the number of active building permits issued).	X					X		X					X		X					X	
• Conduct project-level environmental review and implement identified mitigation.		X	X		X	X				X			X			X		X		X	
• Use noise and land use compatibility standards to guide review of development proposals.			X	X	X							X									
• Require all new development to meet general plan and airport land commission noise attenuation standards through building code requirements.																		X			
• Enforce applicable noise insulation standards of the state building code (Title 24) and adopt and enforce local noise ordinances.			X										X								
• Implement specified measures to address traffic noise (e.g., periodic review of truck routes for noise impacts on sensitive land uses, enforcement of vehicle noise standards, limitations on truck operations, and/or installation of noise barriers)	X		X	X			X														
• Encourage other agencies to reduce noise levels generated by roadways, railways, airports, and other facilities.					X																
• Work with Caltrans to quantify and mitigate noise impacts associated with extension of state highways.					X																
• Locate noise-sensitive uses away from noise sources and less sensitive uses closer to noise sources.					X	X															
• Include incremental traffic generated by new development in the analysis of a proposed a project's contribution to traffic noise.						X															
• Evaluate proposed new developments near railroad rights of way for potential vibration impacts and incorporate engineering recommendations in development design.						X															
• Develop a noise abatement mitigation plan.																					X
POPULATION AND HOUSING																					
Impacts																					
• Substantial population and/or job growth in the area					S			U			S							U		U	
• New or increased demand for special housing needs											S										

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TABLE GROWTH E.5.1 (Continued)
SIGNIFICANT MITIGABLE (S) AND SIGNIFICANT UNAVOIDABLE (U) IMPACTS OF GROWTH IDENTIFIED BY
GENERAL AND SPECIFIC PLAN ENVIRONMENTAL IMPACT REPORTS IN PROJECT AREA

Impact	JURISDICTION																				
	Belmont ^a	Brisbane ^b	East Palo Alto ^c	Foster City ^d	Fremont ^e	Hayward ^f	Menlo Park ^g	Millbrae ^h	Milpitas ⁱ	Mountain View ^j	Newark ^k	Palo Alto ^l	Redwood City ^m	San Bruno ⁿ	San Jose ^o	City of San Mateo ^p	San Mateo County ^q	City of Santa Clara ^r	Santa Clara County ^s	Stanford University ^t	Union City ^u
Increased demand for housing and related impacts on housing affordability			S	S	S															S	
Jobs/housing imbalances, oversupply of jobs							S														
Failure to meet population growth projections, resulting in additional population growth in other jurisdictions.																					U
Mitigation Measures																					
Implement general plan programs and policies that address impacts related to population growth and housing demand.			X	X	X			X			X										
Implement regional and local land use, transportation and infrastructure plans designed to accommodate the projected growth and reduce associated environmental impacts.			X																		
Regularly update the employment database to assess actual job development with respect to projections and apprise infrastructure planning agencies of results.					X																
Require affordable housing of all development within the community development agency project area and provide other incentives to encourage development of affordable units.				X																	
Regularly monitor and report to the Planning Commission the amount of commercial and industrial development being permitted, as a basis for considering changes to land use element policies. When development approaches currently projected levels, conduct a traffic analysis as specified to provide a basis for City Council consideration of changes to the land use and transportation and circulation elements.							X														
Implement general plan land use programs and policies that address jobs/housing imbalances.									X												
Identify additional housing sites and condition new academic space on the construction of housing.																				X	
Implement traffic and service mitigation measures.																				X	
Implement general plan air quality policies and programs.																		X			
PUBLIC SERVICES																					
Impacts																					
Increased demand for fire protection services			S		S			S		S	S	S								S	
Increased demand for police protection services			S		S					S	S	S				S				S	
Increased demand for schools, including cumulative demand			S		S	S	U	S		S	S	U							S, U	S	
Increased demand for parks and/or deterioration of parks and recreational facilities from increased use			S		S	S				S	S						S			S	
Increased demand for public services other than fire and police protection, schools, and parks					S					S	S							U			
Overcrowding of city governmental offices and/or inefficient dispersion of city services resulting from the need for additional city personnel					S																
Economic impacts if demands on infrastructure exceed collected development impact fees		S																			
Impacts on existing and demand for new infrastructure															S		S				
Increased demand for public services														S	S						

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TABLE GROWTH E.5.1 (Continued)
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Mitigation Measures																					
• Implement specified general plan programs and policies and mitigation identified in the general plan EIR that address funding for and the provision and maintenance of community services and/or facilities.			X		X			X		X	X	X			X	X			X		
• Impose development impact fees to cover the costs of needed infrastructure.		X			X																
• Conduct project-specific review to assess required levels of public services and implement identified mitigation			X		X										X						
• Cooperate with school districts regarding enrollment projections, the collection of school impact fees, and/or implement other specified measures to provide for and maintain adequate educational services.			X	X	X	X		X										X	X		
• Maintain an emergency preparedness plan to maximize the efforts of emergency service providers and minimize human suffering and property damage during disasters.			X																		
• Encourage regional recreation and parks districts to plan, acquire, and/or construct new recreation and park facilities.						X															
• Encourage the incorporation of park and recreation facilities into major development projects.						X															
• Reopen closed schools, increase the use of temporary facilities, and limit development.							X														
• Implement general plan policies that address increased demands on public services.															X						
• Maintain police and fire services and school capacity.																				X	
RECREATION																					
Impacts																					
• Increased demand for new or expanded parks and/or recreational facilities			S			S						S			S		S				
• Loss and/or degradation of open space				U	S												S			U	
• Cumulative impacts on overused park facilities																	U		U		
• Inefficient or ineffective park and recreation facility operations due to duplicative or ambiguous jurisdictional roles																	S				
• Infringement of other land uses on park lands and natural habitats																	S				
• Impacts of park creation on alternative land uses																	S				
Mitigation Measures																					
• Implement general plan policies and programs to improve, expand, acquire, and/or develop park and recreational facilities			X	X	X										X		X				
• Implement various methods to acquire parkland and improve access to open space and recreational facilities			X																		
• Implement general plan land use and open space policies that address impacts on open space and the protection of sensitive lands.				X	X												X				
• Conduct planning and environmental studies for the expansion or acquisition and construction of parks and recreational facilities to meet increased demand.						X															
• Review development projects to ensure the adequate provision of park facilities.						X						X									
• Cluster development in Lathrop Development District.																				X	
• Encourage the use of less-utilized parks in the County.																			X		
• Implement park improvements and dedicate new trails.																				X	

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TRAFFIC AND TRANSPORTATION																					
Impacts																					
• Increased traffic relative to existing traffic and the capacity of the street system	S	U	U		S					S	U	U		U		U	S	U		S	
• Degradation of levels of service on area roads or highways	U			S, U		U	U		U			S, U	U				S				U
• Increased vehicle delays at area intersections		S							U				S, U							U	
• Increased vehicle delays at intersections in adjacent cities		U																		U	
• Declines of average speeds on individual roadway segments							S													U	
• Cumulative traffic impacts on roadway segments and/or intersections	U								U				S, U				U		U		
• Traffic safety impacts	S											S					S				
• Impacts on parking capacity												S					S				
• Traffic congestion interference with transit service and/or bicycle levels of service												S									
• Constraints on providing for bicycle and pedestrian travel as a result of increased competition for use of roads and highways by motor vehicles																	S				
• The loss of 40 homes for Hillsdale Boulevard widening																U					
• Construction traffic impacts																				S	
Mitigation Measures																					
• Implement general plan and/or local transportation plan programs and policies and measures identified in the general plan EIR to mitigate traffic and circulation impacts.		X	X		X	X				X	X						X				X
• Encourage adjacent jurisdictions to consent to improvements required of project developers.		X																			
• Coordinate planned development in the city with needed improvements to the regional circulation system.			X																		
• Work with transit agencies to improve local transit service, develop new transportation facilities, and encourage public transit ridership.			X	X																	
• Implement measures to encourage the use of alternative modes of travel and reduce vehicle trips.	X		X	X							X						X	X	X	X	
• Coordinate traffic signals, improve intersection capacity, and implement other operational measures to maximize the efficiency of the circulation system.			X						X											X	
• Support and participate in regional transportation planning.			X								X	X					X	X			
• Require project-specific transportation studies and implement identified mitigation measures.			X	X																X	
• Implement Transportation Systems Management Programs.				X												X		X			
• Add various combinations of turn lanes, through lanes, off- and on-ramps, and/or widen lanes at intersections where unacceptable levels of service occur.	X						X		X			X				X					
• Continue to implement the city's traffic safety program and continue to monitor, identify, and implement safety programs at high-accident intersections.												X									
• Implement measures to reduce traffic impacts on local streets.												X								X	
• Participate in regional efforts to achieve jobs/housing balance and traffic improvements.																X					
• Purchase homes at fair market value and assist resident relocation.																X					
• Expand highway capacity to relieve some bottlenecks.																			X		
• Encourage higher densities and supportive uses around transit stations.																		X			

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TABLE GROWTH E.5.1 (Continued)
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Evaluate Zoning Ordinance parking standards to require only the minimum necessary parking.																		X			
Implement policies that require road improvements to increase safety on rural roads.																	X				
Implement parking provisions described in the general plan EIR.												X									
UTILITIES																					
Impacts																					
Need for new or expanded water service or wastewater treatment facilities	S		S	S	S			S	S		S										
Need for new or expanded stormwater drainage facilities											S					S	S				
Increased water demand				U	S										S	U	S				
Impacts on groundwater quality and quantity and the ability of water districts to provide adequate supply																	S				
Potentially inequitable allocation system for excess water and inadequate emergency techniques for water service interruption																	S				
Impacts on biological resources from surface water diversion or impoundment																	S				
Impacts on small water systems																	S				
Cumulative impacts on groundwater or surface waters																	U				
Increased demand for wastewater treatment capacity				S				S					S		S	S	S			S	
Impacts associated with inadequate sewage systems															S		S				
Cumulative impacts related to wastewater generation and management													S				U				
Impacts on landfill capacity					S											U	S	S			
Impacts on water quality, hydrology, biology, public health and safety, visual quality, noise levels, air quality, soil erosion, and traffic associated with landfill operations																	S				
Increased demand for solid waste services				S								S									
Cumulative impacts associated with solid waste management																	U				
Increased demand for public utilities	S									S											
Cumulative demand on drainage facilities outside the city's control												U									
Mitigation Measures																					
Provide additional infrastructure.	X																				
Comply with service provider development requirements.	X																				
Establish a technical network as specified to ensure that the community's utility-related needs are met.			X																		
Review development projects for consistency with water and sewer infrastructure requirements established in approved development plans and agreements.			X																		
Encourage coordination between land use and water supply planning and protection of water supply sources.															X		X				
Implement general plan water supply policies pertaining to the use of wells in urban areas, water supply planning for rural areas, and the encouragement of conservation and reclamation.																					
Encourage the implementation of water conservation measures.			X	X	X			X	X		X				X	X	X			X	
Upgrade the current water distribution system to accommodate required service.			X																		

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• Implement Natural Resource chapter policies to mitigate potential water supply impacts.															X						
• Implement general plan policies that encourage water conservation and recharge in park and recreation facilities.																	X				
• Implement general plan policies to find an alternative disposal site to meet the city's future disposal needs.					X																
• Work with San Mateo to ensure the adequacy of the wastewater treatment plant.				X																	
• Implement general/community plan programs and policies to reduce waste and promote recycling.				X	X							X					X	X		X	
• Implement specified general plan policies and programs that address the adequacy of and improvements to the existing utility infrastructure and the potential for using recycled water.								X	X		X										
• Implement environmental management chapter policies and action programs pertaining to the provision of utilities and urban services.										X											
• Implement measures identified in the Precise Plan EIR to ensure adequate wastewater treatment and transmission capacity.													X								
• Implement general plan policies that require provision of adequate wastewater systems and coordination of wastewater management, land use, and water supply planning.															X		X				
• Improve the wastewater collection system.																				X	
• Work with water districts to secure additional supplies.																X					
• Work with the County to secure permits to use the Apanolio canyon to provide adequate landfill capacity.																X					
• Implement general plan policies that encourage buffering of landfills from more sensitive land uses.																	X				
• Implement general plan policies that address impacts associated with solid waste management.																	X				
• Implement a comprehensive sewer system study and storm drainage system study.																X					
ENERGY																					
Impacts																					
• Large and wasteful increases in energy consumption					U																
• Increased demand for energy, including electricity and natural gas	S		S					S			S						S				
• Increased demand for automobile fuel	S							S													
• Incremental increase in the use of non-renewable energy resources																	S				
• Cumulative energy-related impacts																	U				
Mitigation Measures																					
• Require compliance with California Administrative Code Title 24 (Building Code) energy conservation standards.	X		X					X													
• Encourage project proponents to incorporate energy conservation techniques in proposed projects. Provide brochures with information on energy efficient building and site design at the public counter.			X																		
• Operate construction equipment to avoid unnecessary use of fuel.	X																				
• Promote energy efficient building and site design for all new public buildings, and install energy saving devices in new public buildings and retrofit existing public buildings.	X		X														X				
• Promote retrofit programs to reduce energy usage and reduce emissions associated with energy consumption.			X																		

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TABLE GROWTH E.5.1 (Continued)
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• Implement transportation measures to improve roadway system efficiency and provide for alternative means of transportation.					X												X				
• Implement specified circulation policies concerning public transportation, bicycle, and pedestrian system improvements.								X									X				
• Implement specified general plan policies and programs concerning energy conservation in new and existing housing.								X													
• Expand general plan policies to require all new construction to conform with Title 22 and 24 standards, as well as to incorporate additional prescribed packages of energy saving building strategies as recommended by the California Energy Commission.								X													
• Require extensive landscaping of parking lots with trees to maximize shade and reduce localized warming.								X													
• Implement general plan policies related to the distribution of land use designations to minimize energy demand and maximize energy efficiency.																					
• Implement policies and programs of the general plan open space and conservation element that reduce energy-related impacts.											X										

^a City of Belmont, San Juan Hills Area Plan Environmental Impact Report, State Clearinghouse #86122320, March 22, 1988; Western Hills Area Plan Environmental Impact Report, State Clearinghouse #89051615, June 12, 1990.

^b City of Brisbane, 1993 General Plan Environmental Impact Report, State Clearinghouse #93071072, January 1994a; Resolution No. 94-23 of the City Council Making Certain Findings Regarding the Environmental Impact Report for the 1994 General Plan and Adopting a Mitigation Monitoring Program, June 1994b.

^c City of East Palo Alto, General Plan Final Program Environmental Impact Report, State Clearinghouse #98051028, November 23, 1999a; Final Environmental Impact Report CEQA Findings: City of East Palo Alto General Plan Final Program EIR, November 23, 1999b.

^d City of Foster City, Final Environmental Impact Report on the General Plan Revision for the City of Foster City, State Clearinghouse #92073017, April 1993.

^e City of Fremont, Fremont 1990 General Plan Final Program Environmental Impact Report, State Clearinghouse #90030675, March, 1991a; Resolution No. 8080 of the City of Fremont Adopting an Updated General Plan, Certifying a Project EIR, and Adopting Findings of Fact and a Statement of Overriding Considerations, May 7, 1991b.

^f City of Hayward, General Plan Final Environmental Impact Report, State Clearinghouse #2001072069, January 2002a; City of Hayward Resolution 02-025 Certifying the Program Environmental Impact Report and Adopting the Mitigation Monitoring and Reporting Program, Statement of Overriding Considerations and General Plan, March, 12, 2002b.

^g City of Menlo Park, Final Environmental Impact Report: Amendments to the City of Menlo Park General Plan and to the City of Menlo Park Zoning Ordinance including Policy Document, Background Report, and Land Use and Circulation Elements, State Clearinghouse #890 124 20, October 19, 1994 (includes November 15, 1994 Findings for Project and Final EIR).

^h City of Millbrae, Final Environmental Impact Report for the City of Millbrae General Plan Revision, State Clearinghouse #98041090, October 1998a; Draft Finalized with Addition of Comments and Responses as Adopted by City Council November 24, 1998: Millbrae Station Area Specific Plan Draft Environmental Impact Report, State Clearinghouse #98041091, 1998b.

ⁱ City of Milpitas, Environmental Impact Report for the Midtown Milpitas Specific Plan, State Clearinghouse #2000092027, January 2002a; City of Milpitas, Resolution No. 7150 of the City Council of the City of Milpitas Certifying an Environmental Impact Report for the Milpitas Midtown General Plan Amendment and Specific Plan Project and Adopting Related Mitigation Findings, Findings Regarding Alternatives, A Statement of Overriding Considerations and a Mitigation Monitoring and Reporting Plan Pursuant to the California Environmental Quality Act, March 19, 2002b.

^j City of Mountain View, Final Environmental Impact Report: City of Mountain View 1992-2005 General Plan, State Clearinghouse #91083044, November 1992a; Resolution 15481 series 1992 Certifying the Final EIR for the 1992 General Plan, Adopting the 1992 General Plan Land Use Map and Adopting the City of Mountain View 1992-2005 General Plan, October 29, 1992b.

^k City of Newark, General Plan Update Project 2007 Environmental Impact Report, State Clearinghouse #91093071, June 1992a; Resolution No. 1241 Recommending to the City Council Approval and Certification of the Final Environmental Impact Report for the Newark General Plan Update, Including a Statement of Overriding Considerations and Mitigation Monitoring Program, passed May 26, 1992b.

^l City of Palo Alto, Comprehensive Plan Update Draft Environmental Impact Report, State Clearinghouse #96052043, certified July 1998a; Resolution 7780 Certifying the Adequacy of the 1998-2010 Comprehensive Plan Final EIR and Making Findings Thereon Pursuant to the CEQA and Adopting the 1998-2010 City of Palo Alto Comprehensive Plan and Land Use and Circulation Map, July 20, 1998b.

^m City of Redwood City, Downtown Precise Plan Environmental Impact Report, State Clearinghouse #2006052027, certified March 2007a; Resolution No. 14769 of the City Council of City of Redwood City Making Certain Findings Concerning Mitigation Measures, Adopting a Mitigation Monitoring and Reporting Program, Making Findings Concerning Alternatives, and Adopting a Statement of Overriding Considerations in Accordance with the California Environmental Quality Act for the Redwood City Downtown Precise Plan, adopted March 26, 2007b; Ordinance No. 2308 of the City Council of the City of Redwood City Adopting the Redwood City Downtown Precise Plan and the Moderate Intensity Alternative as the Most Appropriate Maximum Alternative Development Limitation for the Downtown Precise Plan, approved April 24, 2007c.

ⁿ City of San Bruno, 1984 General Plan and Environmental Impact Report, adopted June 25, 1984a; Resolution No. 1984-37 of the City Council of the City of San Bruno Adopting a Modification to the General Plan of the City Including the Following Elements: Noise, Seismic Safety/Safety, Housing, Open Space, Conservation, Scenic Corridors, Circulation, and Land Use, and the Certification of an Environmental Impact Report Pertinent Thereto, June 25, 1984b.

^o City of San Jose, 2020 General Plan Final Environmental Impact Report, State Clearinghouse #94023031, 1994.

^p City of San Mateo, Final Environmental Impact Report: Proposed General Plan Revisions, State Clearinghouse #89100308, June 1990a; Resolution #77 (1990) Certifying the Final Environmental Impact Report Pertaining to the General Plan Revision, and Adopting the Revised City of San Mateo General Plan, July 16, 1990b.

^q County of San Mateo, Board of Supervisors Resolution 48639 Adopting Findings Pursuant to Certification of the Final Environmental Impact Report for the San Mateo County General Plan, State Clearinghouse #84042404, November 18, 1986.

^r City of Santa Clara, Resolution No. 5728: A Resolution and Related Findings Certifying a Final Environmental Impact Report and Directing the Filing of a Notice of Determination, General Plan Amendment #32, State Clearinghouse #8908017, July 1992.

^s County of Santa Clara, General Plan Environmental Report, State Clearinghouse #94023004, November 1994a; Resolution of the Board of Supervisors of the County of Santa Clara Recommending Certification of Final Impact Report, Adopting Related Overriding Considerations and Monitoring Program, and Adoption of the County General Plan, December 20, 1994b.

^t County of Santa Clara, 2000 Stanford University Draft Community Plan and General Use Permit Application Final Environmental Impact Report, State Clearinghouse #1999112107, December 2000a; Resolution of the Board of Supervisors or the County of Santa Clara Certifying the Environmental Impact Report, Making Related Findings, and Adopting a Mitigation Monitoring and Reporting Program for the Stanford University Community Plan and 2000 General Use Permit, December 12, 2000b.

^u City of Union City, Environmental Impact Report for the City of Union City General Plan Update, State Clearinghouse #2000112009, January 2002a; Resolution 2109-08 of the City Council of the City of Union City Adopting the 2002 General Plan Update Making Mitigations and Alternatives Finding and Adopting a Statement of Overriding Considerations and Adopting a Mitigation Monitoring Plan, February 12, 2002b.

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References – Appendix E.5

- City of Belmont, *San Juan Hills Area Plan Environmental Impact Report*, State Clearinghouse #86122320, adopted March 22, 1988.
- City of Belmont, *Western Hills Area Plan Environmental Impact Report*, State Clearinghouse #89051615, adopted June 12, 1990.
- City of Brisbane, *City of Brisbane 1993 General Plan Environmental Impact Report, Volume I: Environmental Setting* (1993) and *Volume II: Draft EIR*, State Clearinghouse #93071072, January, 1994a.
- City of Brisbane, Resolution No. 94-23: A Resolution of the City Council of the City of Brisbane, State of California, Making Certain Findings Regarding the Environmental Impact Report for the 1994 General Plan and Adopting a Mitigation Monitoring Program, June 1994b.
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- City of East Palo Alto, Final Environmental Impact Report CEQA Findings: City of East Palo Alto General Plan Final Program EIR, November 23, 1999b.
- City of Foster City, *Final Environmental Impact Report on the General Plan Revision for the City of Foster City*, State Clearinghouse #92073017, April 1993.
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- City of Hayward, City of Hayward Resolution 02-025 Certifying the Program Environmental Impact Report and Adopting the Mitigation Monitoring and Reporting Program, Statement of Overriding Considerations and General Plan, March, 12, 2002b.
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- City of Millbrae, *Draft Finalized with Addition of Comments and Responses as Adopted by City Council November 24, 1998: Millbrae Station Area Specific Plan Draft Environmental Impact Report*, State Clearinghouse #98041091, 1998b.

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City of Mountain View, *Final Environmental Impact Report: City of Mountain View 1992-2005 General Plan*, State Clearinghouse #91083044, November 1992a.

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APPENDIX E.6

Project Level Impacts of Growth

General plans aim to provide for orderly development within the planning area and incorporate policies to reduce the adverse impacts of such development, as discussed in the WSIP PEIR Chapter 7. Mitigation measures have been identified in the EIRs of adopted general plans to reduce the adverse impacts related to growth (refer to Appendix E, Section E.5, Table E.5.1). As part of WSIP 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 thresholds for large projects contained in SB 610 were used to guide identification of the projects for this assessment.(i.e., 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).

The specific impacts of a project necessarily depend on its particular circumstances, such as the location and nature of the project. Nevertheless, the review of current development projects in the service area and review of impacts and mitigation measures presented in **Table E.6.1** indicates that the impacts of growth are being mitigated consistent with the measures identified to reduce those impacts in the respective general plan EIRs.

The Projects

This appendix summarizes the impacts and mitigation measures identified for the following projects:

- One Quarry Road Residential Project, Brisbane
- Electronics for Imaging, Inc., Vintage Park Development, Foster City
- Elmwood Residential Commercial Development, Milpitas
- Abbott Labs, Redwood City
- Palo Alto Medical Foundation, San Carlos

One Quarry Road Residential Project, Brisbane

The proposed project consists of the redevelopment of an existing quarry for residential and open space uses. The project site is 144.4 acres, including the Guadalupe Valley Quarry and surrounding undeveloped land; it is located northeast of the main ridge of San Bruno Mountain in unincorporated San Mateo County, approximately three-quarters of a mile west of central Brisbane. The project includes subdivision of the site and construction of 148 single-family detached residences, three condominiums totaling 61 townhouses, a main access road, and internal roadways. A 600,000-gallon water tank would be constructed on a bench in the quarry wall, and associated utilities, landscaping, and lighting would be developed to serve the project. The residential development includes a 2.7-acre city park, a 0.29-acre neighborhood tot-lot, and 13.5 acres of common landscaped space. The residential areas would occupy roughly 19 acres plus 16.5 acres of common landscaped area and parks. The remaining land would be divided between relatively undisturbed open space surrounding the residential development (58 acres) and reclaimed quarry slopes (43 acres). Impacts and mitigation measures identified in the One Quarry Road Residential Project EIR are presented in Table E.6.1. Brisbane voters rejected the project in November 2006, when project approval was placed on the city ballot as Measure B. The EIR prepared for the project nevertheless provides a means to compare project-level impact assessment and mitigation with the city's general plan EIR.

Electronics for Imaging, Inc., Foster City

The EIR prepared for this project serves as a master EIR for one project component (a proposed master plan amendment) and a project-level EIR for the other project component (the proposed construction of several phases of the proposed development). The amendment to the Vintage Park Master Plan proposes development of 750,000 to 1,000,000 square feet of space for offices, research and development, and light industry instead of the nearly 1,500 multifamily residential units and 60,000 square feet of support retail space allowed under the current master plan. The project-level development includes construction of three buildings. Impacts and mitigation measures identified in the Electronics for Imaging EIR are presented in Table E.6.1.

Elmwood Residential and Commercial Development, Milpitas

The proposed project consists of a 59-acre residential, commercial, and recreational development surrounding the Santa Clara County Elmwood Correctional Facility east of Interstate 880 and north of Great Mall Parkway in the city of Milpitas. The project includes the development of approximately 680 residential units (315 condominium units, 110 of which would be available for sale to qualified moderate-income households; 165 single-family detached homes; and 203 townhomes), 180,000 square feet of auto mall building space (to accommodate approximately three auto dealerships), six acres of public park (including Hetch Hetchy park/trail improvements, Elmwood Park, and West Able Street Public Park), and approximately 8.4 acres for two private park/recreation areas (one within the single-family home area and one within the proposed condominium area). To accommodate the proposed development, the project also proposes to amend the Milpitas General Plan, the Midtown Specific Plan, and the city's zoning map; it also proposes approval of a planned unit development map, site and architectural plans, and a use

permit for exceptions to development standards. Impacts and mitigation measures identified in the Elmwood EIR are presented in Table E.6.1.

Abbott Laboratories, Redwood City

Abbott Laboratories consists of a master-planned research center at the foot of Chesapeake Drive on Redwood City's bayfront, adjacent to the Port of Redwood City small-boat launch facility and the Stanford Rowing Club. The project proposes to remove salt processing structures and equipment and to construct approximately 541,000 square feet of manufacturing, research and development, and offices in four buildings around a central green space. The project includes an onsite multilevel parking garage, a greenbelt around a portion of the site, and a publicly accessible linear waterfront park; it would also set aside land to construct a replacement facility for the Marine Sciences Institute. The institute would be responsible for the planning and execution of its new facility within the design guidelines established in the project's master plan. The project proposes subdividing the site into eight lots: six for the proposed buildings of the Abbott Laboratories campus, a separate lot for the Marine Sciences Institute, and a common area lot for private roadways, utilities, and landscaping. The project would be constructed in three phases over a 10-year period. Impacts and mitigation measures identified in the Abbott Laboratories EIR are presented in Table E.6.1.

The Palo Alto Medical Foundation–San Carlos Center, San Carlos

The proposed Palo Alto Medical Foundation–San Carlos Center (PAMF–SCC) project involves the closure and demolition of industrial manufacturing facilities, implementation of an approved remedial action plan at the site, and construction of medical facilities. The 18.1-acre project site is located at 301 Industrial Road, northwest of the Holly Street/Highway 101 interchange in east San Carlos. Existing structures at the site include four main buildings, a wastewater treatment plant, a hazardous waste storage area, other smaller structures, and surface parking. Structures occupy approximately 42 percent of the site; areas not covered by structures are paved (except for minor landscaping along the street frontage). Following closure and decommissioning by the current owner, the site would be remediated according to the approved remedial action plan. The RWQCB would be the lead agency overseeing site remediation, with review and concurrence by the Department of Toxic Substances Control and San Mateo County. The proposed medical facility includes a 478,500-square-foot medical building (including a detached 12,500-square-foot central plant), two aboveground parking garages with approximately 1,245 spaces, and a clock tower. The medical building would house a hospital, medical offices, an ambulatory care clinic, and ancillary/supporting uses. The project would occupy approximately 7.2 acres (40 percent) of the site and would increase the area of permeable surface from zero to about 4.5 acres. Impacts and mitigation measures identified in the PAMF–SCC EIR are presented in Table E.6.1.

References – Appendix E.6

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City of San Carlos, *Palo Alto Medical Foundation – San Carlos Center Draft Environmental Impact Report*, State Clearinghouse #2003062086, February 2006.

**TABLE E.6.1
SIGNIFICANT IMPACTS AND MITIGATION MEASURES IDENTIFIED
IN ENVIRONMENTAL IMPACT REPORTS OF RECENT MAJOR PROJECTS IN THE SFPUC SERVICE AREA**

Impact	One Quarry Road Project (Brisbane)	Electronics for Imaging (Foster City)	Elmwood Residential and Commercial Development Project (Milpitas)	Abbott Laboratories (Redwood City)	Palo Alto Medical Foundation (San Carlos)
Aesthetics					
Impacts					
• Negative aesthetic effect or degradation of existing views	S				
• Conflicts with design guidelines previously adopted for the site		S			
• Creation of new source(s) of light and/or glare	S			S	
Mitigation Measures					
• Amend design guidelines as recommended prior to project approval		X			
• Confine illumination to the project site; shield and orient light sources to minimize their visibility from outside the site; complete and submit a photometrics site plan analysis with each of the project's building phases for review and approval by the city's community development services director				X	
• Relocate and reconfigure specified site plan features (water tank, townhouses, and single-family houses) to reduce or eliminate their visual prominence	X				
• Use nonreflective paint and nonglare fixtures	X				
• Provide appropriate structural and/or vegetative screening for sensitive adjacent uses	X			X	
Agricultural Resources					
Impacts – No significant impacts identified					
Air Quality					
Impacts					
• Construction-related air quality impacts (construction vehicle emissions and particulate matter)		S		S	S
• Fugitive dust emissions during construction	S		U		
• Operational air quality emissions from new area and mobile sources					U
• Increased regional air pollutant emissions from traffic generated by the project		U			
• Cumulative impacts on regional air quality in the Bay Area			U		U
Mitigation Measures					
• Implement BAAQMD- and EIR-specified construction dust control measures	X	X	X	X	X
• Provide site features and implement measures to encourage the use of alternative modes of travel (alternatives to private vehicles) and reduce vehicle trips		X	X		X
• Allow only natural gas fireplaces, pellet stoves, or EPA-certified wood-burning stoves; prohibit conventional open-hearth fire places			X		

	One Quarry Road Project (Brisbane)	Electronics for Imaging (Foster City)	Elmwood Residential and Commercial Development Project (Milpitas)	Abbott Laboratories (Redwood City)	Palo Alto Medical Foundation (San Carlos)
Impact					
Use reflective/high albedo roofs and light-colored construction materials to increase the reflectivity of paved surfaces and include shade trees near buildings to shield buildings from the sun and reduce local air temperature and energy demand			X		
Biological Resources					
Impacts					
Impact(s) on sensitive or special-status animal or plant species	S		S		S
Degradation of riparian habitat or other sensitive habitat	S		S		
Impact(s) on protected wetlands, either individually or in combination with known or probable impacts of other activities	S		S		
Conflicts with an adopted habitat conservation plan	S				
Displacement of native plants, including important wildlife food plants, by invasive exotic plants	S				
Disturbance of burrowing owls and/or permanent loss of owl habitat			S		
Disturbance of active raptor nests, the nests of sensitive bird species, or other nesting bird species	S		S		S
Cumulative impacts on nesting birds					S
Mitigation Measures					
Fulfill the city's obligations under the habitat conservation plan in light of the change of site status from an unplanned to a planned parcel	X				
Develop, implement, and monitor a varicolored lupine establishment plan in consultation with U.S. Forest Service	X				
Oversee maintenance of slopes to maximize safety and minimize adverse impacts on butterfly food plants	X				
Construct chain-link fences acceptable to the property owner and the California Department of Fish and Game (CDFG) along the perimeter of developed areas and along access roads to prevent people from entering sensitive habitat areas	X				
Post interpretive signage at specified areas to educate homeowners about San Bruno Mountain habitat and the detrimental effects of exotic plants	X				
Provide new homeowners with the current Open Space and Ecology Committee brochure and make reasonable, ongoing efforts to educate homeowners about exotic plants and the habitat of San Bruno Mountain	X				
Indicate in conditions, covenants, and restrictions attached to individual properties that no pets will be allowed outside the owner's lot unless under the control of a responsible person by leash or other means	X				
Revise grading plan so that stonecrop on the site is outside project's grading limits	X				

Impact	One Quarry Road Project (Brisbane)	Electronics for Imaging (Foster City)	Elmwood Residential and Commercial Development Project (Milpitas)	Abbott Laboratories (Redwood City)	Palo Alto Medical Foundation (San Carlos)
Conduct appropriately timed survey for nesting raptors before removing any eucalyptus trees and for nesting loggerhead shrikes before removing any shrubs; establish a 250-foot buffer around any nests that are found, within which no vegetation will be removed until the young birds have fledged	X				
Indicate in conditions, covenants, and restrictions attached to individual properties that the use on private property of any invasive non-native plant species that could displace butterfly food plants will be prohibited; provide information to the homeowners association and individual homeowners about invasive species; invite homeowners to an informational meeting conducted by a local environmental organization to educate residents about the sensitive environment adjoining the project site, and the potential impact of invasive plant species on butterfly habitat; hold annual meetings between the homeowners association and each homeowner to verify that invasive plants are not being planted; require the homeowners association to remove any invasive plants from areas for which it is responsible	X				
Remove invasive exotic plant species found in both the revegetated and undisturbed areas of the project site; preclude the use of invasive exotic species from landscaping in common areas; and maintain common areas to ensure exotic invasive species are removed	X				
Verify the prepared wetland delineation with the U.S. Army Corps of Engineers; apply for relevant permits, waivers, and certifications for jurisdictional wetlands determined to occur on the site	X				
Develop and implement a mitigation plan to replace the lost watercourse consistent with requirements of the RWQCB and CDFG	X				
Identify the species of gumplant at the site and, if it is a special-status species, include the species in the planting mix used for slope benches	X				
Conduct appropriately timed surveys (to be conducted by a qualified botanist) to determine the presence or absence of special-status plant species; if special-status plants are detected, contact the CDFG and develop appropriate protocols for relocating the plants and conducting future monitoring at the site			X		
Prepare a stormwater pollution prevention plan that specifies measures to minimize impacts on biological resources (in particular special-status fish species) resulting from stormwater runoff			X		
Avoid disturbance of trees and shrubs during nesting season; if construction during nesting season cannot be avoided, conduct preconstruction surveys for nesting birds and implement protective measures if active nests are identified			X		X
Prior to discing for fire or weed control, conduct a burrowing owl nesting/occupancy survey as prescribed by the CDFG; implement appropriate relocation protocols if burrows are identified within project impact area; provide for replacement of habitat with offsite mitigation habitat that has been approved by the CDFG; conduct preconstruction surveys no more than 30 days prior to any ground-disturbing activity			X		

	One Quarry Road Project (Brisbane)	Electronics for Imaging (Foster City)	Elmwood Residential and Commercial Development Project (Milpitas)	Abbott Laboratories (Redwood City)	Palo Alto Medical Foundation (San Carlos)
Impact					
Obtain a nationwide permit from the U.S. Army Corps of Engineers, a streambed alteration agreement permit from the CDFG, and an RWQCB Section 401 water quality certification and/or waiver of discharge requirements prior to filling waters or constructing any facilities in or affecting waters at or near the site			X		
Prior to demolition or construction near drainage channels, install appropriate exclusion fencing to prevent red-legged frogs from entering the site					X
Cultural Resources					
Impacts					
Disturbance of archaeological resources			S	S	S
Disturbance of paleontological resources					S
Disturbance of architectural or historic resources				S	
Disturbance of human remains			S		S
Mitigation Measures					
Monitor future ground-disturbing activities (to be monitored by qualified archaeologist)			X	X	
If any cultural resources are found, halt work in the vicinity until the find has been evaluated by a qualified archaeologist/cultural resources consultant and a mitigation plan has been developed			X		X
If avoidance of the resource is not feasible, prepare and execute a plan for the methodical excavation and documentation of those portions of the site that would be adversely affected; conduct construction activities in the vicinity of the find in accordance with current professional standards and do not recommence until the archaeological work is completed					X
If cultural resources are found, inform project personnel that collecting significant historical or unique archaeological resources discovered during project development is prohibited by law					X
If any human remains are uncovered during future construction activity, halt work and notify the county coroner immediately; if the coroner determines the remains are Native American, contact the Native American Heritage Commission pursuant to state regulations			X	X	X
Provide a photographic record of existing structures and equipment on the project site prior to demolition; submit the photographs to the Redwood City Historic Resources Advisory Committee to be used at the committee's discretion				X	
Geology and Soils					
Impacts					
Exposure to seismic or geologic hazards	S	S	S	S	
Substantial soil erosion or the loss of topsoil				S	
Damage to structures or utilities caused by soils with high shrink-swell potential			S	S	
Location of structures on strata or soil that is unstable or that would become unstable as a result of the project	S				
Exposure of facilities, including buildings, parking structures, and underground utilities, to corrosive soils				S	

	One Quarry Road Project (Brisbane)	Electronics for Imaging (Foster City)	Elmwood Residential and Commercial Development Project (Milpitas)	Abbott Laboratories (Redwood City)	Palo Alto Medical Foundation (San Carlos)
Impact					
Hazards, including architectural and/or structural damage, due to differential settlement	S	S			
Exposure to rockfall hazards	S				
Mitigation Measures					
Conduct earthworks and foundation design in accordance with all recommendations contained in project geotechnical reports	X				
Base grading and foundation design on the anticipated strong seismic shaking associated with a future major earthquake on the San Andreas fault	X				
Prepare and submit to the city for approval an earthquake preparedness and emergency response plan for all public facilities	X				
Prepare an earthquake hazards information document prior to marketing residential units for sale	X				
Reconfigure the proposed townhouse pad to improve fill slope stability; construct fill slopes by excavating a slot key	X				
Limit the differential fill thickness below individual buildings as specified	X				
Conduct a geotechnical investigation to determine the feasibility of placing the water tank at the proposed location; redesign the water storage component of the project to ensure stability of the site and post-earthquake water supply; replace the proposed single tank with three smaller tanks; and reinforce the rock cut slope surrounding the water tanks	X				
Construct an adequate rockfall catchment along the base of the planned final quarry slopes	X				
Incorporate all recommendations of the slope stability analysis into the project	X				
Cut and rebench quarry slopes by mechanical means where rock conditions are suitable for ripping with heavy-duty equipment; where blasting is required, use control methods to minimize over-breaking and loosening of final rock surfaces and to protect worker safety	X				
Install subdrains beneath the deep fills to be put in place in the southeastern portion of the site	X				
Design and construct a retaining wall, catchment basin, or other engineered feature to retain slope debris in areas of mapped landslides; establish a geologic hazard abatement district or other mechanism approved by the city to be responsible for all bench maintenance and slope repair	X				
Comply with all aspects of the California Surface Mining and Reclamation Act regarding approval of land uses that are incompatible with mineral production at the project site	X				
Conduct site-specific geotechnical and soils investigation(s) as specified and incorporate all measures identified to mitigate impacts		X	X	X	
Install cathodic protection system on the project site to protect underground metallic fittings, appurtenances, and piping from corrosion				X	
During construction, comply with erosion and sediment control measures in accordance with local stormwater requirements, construction best management practices, and State Water Resources Control Board National Pollution Discharge Elimination System requirements				X	

Impact	One Quarry Road Project (Brisbane)	Electronics for Imaging (Foster City)	Elmwood Residential and Commercial Development Project (Milpitas)	Abbott Laboratories (Redwood City)	Palo Alto Medical Foundation (San Carlos)
Hazards and Hazardous Materials					
Impacts					
• Hazards resulting from the routine transport, use, or disposal of hazardous materials	S			S	
• Hazards associated with petroleum-contaminated soils and the potential presence of petroleum hydrocarbons and polycyclic aromatic hydrocarbons in the soil and groundwater	S				
• Exposure of construction workers or the public to hazardous materials, including lead-based paint and/or materials containing asbestos	S		S		
Mitigation Measures					
• Assess existing structures for the presence of hazardous materials (assessment to be conducted by a qualified professional); if found, remove and dispose of hazardous materials in accordance with applicable state and federal regulations	X		X		
• Test the ground-mounted electrical transformers for PCBs; if found, remove and dispose of the materials in accordance with state and federal regulations			X		
• Remediate previously identified contaminated soils to below RWQCB risk-based thresholds or thresholds developed by a site-specific human health risk assessment prepared by a qualified professional	X				
• Investigate presence and extent of contaminants in soils and groundwater; coordinate this investigation and remediation with the removal of the underground oil storage tank	X				
• Adhere to existing federal, state, and local regulations regarding management and handling of hazardous materials	X				
• Include an area evacuation and business evacuation plan as part of the business plan submitted to the county health services agency and the city fire department; in conjunction with the fire department, conduct onsite hazardous materials training as needed or at least every 18 months				X	
Hydrology and Water Quality					
Impacts					
• Increases in impervious surface area and/or the alteration of area drainage resulting in flood hazards or the need for new drainage facilities	S	S	S	S	
• Water pollution from stormwater runoff	S			S	
• Placement of structures within a 100-year floodplain			S	S	
• Degradation of surface water quality due to construction activities and/or post-construction uses	S	S	S	S	
Mitigation Measures					
• Design and implement site drainage plan, in accordance with applicable standards and requirements, to address lot grading, paved areas, site facilities, and landscaping; demonstrate adequacy of conveyance structures; and incorporate appropriate filtration and control structures to direct, control, and filter runoff	X	X	X	X	
• Reduce the amount of impervious surface to the extent feasible	X		X		

Impact	One Quarry Road Project (Brisbane)	Electronics for Imaging (Foster City)	Elmwood Residential and Commercial Development Project (Milpitas)	Abbott Laboratories (Redwood City)	Palo Alto Medical Foundation (San Carlos)
• Design detention basins to contain runoff during the design storm event and enhance water quality	X				
• Stipulate in conditions, covenants, and restrictions attached to site properties the manner in which drainage facilities are to be monitored and maintained to sustain conveyance capacity	X				
• Construct new storm drain pipe as specified to alleviate existing flood hazard and accept increased project flows	X				
• Prepare and submit to the city for approval a construction stormwater pollution prevention plan (SWPPP) that includes best management practices to reduce construction impacts on surface water quality	X				
• Prepare and implement a SWPPP that includes best management practices to reduce potential impacts on surface water quality over the life of the project	X			X	
• Prepare and distribute to all potential occupants a water quality information document prior to purchase of the housing units	X				
• Conduct a final floodplain study demonstrating that existing sheet flows through the project will be accommodated without affecting adjacent floodplains more than is allowed by the Federal Emergency Management Agency (FEMA)			X		
• Design and construct residential and commercial structures to conform with applicable city requirements for structures in a floodplain			X		
• Design the new bridge to meet creek flow standards and all other applicable standards of the U.S. Army Corps of Engineers and the city			X		
• Provide storm drain system signs and/or stenciling to discourage illegal dumping into storm drains, catch basins, and/or filled inlets	X		X		
• Implement best management practices to protect water quality, including, at a minimum, erosion control, sediment transfer reduction, and dust control measures			X		
• Require in conditions, covenants, and restrictions for all future residential development: good housekeeping practices for handling potentially harmful material and controls to prevent and reduce pollutant discharge to stormwater for common landscaped areas and open space; material disposal and recycling controls to discourage illegal dumping of unwanted material into storm drains; a prohibition against dumping waste products into storm drains; and maintenance requirements for private streets, parking lots, and storm drain facilities to control and remove pollutants			X		
• Require as a condition of approval for future commercial development that educational flyers and other materials be provided to all owners/tenants to increase understanding of water quality best management practices and ensure that measures are implemented within private and open space areas to control and limit exposure to potential pollutants			X		
• Require that commercial operators be responsible for inspection, maintenance, and repair of sediment and oil filtering devices for the pretreatment of runoff from paved areas			X		

	One Quarry Road Project (Brisbane)	Electronics for Imaging (Foster City)	Elmwood Residential and Commercial Development Project (Milpitas)	Abbott Laboratories (Redwood City)	Palo Alto Medical Foundation (San Carlos)
Impact					
Construct a levee to the specified minimum elevation to satisfy FEMA requirements to prevent 100-year flood water inundation of the project site; conduct a geotechnical investigation as specified to determine whether soil material and compaction would satisfy city levee requirements				X	
Utilize integrated pest management techniques to minimize the use of pesticide sprays as specified by the county pollution prevention program				X	
In addition to compliance with applicable regulations, establish a construction buffer of at least 1 meter along drainage channels within which no construction activities would occur (improvement measure for less-than-significant impact)					X
Land Use and Planning					
Impacts					
Conflict with existing zoning designation		S			
Conflict of parking areas and landscaping with existing utility easement		S			
Conflicts with elements of the general plan					S/SU
Cumulative land use impacts					SU
Mitigation Measures					
Approve requested rezoning prior to project approval		X			
Submit final improvement plans for review and comment to the utility with an easement through the site		X			
Implement the measure identified in the analysis of noise impacts					X
Implement the measure identified in the analysis of transportation impacts to reduce impacts at four specified intersections (cumulative effects at the intersections would not be reduced to a less-than-significant level)					X
Implement the measure identified in the analysis of transportation impacts to reduce mobile-source air pollutants					X
Mineral Resources					
Impacts					
Incompatibility of the project with mineral production at the project site	X				
Mitigation Measures					
Comply with all aspects of the California Surface Mining and Reclamation Act regarding approval of the proposed land use and make appropriate findings regarding the benefits and disadvantages of quarry operations and the benefits to the community of new housing	X				
Noise					
Impacts					
Short-term noise impacts during construction		S	S	S	
Construction vibration from pile driving					U
Cumulative construction noise and vibration					U
Exposure to excessive noise levels (roadway noise and/or stationary noise sources)			S		S

	One Quarry Road Project (Brisbane)	Electronics for Imaging (Foster City)	Elmwood Residential and Commercial Development Project (Milpitas)	Abbott Laboratories (Redwood City)	Palo Alto Medical Foundation (San Carlos)
Impact					
Mitigation Measures					
Implement management practices as specified to limit construction noise (may include limiting construction hours to minimize impacts on nearby uses, use of mufflers on equipment and maintaining equipment in good working order, locating noise sources as far as possible from nearby sensitive receptors, and limiting idling times for equipment and vehicles with internal combustion engines)		X	X	X	X
Use hydraulically or electrically powered impact tools (e.g., jack hammers and pavement breakers) wherever feasible; where use of pneumatically powered tools is unavoidable, use an exhaust muffler on compressed air exhaust and external jackets on the tools themselves where feasible				X	
Establish a process for responding to and tracking complaints pertaining to construction noise				X	
If pile driving would be conducted outside specified hours (consistent with provisions for exceptions), erect plywood barriers as specified on site boundary and hire acoustical consultants to recommend additional site-specific measures to reduce pile-driving noise				X	
Implement vibration abatement strategies to reduce vibration impacts on the adjacent residents					X
Develop a noise attenuation plan to be implemented at the commercial portion of the site; noise control measures in the plan may include construction of noise barriers and site planning to avoid locating noise-generating operations adjacent to residential property boundaries			X		
To reduce parking noise, construct a noise barrier fence along the northern site boundary where it adjoins single-family residences			X		
Conduct acoustic study and implement recommendations, including noise insulation features to ensure interior noise levels do not exceed the specified threshold			X		X
Population and Housing					
Impacts					
Potential conflicts with housing design requirements for persons with disabilities	S				
Conflicts with affordable housing requirements or housing element designation of site for affordable housing	S	S			
Jobs/housing imbalances (and consequent impacts on housing prices, commute times, and other effects)				S	
Mitigation Measures					
Include in site plans units suitable for persons with disabilities	X				
Comply with the city's affordable housing requirements either by providing the appropriate percentage of units affordable to low- and moderate-income households or by paying to the city fees in lieu of affordable housing units	X				
Revise the housing element to provide adequate alternative housing sites, consistent with land use element designations, and remove all text related to providing housing at the project site		X			

	One Quarry Road Project (Brisbane)	Electronics for Imaging (Foster City)	Elmwood Residential and Commercial Development Project (Milpitas)	Abbott Laboratories (Redwood City)	Palo Alto Medical Foundation (San Carlos)
Impact					
Pay the required fee per square foot for Phases 2 and 3 of the project if the city adopts a jobs/housing linkage program requiring such a fee before those phases are developed				X	
Increase the residential development potential in the city through land use and zoning changes				X	
Public Services					
Impacts					
Increased demand for fire protection services	S	S	S	S	
Increased demand for police protection services	S	S	S	S	
Increased use of parks, resulting in physical deterioration and increased maintenance demands			S		
Increased demand for public services other than fire and police protection, schools, and parks	S				
Cumulative increases in demand for police, fire, emergency, and childcare services				S	
Cumulative increases in demand for schools				S	
Mitigation Measures					
Incorporate fire protection design features and equipment as specified for all buildings within 50 feet of wildland; implement a 30-foot firebreak or other fire buffer program approved by the fire chief	X				
Locate and design site structures and infrastructure to ensure adequate access by fire department vehicles and equipment		X			
Fund additional water mains, to be installed by the city, as required by the city fire department to ensure adequate water supply for fire suppression activities				X	
Comply with all applicable requirements of the Uniform Fire Code				X	
Design and light parking structures to reduce auto thefts and burglary		X			
Provide security lighting for the landscaped waterfront perimeter				X	
Provide private security measures, including security personnel, to protect people and property at the site; submit plans for each development phase to the police department for review to identify additional design measures to enhance site security				X	
Increase police staffing levels as indicated and provide for associated vehicles and equipment		X			
Contribute a fair share portion of the costs associated with fire, police, park/landscape maintenance needed to serve the new residential development, as determined by a study to be conducted by the city	X		X		
Use a qualified vector control professional to eliminate ground squirrels and feral cats from the site; submit site landscape plans to the city's vector control unit for review, for the purpose of identifying potential rat harborage areas and/or food sources, and for approval of pest proofing measures contained in the plan	X				
Provide adequate childcare services for the children of project employees; if feasible, provide an onsite childcare facility				X	

Impact	One Quarry Road Project (Brisbane)	Electronics for Imaging (Foster City)	Elmwood Residential and Commercial Development Project (Milpitas)	Abbott Laboratories (Redwood City)	Palo Alto Medical Foundation (San Carlos)
Recreation					
Impacts – See Public Services regarding impacts on parks; no other significant recreation impacts identified					
Traffic and Transportation					
Impacts					
• Impacts related to site access roadways	S				
• Increased traffic relative to existing traffic and the capacity of the street system				U	
• Freeway traffic impacts			U	U	U
• Increased vehicle delays at area intersection(s)		S	S	S	
• Temporary construction impacts on traffic circulation and safety				S	
• Increase traffic safety concerns				S	
• Impacts on parking					S
• Cumulative traffic impacts on roadway segments and/or intersections			U	S, U	U
• Cumulative freeway traffic impacts					S
Mitigation Measures					
• Submit plans for the main and secondary access roads to the city engineer for review and concurrence with city and American Association of State Highway and Transportation Official Standards (recommended measure: design the secondary access road for two-way traffic)	X				
• Pay for signal warrant analyses at specified intersections and contribute fair share of costs of signal(s) determined by the city engineer to be needed			X		
• Working with the city and Caltrans, as applicable, make roadway and/or signal modifications, potentially including installation of turn lanes, combinations of turn lanes and through lanes, or warning signals; widening of lanes at specified intersections; and modification of traffic signal phasing		X		X	
• Contribute fair share of traffic mitigation fees to fund improvements to areas and/or roadways affected by the project			X	X	
• Submit a construction traffic management plan for review and approval by the city's engineering and construction division				X	
• Implement increasingly aggressive measures as part of the proposed transportation demand management (TDM) program				X	
• Implement a TDM program, including specified measures throughout the life of the project, with the objective of achieving the trip reductions specified in general plan Transportation Policy 9					X
• Design the main access driveway to ensure proper operation of the signalized intersection (recommended for a less-than-significant impact)					X
Utilities					
Impacts					
• Need for new or expanded water and/or wastewater treatment facilities	S		S		U

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Impact					
• Need for new or expanded stormwater drainage facilities	S				
Mitigation Measures					
• Provide additional infrastructure	X		X	X	
• Pay pro rata share for the installation of all needed water supply and sewer lines and for pump station improvements	X				
• Integrate water conservation measures and design features into the project's design to reduce overall water demand associated with the project (recommended for a less-than-significant impact)		X			
• Retain public ownership and responsibility for maintenance of onsite water lines, obtain approval from Estero MID for relocation of the water transmission line, and relocate it within water line easements; avoid locating structures or undertaking pile-driving activities in close proximity to water lines unless adequate shoring is provided; and avoid use of special or costly surfacing materials over the public water line easements to reduce the costs for reconstruction if future maintenance work is necessary (recommended for a less-than-significant impact)		X			
• Fund onsite improvements to the existing sewer system or lift station (recommended for a less-than-significant impact)		X			
• Purchase adequate public water system and sewer system capacities for the development; fees for this purpose cover treatment plant operations, sewage collection, and a proportional share of replacement costs for a new sewage pump station			X		
• Obtain nonpotable water supply from the city's planned recycled water program and contribute fair share of the cost of implementing the program; implement the city's landscape guidelines to reduce demand for irrigation water; implement best management practices identified by the California Urban Water Conservation Council; and retain an independent civil engineer or water specialist to monitor actual water use to ensure estimated water demand is consistent with actual demand				X	
• Include water-saving fixtures, appliances, and irrigation systems in site buildings and landscaping, and design landscaping with drought-resistant and other low-water-use plants (recommended for a less-than-significant cumulative impact on water supply)					X
• Purchase from the sewer authority sufficient dry-weather treatment capacity to accommodate the projected increase in sewage generated by the proposed project (to be performed by the city) and reimburse the city for all costs associated with this purchase (to be performed by the project applicant)				X	
• Fund one of three identified sanitary sewer improvement alternatives				X	
• Implement measures to reduce solid waste generation and encourage recycling		X		X	
• Implement measures to encourage the recycling of construction and demolition debris during the construction phase				X	X
Energy					
Impacts					
• Increased demand for energy, including electricity and natural gas				X	

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Mitigation Measures					
Require improvements to conform with all requirements of Title 24 and the Uniform Building Code to reduce energy demands (recommended for a less-than-significant impact)		X			
Implement the specified energy conservation measures, including use of energy-efficient heating, cooling, and lighting fixtures				X	

SOURCES: City of Brisbane, 2001; City of Foster City, 1997; City of Milpitas, 2004; City of Redwood City, 2004; City of San Carlos, 2006.