14. CITY OF PALO ALTO

AGENCY OVERVIEW

The City of Palo Alto was incorporated on April 23, 1894, and became a charter city on July 1, 1909. Palo Alto is a full service city providing a range of services including: planning and community environment (planning, transportation, building inspection and code enforcement); police protection including animal control; fire protection; libraries; community services (arts and sciences, human services, community centers, art in public places, open space, parks, golf course, and recreation); and public works (public facilities, streets, sidewalks, street trees, parking lots, and storm drainage). City services (including wastewater, solid waste, parks and recreation, storm water drainage, law enforcement, and libraries) were studied in the October 2007 Northwest Santa Clara County Service Review.

The City has an integrated Utilities Department, and is the only city owned utility in California that operates its own electric, fiber optic, natural gas, water, and wastewater services. Palo Alto has been providing utility services to residential and business customers within the City since 1896. Water services were studied as part of the Countywide Water Service Review in June 2005.

Type and Extent of Services

Services Provided

The Water Division of the Utilities Department provides drinking water to residential, commercial, industrial and institutional customers within the City. The Water Division oversees water quality, water conservation, system maintenance, water distribution system extensions for new development, and backflow prevention. The recycled water program is the responsibility of the Public Works Department and is presently in collaboration with the Utilities Department who are spearheading the efforts in pursuing an EIR to expand the recycled water service. Palo Alto has a water conservation program for both residential and commercial customers, is a signatory to the California Urban Water Conservation Council (CUWCC) best management practices, and is supported by the Santa Clara Valley Water District (SCVWD) water conservation program.

The City of Palo Alto has two sources of potable water, and one recycled water source. Potable water is obtained from the San Francisco Public Utilities Commission (SFPUC) Regional Water System, and from emergency stand-by wells. Recycled (non-potable) water for irrigation purposes is produced at the Palo Alto Regional Water Quality Control Plant (RWQCP).

Service Area

The City's water service area includes all water service customers within the city limits with the exception of the open space areas (Arastradero Preserve, Foothills Park, Foothill Open Space Preserve, Los Trancos Open Space Preserve, and Monte Bello Open Space Preserve). Stanford University, adjacent to the City, has its own water system. There are no water service connections outside the city limits.

Services to Other Agencies

Palo Alto does not provide potable water to any other agency. The Palo Alto RWQCP provides recycled water to the RWQCP itself, the Palo Alto Golf Course, the Palo Alto Duck Pond, Emily Renzel Marsh, Greer Park, and the North Bayshore Area in Mountain View. Recycled water is also provided via water trucks to construction sites for dust suppression.

Contracts for Water Services

The City contracts with City and County of San Francisco for treated potable water.

Collaboration

The City collaborates with the Bay Area Water Supply and Conservation Agency (BAWSCA); serves on the SFPUC-BAWSCA Water Quality Committee, the SCVWD-San Jose Water Company Emergency Management Sub-committee, the Northern California Pipe Users Group (PUG), the Water System Distribution Roundtable, the SCVWD Groundwater Committee, and the BAWSCA Technical Advisory Committee.

Boundaries

The Palo Alto water service boundary is the same as the City Limits. The present bounds encompass approximately 25.8 square miles. Palo Alto is located within the Santa Clara Groundwater Sub-basin.

ACCOUNTABILITY AND GOVERNANCE

The City operates under a city council-city manager form of government, with a nine-member City Council elected at-large and a City Manager appointed by the City Council.

Council Members are elected to four-year terms. The City Charter limits Council Members to serving no more than two consecutive terms. The Mayor and Vice Mayor are selected by the Council to serve one-year terms. Current member names, positions, and term expiration dates are shown in Figure 14-1.

The City Council meets on the first three Mondays of each month in the City Council Chamber. Agendas are posted on the City website, at King Plaza in front of City Hall, and published in the 'Palo Alto Weekly.' Agendas, minutes and reports are available on the City website.

Figure 14-1: City of Palo Alto City Council

City of Palo Alto				
Utilities Department Contact Information				
Contact:	Romel Antonio, Senior Project Engineer			
Address:	1007 Elwell Court (P.O. Box 10250) Palo Alto, CA 94303			
Telephone:	650-566-4518			
E-mail/Website:	romel.antonio@cityofpaloalto.org/www.cityof paloalto.org			
City Council				
Member Name	**Position**	**Term Expiration**	**Manner of Selection**	**Length of Term**
Pat Burt	Council Member	December 2012	Elected At-large	4 years
Sid Espinosa	Mayor	December 2012	Elected At-large	4 years
Karen Holman	Council Member	December 2014	Elected At-large	4 years
Larry Klein	Council Member	December 2014	Elected At-large	4 years
Gail A. Price	Council Member	December 2014	Elected At-large	4 years
Greg Scharff	Council Member	December 2014	Elected At-Large	4-years
Greg Schmid	Council Member	December 2012	Elected At-Large	4 years
Nancy Shepherd	Council Member	December 2014	Elected At-large	4 years
Yiaway Yeh	Vice Mayor	December 2012	Elected At-large	4 years
Meetings				
Date:	First three Mondays of each month at 7:00 PM			
Location:	City Council Chamber, City Hall, 250 Hamilton Avenue, Palo Alto			
Agenda Distribution:	Posted on the City website and at King Plaza in front of City Hall, and published in the 'Palo Alto Weekly.'			
Minutes Distribution:	Available on the Agendas/Minutes/Reports page of the City website; along with agendas and reports.			

The Utilities Advisory Commission (UAC) is charged with providing advice to the City Council with respect to acquisition and development of electric, fiber optic, gas and water resources; review of joint projects with other public or private entities which involve

electric, fiber optic, gas, water resources, or wastewater collection services; environmental implications of electric, fiber optic, gas, water projects or wastewater collection services; and conservation and demand management. The Commission is composed of seven members appointed by the City Council for three year terms. The UAC meets at 7:00 PM on the first Wednesday of each month.

The Utilities Department webpage offers a variety of information on the Department's primary functions of electric, fiber optic, water, gas, and wastewater collection. Water utility information is presented through a 'frequently asked question' (FAQ) format on the Utilities Department webpage. Links are readily accessible to the 2010 Urban Water Management Plan, Annual Water Quality Reports, current projects, and the Water Conservation programs. A detailed contact list of personnel is not provided, but inquiries can be phoned in to the Utilities Operations Division or Customer Support Services. An electronic complaint form is not available on the website.

If a customer is dissatisfied with the City's water services, that customer may write a letter to the Assistant Director of Utility Operations or call the Customer Support Services office. In calendar year 2009, there were a total of 40 water-related complaints; 17 for odor/taste, 12 for color, zero for turbidity, nine for pressure, and two for suspended solids. These complaints accounted for 0.20 percent of the 20,238 metered customers served.

The City of Palo Alto demonstrated full accountability and transparency in its disclosure of information and cooperation with Santa Clara LAFCO. The Water Division responded to the questionnaires and cooperated with all document requests.

MANAGEMENT AND STAFFING

Daily operations of the Utilities Department are under the direction of the Director of Utilities, who reports directly to the City Manager. As an integrated electric-fiber optic-water-gas-wastewater operation, the Utilities Department has a total of 251.11 full time equivalent (FTE) positions organized into five major functions: Utilities Administration; Electric and Water-Gas-Wastewater Engineering; Electric and Water-Gas-Wastewater Operations; Customer Support Services; and Resource Management. The Water Division has a total of 45.65 FTE positions dedicated to the Water Enterprise Fund, as detailed in Figure 14-2.

Figure 14-2: Water Division Staff Allocation

Position	FTE	Position	FTE
Administration		Utility Account Rep	1.0
Director of Utilities	0.3	Senior Resource Planner	0.3
Communications Manager	0.3		
Compliance Manager	0.3	Electric and WGW Operations	
Administrative Assistant	0.3	Assistant Director Utility Operations	0.3
Senior Administrator	0.3	Manager of Utility Operations – WGW	0.3
Senior Business Analyst	0.6	Coordinator – Utility Safety & Security	0.3
Program Assistant	0.6	Administrative Associate II	0.3
		Heavy Equipment Operator	2.0
Electric and WGW Engineering		Utility Locator	0.5
Assistant Director Utility Engineering	0.3	Coordinator Utility Projects	1.0
Engineering Manager - WGW	0.3	Supervisor – WGW	1.6
Utility Engineering Estimator	0.5	Supervisor Water Transmission	1.0
Engineering Tech III	0.3	Senior Water System Operator	2.0
Administrative Associate II	0.3	Restoration Lead	0.3
Business Analyst	0.5	Maintenance Mechanic – Welding	0.8
Senior Project Engineer	1.0	Utility Installer/Repairer	4.0
Project Engineer	2.0	Utility Installer/Repairer – Lead	1.25
Engineer	1.0	Water System Operator II	3.5
Inspector, Field Services	1.0	Water Meter Cross Connection Tech	3.0
		Inspector, Field Services	0.3
Customer Support Services		Field Service Representative	1.5
Asst Dir Utility – Customer Support	0.3	Senior Field Service Representative	0.5
Manager – Customer Services/MR	0.3		
Administrative Associate II	0.7	Resource Management	
Manager – Utility Market Services	0.3	Assistant Director Utility Resource Mgmt.	0.25
Senior Market Analyst	0.3	Senior Resource Planner	1.15
Customer Service Specialist - Lead	0.7	Resource Planner	0.2
Customer Service Rep	1.5	Administrative Associate II	0.2
Customer Service Specialist	0.7	Manager - Utility Rates	0.3
Utility Credit/Collection Specialist	0.3		
Meter Reader - Lead	0.3		
Meter Readers	2.0		
Utility Key Account Rep	0.5	**Total**	**45.6**

Formal performance evaluations of all employees are conducted annually, with less formal evaluations every four months. The probation period for new employees is six months, with evaluations at the end of probation. The agency tracks the employees' workload through the 'Microsoft Project' program, work logs, and service requests.

Operational efficiencies are being improved through the Geospatial Design and Management Solution project, which will place all data for electric, water, gas, wastewater, fiber optic, traffic signal, and street light utilities on a single asset management platform using the existing GIS data base. This will allow the various utilities to interface a computer mapping system, including water system improvements and water line replacement

project. In FY 10-11, the Utilities Department exceeded all of its electric, natural gas and water efficiency goals.

The City adopted the 2010 Urban Water Management Plan on June 13, 2011, and prepared a Recycled Water Facility Plan in March 2009. The Water Shortage Implementation Plan was adopted in January of 2010. Capital improvements are considered over a five-year planning period as part of the annual budget process.

POPULATION AND PROJECTED GROWTH

The 2010 United States Census population for Palo Alto is 64,403. The average household size is 2.41 per the United States Census. Adjacent to the City is the Stanford census designated place (CDP) which has a 2010 United States Census population of 13,809 and an average household size of 1.96 per the United States Census.

ABAG projects that the population of Palo Alto will increase to 84,000 by the year 2035, a 30.4 percent increase over the twenty-five year period.

The Palo Alto Comprehensive Plan (General Plan) 1998-2010 addresses policies and programs (including best management practices) for Water Resources as part of the Natural Environment Element. The City is currently amending its Comprehensive Plan to cover the period 2010-2020.

FINANCING

Financial Adequacy

The Water Fund is an enterprise fund in which charges for services generate the necessary funds to provide the services. No General Fund monies are utilized by the Fund. Due to increased costs associated with increasing wholesaler rates and capital improvements, recent revenues generated by the Water Fund have not equaled expenditures. Expenditures are anticipated to continue to increase due to a continued trend of increase water supply costs and planned capital projects. The City's FY 11-12 budget narrative indicated that rate increases to water customers are expected to increase revenues so as to equal expenditures.

Revenue Sources

In FY 08-09, the Water Fund generated $27.1 million, in FY 09-10 the Fund generated $26.2 million, and in FY 10-11 the Fund was projected to generate $31.3 million. With a new rate increase in place, FY 11-12 revenues are expected to be in excess of $33 million.

In FY 10-11, the Water Fund generated in excess of $31 million in revenues from the sources shown in Figure 14-3.

Figure 14-3: Funding Sources

Net Sales	$ 27,248,635	86.9%
Interest Income	1,050,100	3.3%
Other Income	3,074,144	9.8%
Total	$ 31,372,879	100%

As indicated above, significant revenues are derived from water sales. The City's capital improvement program also contributes significant funds as described below.

Rates

A significant portion of the Water Fund's total costs are related to the cost of purchased water. Water supply costs increased by about 38percent in FY 11-12 and are expected to double by 2016. These increases are the result of the infrastructure projects undertaken by SFPUC to upgrade the regional water distribution system at a cost of $4.6 billion. Based on wholesale water rate projections by SFPUC, costs will increase an average of 10 percent per year over the next six years.

As a result of these wholesale price increases, the City is proposing to raise the water rate charge to its customers beginning October 1, 2011. For the nine month period (October-June) a system-wide increase of 20.9 percent is being proposed. The City has an 'inclining block tier' rate structure which charges proportionally higher water rates for higher water users. One objective of this rate structure is to promote efficient water use.

Rates proposed by the City Council for residential customers for implementation effective on October 1, 2011 are shown in hundred cubic feet (CCF)107 in Figure 14-4.

[107] One hundred cubic feet (CCF) equals 748 gallons.

Figure 14-4: Water Use per Month

	Rates	Increase	% Increase
0 to 6 CCF	$3.60 per CCF	– $0.349 per CCF	– 8.8%
7 to 29 CCF	$6.08 per CCF	$0.456 per CCF	8.1%
Over 29 CCF	$7.64 per CCF	$2.016 per CCF	35.8%

In addition, the monthly meter charge for a residential 5/8 inch meter will increase from $5.00 to $10.00. A small residential customer with a 5/8 inch meter that uses 6 CCF per month will see a monthly water bill increase from $28.69 to $31.60, a $2.91 increase (10.1 percent). A medium residential customer who users 14 CCF will see an increase from $72.10 to $80.24, an $8.23 increase (11.4 percent); while a large residential customer who uses 35 CCF per month will see an increase from $190.12 to $217.28, a $27.17 increase (14.3 percent).

Based on the anticipated costs for wholesale water, it is expected that monthly water bills will continue to increase in the foreseeable future.

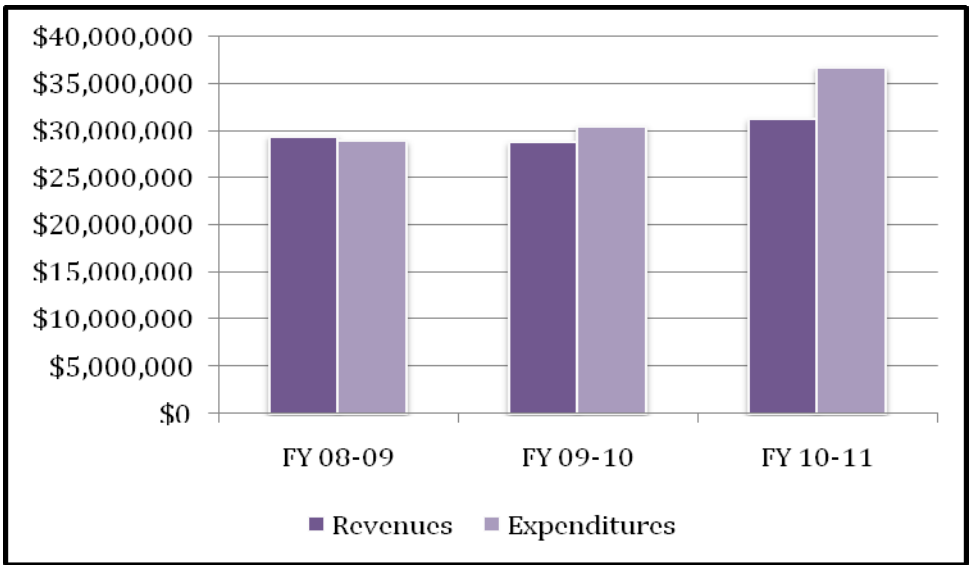
Expenditures

For FY 11-12, the Water Fund expenditure (including capital improvement projects) is expected to total $36.6 million, which is 8 percent of the City's total expenditures (all funds) of $450.2 million.

In FY 08-09, the Water Fund spent a total of $20.3 million, in FY 09-10 the Fund spent $21.0 million, and in FY 10-11 the Fund was projected to spend $36.8 million. Increased expenditures are attributed to increased costs for wholesale water and infrastructure projects. Revenues and Expenditures of the Fund for the past three fiscal years are shown in Figure 14-5.

Beginning in FY 09-10, Water Fund expenditures, including bond financed CIP, exceeded revenues. Some of the increased expenditures were financed by the $35 million bond issued by the water utility. The Rate Stabilization Reserve is used as a 'balancing account' to keep the Water Fund expenditures equal to fund revenues. With the water rate increase, the Rate Stabilization Reserve ending balance on June 30, 2012 is projected to be $11.8 million, which is above the minimum guideline of $4.6 million.

Figure 14-5: Expenditures and Revenues (FYs 08-10)



Primary expenses in FY 10-11 were:

Administration	**$2.7 million**	**7.3%**
Operations	6.0 million	16.3%
Purchased Water	12.0 million	32.6%
Capital Expenditures	8.9 million	24.2%
Customer Support Services	1.7 million	4.6%
Debt Service	2.9 million	7.9%
Rent	2.1 million	5.7%
Miscellaneous	0.5 million	1.4%
Total	$36.8 million	100%

Capital Outlays

The current budget includes seven capital improvement projects (CIP) totaling $4.4 million. Particular focus is being placed on replacement of aging water lines and seismic upgrades of water reservoirs (tanks). The water replacement line CIP has been ongoing since 1986 and funds approximately $3.1 million to replace 15,800 lineal feet of water mains each year. The seismic system upgrade CIP provides structural reinforcement for the Monte Bello, Corte Madera, Park, Boronda, and Dahl reservoirs, and funds $9.7 million over the next three years.

The Emergency Water Supply and Storage project is ongoing and involves a number of construction projects to enable the City to have an eight-hour supply of water available should the SFPUC go down. The project involves the rehabilitation of up to five of the City's existing stand-by wells, to construct three new wells, to construct a new 2.5 million gallon (MG) storage reservoir, and to augment the existing Mayfield Pump Station. Two new emergency stand-by wells have been completed, and the Mayfield Pump Station contract was awarded in July 2011. These improvements are funded by the $35 million revenue bond issued in 2009.

The Utilities Department also funds $215,000 annually for water meter replacement and upgrades, and $217,000 annually for fire hydrant replacements and upgrades.

Long-term Debt

A $35 million water revenue bond was issued on October 6, 2009 to finance the Emergency Water Supply project. Interest ranges from 1.80 percent to 4.65 percent, with annual payments of $825,000. Repayment will be made from net revenues of the Water Supply and Distribution Enterprise Fund and will be retired in 2035.

A $26 million utility revenue bond was issued on January 24, 2002 to finance improvements to the City's water and natural gas utility system. Interest ranges from 3.00 percent to 5.00 percent, with annual payments of $835,000. Repayment will be made from net revenues of the Water Services and Gas Services Funds and will be retired in 2026.

Reserves

The City maintains a Rate Stabilization Reserve which currently stands at $15.1 million, a Debt Service Reserve (currently $3.3 million), and an Emergency Plant Replacement Reserve (maintained at $1.0 million). The City's Rate Stabilization Reserve Policy requires that the City maintain a minimum of 15 percent of budgeted water sales revenue (currently $4.3 million) in the Rate Stabilization Reserve Fund. The current reserve is 251 percent of minimum reserve guideline levels in FY 10-11. The City does not maintain a specific reserve fund for operations.

WATER SUPPLY

The City of Palo Alto depends on a combination of surface water and recycled water to meet the water needs of its customers. All surface water is pre-treated by SFPUC. The City also owns and maintains wells in order to make use of groundwater during emergency or drought conditions; however, groundwater has not been used since 1991.

The City of Palo Alto depends solely on SFPUC for domestic surface water supply through its 2009 Master Agreement. The agreement between the City and SFPUC was negotiated by the Bay Area Water Supply and Conservation Agency (BAWSCA). Per the agreement, the 26 SFPUC wholesale customers have a combined supply assurance of 184 million gallons per day. The City of Palo Alto's guaranteed portion of the supply assurance is referred to as the individual supply guarantee. Palo Alto's individual supply guarantee is 17.07 million gallons per day (or approximately 19,118 acre feet per year (AFY). As shown in Figure 14-6, the City anticipates that surface water supply requirements will not exceed 14,971 AFY through 2030, which is approximately 78 percent of the City's guaranteed supply from SFPUC.

Figure 14-6: Current and Planned Water Supply Sources

Water Supply Sources AFY	2010	2015	2020	2025	2030
SFPUC	12,263	14,253	14,157	14,353	14,971
Recycled Water	802	850	850	850	850
Total	13,065	15,103	15,007	15,203	15,821

Source: City of Palo Alto 2010 UWMP, June 2011; Table 5: Current and Planned Water Supply Sources.

The SFPUC water supply is subject to reductions during drought conditions. As part of the water supply agreement, a water shortage allocation plan between SFPUC and its wholesale customers was adopted in 2009, and addresses shortages of up to 20 percent of system-wide use. The Tier 1 Shortage Plan allocates water from the regional water system between San Francisco Retail and the wholesale customers during system-wide shortages of 20 percent or less. The water supply agreement also includes a Tier 2 Shortage Plan, which allocates the available water among the SFPUC wholesale customers. A new Tier 2 plan was approved by the BAWSCA agencies in 2011, which provides the framework for allocating the wholesale Tier 1 water allocation between the different BAWSCA agencies. The new Tier 2 water shortage plan is in effect until 2018. For details, refer to the 'Drought Allocations' section of Chapter 23, San Francisco Public Utilities Commission.

The City's existing water well system consists of seven wells (Hale, Rinconada, Peers, Fernando, Matadero, Eleanor Pardee, and Main Library) with a combined total permitted capacity of 6,000 gallons per minute (gpm). Additionally, a new well at El Camino Park, which is currently under construction, will enhance production capacity by 1,000 gpm once completed in December 2012. Besides normal annual operational testing, these wells have not been used for City potable water since 1991. The City is in the midst of constructing and completing an emergency water supply and storage project to rehabilitate existing wells and construct additional wells and emergency storage. Upon completion of these enhancements, the City's wells would have the combined capacity to pump 11,000 gpm (or 15.8 mgd). In addition to enhancing the City's emergency water supply capabilities, the groundwater system may also be used to a limited extent for water supply during drought conditions (up to 1,500 AFY),[108] and would be capable of providing normal wintertime supply needs during extended shutdowns of the SFPUC system. Given the limitations identified for groundwater during drought conditions, and the City's sufficient available surface water supply, the City has no plans to use groundwater during a drought, at this time. Once the water supply and storage project is complete, the City will re-evaluate the feasibility of using groundwater as a supplemental supply during a drought.

Recycled Water

The City of Palo Alto operates the Palo Alto Regional Water Quality Control Plant (RWQCP), a wastewater treatment plant, for the East Palo Alto Sanitary District, Stanford University, the Town of Los Altos Hills, and the cities of Los Altos, Mountain View, and Palo Alto. Wastewater from these communities is treated by the Palo Alto RWQCP prior to discharge to the Bay.

The Palo Alto RWQCP provides recycled water to the RWQCP itself, the Palo Alto Golf Course, the Palo Alto Duck Pond, Emily Renzel Marsh, Greer Park, and the North Bayshore Area in Mountain View, including the Shoreline Golf Course. Recycled water is also provided via water trucks to construction sites for dust suppression. The Palo Alto RWQCP currently produces about 800 AFY of recycled water. Palo Alto is currently studying a potential extension of the recycled water distribution system by constructing a new recycled water line to serve the Stanford Research Park area, as well as commercial uses and public spaces along the backbone and lateral pipeline routes. For more details on the Palo Alto RWQCP, refer to Chapter 26.

[108] As specified in the EIR for the Emergency Water Supply and Storage Project, concern over prolonged groundwater pumping in the area resulted in a maximum production limitation of 1,500 AFY during a drought.

Emergency Preparedness

Water Supply Hazards

The City has undertaken a systematic program to replace aging water lines. While the water line replacement project has been on-going since 1986, it will be a number of years before all of the old lines have been replaced. The Water Division is prepared to respond to any leaks or breaks in a timely manner, and is able to be on site within 60 minutes of dispatch.

The City is addressing the vulnerability of its water storage reservoirs to seismic events. In 2009, the City Council approved an emergency water supply and storage project as described in the Capital Outlays section.

Emergency Water Supply

Once the emergency water supply and storage project is complete, the City's groundwater system would be capable of providing normal wintertime supply needs during extended shutdowns of the SFPUC system.

At the present time, the storage and water well supply capacity of the existing system can provide approximately three hours of emergency water under a maximum day demand plus fire scenario.

Interties and Back-up Supply

Palo Alto has interties with Stanford University (2), Mountain View (2), and East Palo Alto (1) for use during emergency situations.

WATER DEMAND

Water consumption has fluctuated over the last 25 years in the City. Water consumption peaked between 1985 and 1987, and then hit an all-time low in 1993 during a drought year. Consumption in 2010 was low compared to previous years, as a result of the drier than normal conditions from 2006 to 2009, conservation measures implemented during the drought, permanent water conservation measures implemented during the past 25 years, and the concurrent economic recession. Water use decreased by 27 percent during the past nine years, and by 16 percent from 2007 to 2010. The City's water consumption is forecast to remain relatively stable in the future, with a slight increase due to a rebound in the economy.

In 2010, the City sold 11,236 acre feet of surface water or 59 percent of the City's supply guarantee from SFPUC. The City of Palo Alto projected water demands, as forecasted sales to 2030, are set out in Figure 14-7. The City adjusts water sales projections to account for its water conservation efforts, which are also called demand management measures. After incorporating the impact of demand management measures,

total sales are expected to increase by 17 percent from the period 2010 to 2030. Based on these projections, the City of Palo Alto's water demand (13,702 AFY) will be well within the City's SFPUC supply guarantee (19,118 AFY) in 2030.

Figure 14-7: Past, Current and Projected Water Sales AFY

Actual Sales Data		Projected Forecast			
2005	**2010**	**2015**	**2020**	**2025**	**2030**
12,217	11,236	14,201	14,970	14,970	15,949
Demand Management Incorporated		– 1,083	– 1,651	– 1,810	– 2,247
Projected Net Water Requirements		13,118	12,986	13,160	13,702

Source: Adapted from City of Palo Alto 2010 UWMP, June 2011; Table 10: Past, Current, and Projected Water Sales, page 41.
Note: These numbers exclude recycled water usage.

The water sales projections shown in Figure 14-7 do not include sales of recycled water, which are anticipated to increase by only six percent to 850 AFY in 2030. The City projected minimal growth in the use of recycled water, as the City has not made a commitment to expand the recycled water system or its use.

Residential water use per capita in Palo Alto is one of the highest among the BAWSCA member agencies. Of the 24 cities and water districts who are members of BAWSCA, Palo Alto ranks fourth at 120 gallons per capita per day. Over the past three calendar years, the Utilities Department has exceeded its annual water reduction goal of 0.34 percent per year (as a percentage of total retail sales). In 2008, retail sales were reduced by 0.72 percent, in 2009 by 0.98 percent, and in 2010 by 1.35 percent.

WATER INFRASTRUCTURE AND FACILITIES

The Palo Alto water system is a comprehensive water delivery system. The City is divided into nine pressure zones. Zones 1, 2 and 3 are located in the lower elevations of the City (generally northwest of the Foothill Expressway), while Zones 4, 5, 6, 7, 8, and 9 extend south into the higher elevations and the open space areas.

The City receives its potable water from SFPUC at five connection points (Lytton, California, Page Mill, Arastradero, and Sand Hill). Water received from SFPUC is treated and fluoridated.

Water Treatment Facilities

Palo Alto does not have any water treatment facilities.

Water Storage Facilities

The City has six water storage reservoirs with a combined storage capacity of 10.5 million gallons (MG); with a new 2.5 MG storage tank, plus an additional emergency well currently under construction. The existing reservoirs are in the process of being seismically retrofitted to further stabilize the City water supply system and ensure reliability. These tanks are currently utilized to maintain optimum water pressure between zones, and are a source for normal potable water use and for emergency purposes.

Conveyance and Distribution Facilities

The City's water system is composed of approximately 50 miles of 12-inch to 30-inch diameter transmission lines and over 160 miles of 4-inch to 10-inch diameter distribution mains. There are still remaining approximately 15 miles of 4-inch diameter pipes, which are being replaced with 8-inch diameter lines, which is the City's current minimum standard.

The City's water system also consists of seven booster pump plants (Lytton, Mayfield, Quarry, Corte Madera, Boronda, and Dahl) each with two to three pumps, one of which is on standby for emergency purposes. The system also features eight pressure regulating stations, 1,944 fire hydrants, 287 City-owned backflow prevention devices, and 20,238 water service connections. The system also includes the automated Supervisory Control and Data Acquisition (SCADA) System that controls distribution of water throughout the system.

When the City's water main replacement program was first incepted in the mid 1980's, over 60 percent of the water main pipelines were constructed prior to the 1960's. The 1960's vintage pipes are approaching their estimated 50-year useful service life and are in need of replacement. The City's annual water capital improvement project replaces structurally deficient water mains and appurtenances. Some mains are inadequate in size to supply required flows and pressures for fire protection, and others are subject to recurring breaks. Mains are selected by researching the maintenance history of the system and identifying those that are undersized, corroded, and subject to breaks. The rate of main replacement was increased from one mile per year to three miles per year in Fiscal Year 93-94. In addition, an analysis of cost effective system improvements was initiated in the same year. This analysis helped determine the best materials and construction methods to use with a goal of reducing the accelerated main replacement program's cost.

The City reported that in calendar year 2010 there were 23 main line breaks or leaks, and 22 service connection breaks or leaks. The City did not issue any 'boil water' orders or report any water outages.

Infrastructure Needs & Capital Improvement Program

The current capital improvement program identifies seven capital improvement projects scheduled over the five-year planning period. Particular focus is being placed on replacement of water lines, rehabilitation and maintenance of water tanks, and replacement of water meters and fire hydrants. Refer to the Financing Section for details.

Shared Facilities

The City does not share any facilities with any other agencies or organizations, with the exception of the emergency interties.

WATER QUALITY

Source Water

For the SFPUC system, the major water source originates from spring snowmelt flowing down the Tuolumne River to the Hetch Hetchy Reservoir, where it is stored. This pristine water source is located in the well-protected Sierra region and meets all Federal and State criteria for watershed protection. DPH and the EPA have granted the Hetch Hetchy water source a filtration exemption, based on the SFPUC's disinfection treatment practice, extensive bacteriological-quality monitoring, and high operational standards. In other words, the source is so clean and protected that the SFPUC is not required to filter water from the Hetch Hetchy Reservoir. Water from the Hetch Hetchy is supplemented by run-off collected in the Alameda and Peninsula Watersheds. This water is treated at two water treatment plants prior to distribution.

Treated Water

Quality of treated water can be evaluated according to several measures. For the purposes of this report, the following indicators are used: the number of violations as reported by the EPA since 2000, the number of days in full compliance with Primary Drinking Water Regulations in 2010, and any deficiencies identified by DPH as prioritized health concerns.

The City of Palo Alto does not treat water derived from the City's stand-by wells other than adding disinfectant. Treated water is received from the SFPUC Hetch Hetchy system. The City's water wholesalers, SFPUC and SCVWD, conduct their own testing. Of the parameters tested, none were found to be higher than CDPH allows.

According to the federal Environmental Protection Agency (EPA) through its Safe Drinking Water Information System (SDWIS), the City of Palo Alto had one violation during the 2000-2010 period. This was a Health Based Violation in July 2010 for coliform which has been cleared by State Administrative Order without penalty.

The City's 2010 Water Quality Report indicates that the City's potable water supply from all sources met all state and federal drinking water health standards. In order to insure that water quality standards are met, drinking water samples are collected daily throughout the City and analyzed for a variety of regulated and unregulated contaminants. Samples are tested by the City's certified laboratory and an independent laboratory using the latest testing procedures and equipment. Of the parameters tested, none were found to be higher than CDPH allows.

The most recent water system inspection by CDPH (December 2010 and January 2011) identified seven minor deficiencies which have been corrected by the City.

CITY OF PALO ALTO
SERVICE REVIEW DETERMINATIONS

Growth and Population Projections

- The current 2010 population of Palo Alto is 64,403.
- ABAG estimates that Palo Alto will grow by 30.4 percent over the next 25 years to an estimated population of 86,803.

Present and Planned Capacity of Public Facilities and Adequacy of Public Services, Including Infrastructure Needs and Deficiencies

- The City will be able to purchase sufficient water to meet its needs under its current contract with the San Francisco Public Utilities Commission.
- The Palo Alto water supply and distribution system has sufficient capacity to serve all water customers within its service area.
- Water use decreased by 27 percent during the past nine years, and by 16 percent from 2007 to 2010. The City's water consumption is forecast to remain relatively stable in the future.
- Continued emphasis on water conservation, rebates for water efficient appliances, and an 'inclining block tier' water rate structure are expected to result in static demand for water.
- The City is placing increased emphasis on utilizing recycled water for landscape irrigation. The Public Works Department and the Utilities Department are collaborating on a project to expand the recycled water service beyond the 850 acre feet per year currently projected. Recycled water currently makes up six percent of the City's water supply.
- The Palo Alto water system has seven emergency wells to address any water supply shortfalls and as backup should the SFPUC system be out of service. The City is currently implementing an Emergency Water Supply and Storage project to augment its emergency supply.
- The City currently has adequate water storage to provide three hours of water in an emergency. With the addition of water storage and improvements to the well system under the Emergency Water Supply and Storage project, an eight hour emergency water supply will be available.

- The Utilities Department has an ongoing program to replace its aging water distribution system, water meters and fire hydrants. These replacements and upgrades will insure adequate fire flow for fire suppression.

- Existing water reservoirs (tanks) are being seismically retrofitted to further stabilize the City water supply system and ensure reliability.

- The City provides high quality water based on district compliance with drinking water regulations, a lack of health and monitoring violations since 2000, and timely thorough district response to California Department of Public Health infrastructure and operational concerns.

- City management methods appear to generally meet accepted best management practices. The City prepares a budget before the beginning of each fiscal year, has a detailed Capital Improvement Program, conducts periodic financial audits, maintains relatively current transparent financial records, regularly evaluates rates and fees, tracks employee and department workload, and has established a process to address complaints.

Financial Ability of Agency to Provide Services

- The Water Enterprise Fund for the Palo Alto water system has not had sufficient financial resources to cover planned expenditures. The Rate Stabilization Reserve Fund has been utilized to allow Water Fund revenues to equal expenditures.

- Increased costs to provide services (expenditures) have outpaced revenues since FY 09-10, necessitating the need to utilize the Rate Stabilization Reserve Fund and to implement a new rate structure which raises water rates 20.9 percent for the period October 2011 through June 2012.

- Water rate increases will be required over the next several years to finance SFPUC Hetch Hetchy water system seismic improvements.

- The City has an ongoing multi-year capital improvement program that includes repair, replacement and rehabilitation projects that are designed to improve the overall water storage and distribution system.

Status and Opportunities for Shared Facilities

- The City practices facility sharing by receiving potable water through the SFPUC distribution system, sharing emergency water line interties with Stanford University, Mountain View and East Palo Alto, and receiving recycled water from the Palo Alto Regional Water Quality Control Plant.

- The City collaborates with the Santa Clara Valley Water District, the Bay Area Water Supply and Conservation Agency, the Northern California Pipe Users Group, and the Water System Distribution Roundtable.

- The City has not identified further opportunities for facility sharing.

Accountability for Community Services, Including Governmental Structure and Operational Efficiencies

- Accountability is best ensured when contested elections are held for governing body seats, constituent outreach is conducted to promote accountability and ensure that constituents are informed and not disenfranchised, and public agency operations and management are transparent to the public. The City demonstrated accountability with respect to all of these factors.

- The City has a water advisory committee, the Utilities Advisory Commission, to provide advice and recommendations to the City Council regarding water resources, project review, environmental issues, and rate structure.

- Operational efficiencies are being improved through the use of an asset management system, by utilizing an 'inclining block tier' water rate structure which promotes more efficient use of water; and by carrying out an aggressive water conservation program.

- No governance structure options have been identified for Palo Alto.