APPENDIX C:
WATER SUPPLY ASSESSMENT

HAMPTONS PROJECT

CUPERTINO, CALIFORNIA

SB610 WATER SUPPLY ASSESSMENT

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For

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Introduction and Project Description

California Water Service (Cal Water) has prepared this California SB 610 Water Supply Assessment (WSA) for the Hamptons Project. The Los Altos Suburban (LAS) district of Cal Water provides potable water service to all customers within the proposed development area of the Hamptons Project.

The project is located at 19500 Pruneridge Ave in the City of Cupertino. The project involves demolition of existing facilities housing 342 apartments and replacing them with facilities housing 942 apartments resulting in an increase of 600 apartments.

Construction of the Hamptons Project is expected to start after City approval in 2016. Completion of the project is expected at the end of 2017 and occupancy in 2018.

The Hamptons Project is not specifically covered in Cal Water's LAS District 2010 Urban Water Management Plan (UWMP); therefore, its water supply requirements are addressed in this WSA. The 2010 UWMP is based on data recorded to 2010 and is currently the most recent UWMP; however, updated Cal Water records data for 2011 – 2014 on population, customer services, water demand and well supply were obtained and used in the WSA.

The 2010 LAS District UWMP can be referenced for more detailed information on historic and forecasted water demand and supply.

Senate Bill 610 (Chapter 643, Statutes of 2001) (SB 610) amended state law as of January 1, 2002, to include consideration of water supply availability when cities and counties are making land use development decisions. SB 610 requires detailed information on water supply availability be provided to local public agency decision-makers prior to approval of development projects that meet or exceed any of the following criteria:

1. A residential development of more than 500 dwelling units.
2. A shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet.
3. A commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.
4. A hotel or motel with more than 500 rooms.
5. An industrial, manufacturing or processing plant or industrial park planned to house more than 1,000 persons occupying more than 40 acres of land or having more than 650,000 square feet of floor area.
6. A mixed-used project that includes one or more of the projects specified above.
7. A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

Because the proposed Hamptons Project exceeds criteria 1 above, a WSA is required. The WSA assesses the adequacy of the water supply to meet the estimated demands of the proposed Hamptons Project over the next 20 years and those of Cal Water's LAS District customers and projected new users under normal, single dry year and multiple dry year conditions. (Water Code §10911(a)). SB

610 requires that the information presented in a WSA be included in the administrative record that is the basis for an approval action by the local public agency.

SB 610 recognizes local control and decision-making regarding availability of water for projects and approval of projects. A WSA is to be provided to local governments for inclusion in environmental documentation for projects subject to the California Environmental Quality Act (as defined in Water Code 10912 [a]).

Hamptons Project Water Demand

Forecasting net new water demand for the Hamptons Project is based on multiplying the estimated water use on a gallons per day per dwelling unit basis (using LAS District data) by the new number of dwelling units.

Cal Water has used historic water use data by user classes to develop estimates of water demand for various projected development uses. Due to implementation of more aggressive water conservation practices and requirements, historic unit water use factors are viewed as being higher than the water use factors projected for new developments in 2015 and beyond. Accordingly, the method used here was to:

1. Estimate water demand of existing facilities
2. Estimate water demand of proposed new development based on newer water conservation requirements for toilets, showers, dishwashers, washing machines and outdoor landscaping and irrigation systems.
3. Determine the net increase in project water demand by subtracting existing demand from estimated new development demand.

Updated US Census Bureau data for 2010 obtained by Cal Water indicate that the number of multi-family dwelling units in the LAS District was 8,517. The total water demand for multi-family services in 2010 was 656 AFY. Therefore, the 2010 water use factor is 0.077 AFY/dwelling unit or 68.7 gpd/dwelling unit.

Estimated Existing Hamptons Apartment Average Daily Water Use:

Residential (multi-family units):
68.7 gpd/dwelling unit x 342 dwelling units = 23,495 gpd

Estimated Hamptons Project Water Use:

The Hamptons Project will replace facilities with those that fully comply with more stringent and current city water conservation requirements including the California Plumbing Code and the California Green Building Code, which mandate installation of water conserving plumbing fixtures and fittings.

Existing water use in multi-family dwelling units is based on higher historic water use rate data. It is estimated that new Hamptons Project facilities will achieve a reduction in water use rates of 25%.

For example, old toilets often exceed 2 gallons per flush. Later toilets use 1.6 gallons per flush. The latest water efficient toilets use only 0.6 gallons per flush. Depending on the reference toilet, the latest toilets achieve 62.5% to 70% reduction in water use. In residential dwelling units, new dishwashers will be installed which use less water than older conventional machines, which use between 7 and 14 gallons per wash load. New water efficient dishwaters use between 4.5 and 7 gallons per wash load. Using an average of 10.5 gallons for conventional machines and 5.75 gallons for new water efficient machines results in an average savings of 4.75 gallons per load or a reduction of 45%. Showers with restricted flow heads have an average flow rate of 2.0 gallons per minute (gpm) versus conventional shower head flows of 2.5 gpm or a 20% reduction. Washing machines 18 years or older used 40 gallons per standard load versus new machines using only13 gallons per load or a reduction of 67.5%.

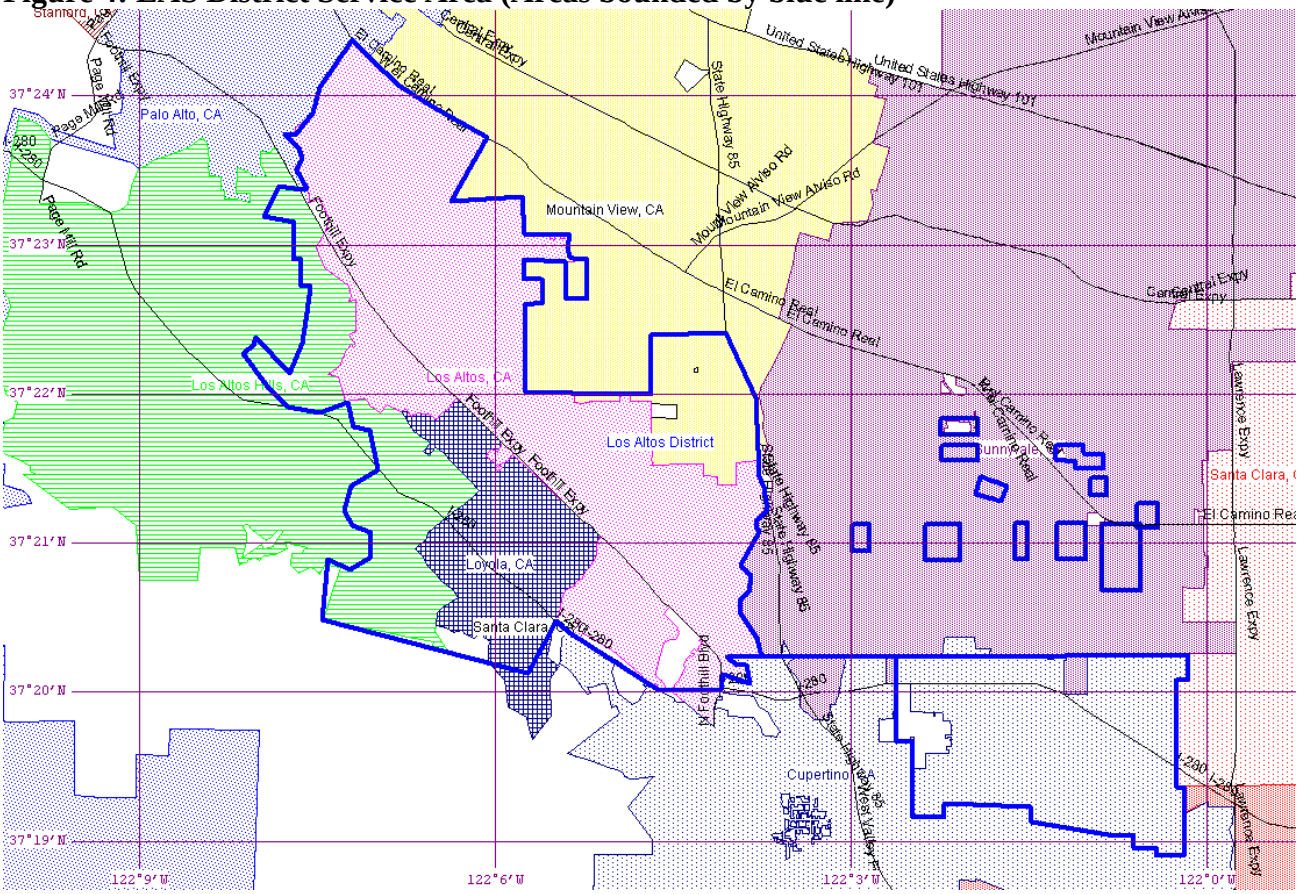
Total New Residential Dwelling units:
0.75 x 68.7 gpd/dwelling unit x 942 dwelling units = 48,536 gpd

Estimated net increase in average daily water use for the Hamptons Project is:
48,536 gpd – 23,495 gpd = 25,041 gpd or **28.1 acre-feet/year (AFY)**

LAS District Background Information

The Los Altos District is located in Santa Clara County approximately 45 miles south of San Francisco and 11 miles north of San Jose. The system serves the majority of the incorporated city of Los Altos, fringe sections of the cities of Cupertino, Los Altos Hills, Mountain View, Sunnyvale and adjacent unincorporated areas of Santa Clara County. The service area boundaries are shown in Figure 4.The cities of Mountain View, Sunnyvale Cupertino and Santa Clara own and operate water systems northeast and southeast of the District. Purissima Hills Water District is north of the City of Los Altos Hills.

Figure 4: LAS District Service Area (Areas bounded by blue line)



Cal Water uses U.S. Census data in estimating population in all of its districts in California. Its methodology for estimating existing and future population has been reviewed and accepted by the California Public Utilities Commission (CPUC), which provides regulatory oversight of privately owned water and wastewater utilities. Estimates of the population serviced by Cal Water in the LAS district are based on overlaying the 2010 U.S. Census Tract Block data with the service area boundary as shown in Figure 1. LandView 5 and MARPLOT® software are used to generate data.

When compared to year 2000 Census data, the 10 year population growth rate in Cal Water's LAS district service was 18.8% based on a 2000 population census based estimate of 55,177 and a 2010 population census based estimate of 65,550. This was increase of 10,373 persons in 10 years or average annual increase of 1,037 persons. Total housing units (single family and multi-family) increased from 21,258 to 25,301 or 4,043 units in 10 years for an average annual increase of 404 units.

Based on 2010 U.S. Census data, occupant density is 2.59 persons per residential unit (single family and multifamily units).

This data was used as a baseline for estimating population starting in 2010. To calculate estimated population after 2010, the Census 2010 population was divided by the total number of dwelling units served by Cal Water in 2010 to produce a population density value. This value was then multiplied by the number of projected dwelling units in each future year.

The twenty-year growth rate for customer service types was used by Cal Water to estimate the future number services to 2040 and population in the LAS District. Use of the twenty-year growth rate correlates most closely with past growth and current growth trends. In the 2010 UWMP, Cal Water estimated the LAS district service area population to be 56,940. Subsequently, using 2010 US Census data and GIS developed population counts, Cal Water revised its 2010 population estimate to 65,550, which is a difference of 8,610 or 15.1 % greater. The 2010 UWMP estimate of population in 2040 was 62,650.

In 2015, Cal Water updated its population forecast which is shown in Table 1. This forecast shows significantly greater increases in population growth than projected in the 2010 UWMP. The updated Cal Water population forecast is used in the WSA.

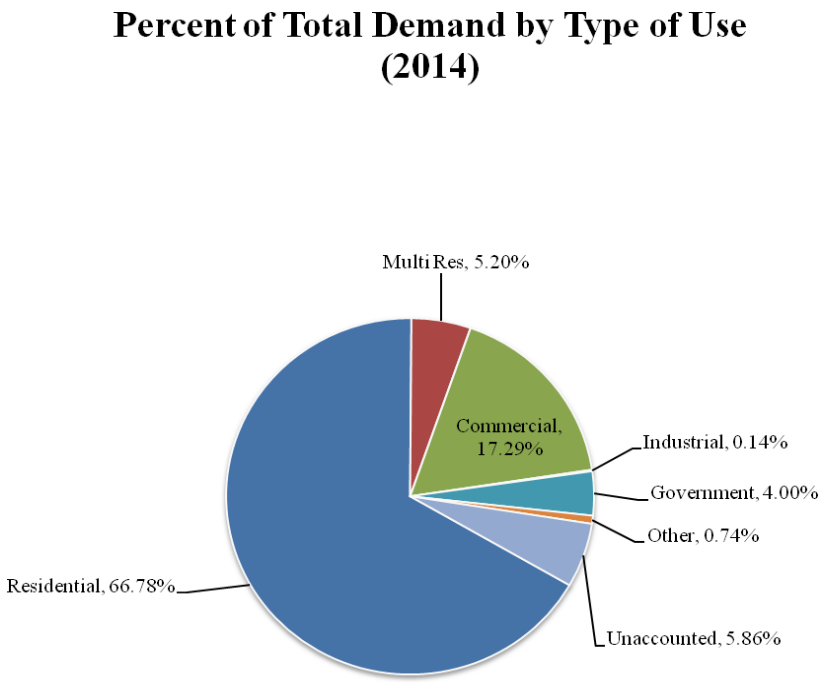
Table 1: 2015 LAS District Updated Population Projections

Year	2005	2010	2015	2020	2025	2030	2035	2040
Service Area Population	60,450	65,550	68,234	71,291	74,504	77,986	81,764	85,864

LAS District Water Demand

Before the passage of Senate Bill 7 (SBx7-7), Cal Water projected water demand by multiplying the projected number of services for each of its user classes by one of three (high, average and low) historic water use rates for each user class. The three water use rates were derived from metered customer water records. Projected increases in the number of customers in each user class were based on historic growth rates for that user class unless a particular growth rate was determined to be non-representative in which case the overall customer growth rate was used. The sum of projected demands for each user class equaled the total projected demand for the LAS District. Three separate demand projections for the LAS District were calculated in this manner: high, average and low. After the passage of SBx7-7, the above method was no longer used for projecting LAS District water demand. However, this method is still used for projecting growth in services by user class, population, and distribution of demand among user classes. Figure 5 shows total demand by user class for all applicable user classes in 2010. The largest user class is single family residential where water use is 66.8% of total demand. The one category that will comprise water use for the Hamptons Project is multi-family residential, which is 5.2% of total demand.

Figure 5: LAS District Demand by User Class (2014 Data)



California Senate Bill x7- 7 Baseline and Targets

Senate Bill No. 7 (SBx7-7) adopted in November 2009 mandates a statewide 20% reduction in per capita urban water use by December 31, 2020. The CPUC directed Class A and B water utilities to adopt conservation programs and rate structures designed to achieve reductions in per capita water use. To increase water conservation, Cal Water in 2010 developed five-year conservation program plans for all of its service districts. The LAS District Conservation Master Plan is in Appendix G of the 2010 UWMP.

SBx7-7 requires reducing per capita water use by at least 10 percent on or before December 31, 2015. SBx7-7 requires urban retail water suppliers to develop 2015 and 2020 water use targets in accordance with specific requirements and provides several ways to calculate them. Retail water suppliers can also form regional alliances within the same hydrologic region to achieve compliance.

Demand projections in the 2010 UWMP were developed to meet SBx7-7 requirements. Two demand projections were made: 1) an unadjusted baseline demand and 2) a target demand. The unadjusted baseline water demand projection is the total demand expected without any water conservation. It is equal to forecasted population multiplied by the base per capita water use,

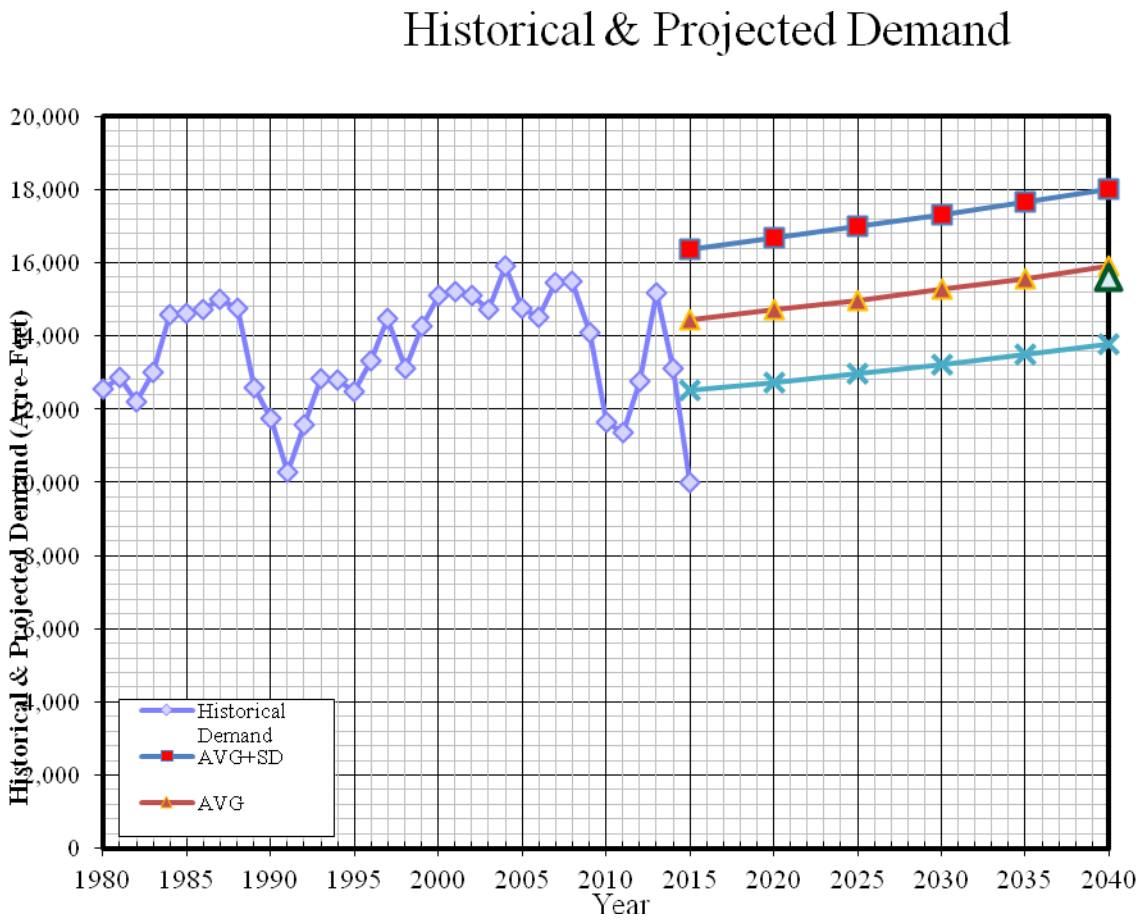
which is the average for the period from 2005 to 2009.

The 2010 LAS UWMP provides a detailed description of the four methods permitted by the state to calculate water use targets for 2015 and 2020 and explains why Cal Water elected to use the first method. Under Method 1, the 2015 and 2020 targets are set to 90 percent and 80 percent of baseline water use, respectively. Baseline water use is the average water use for any continuous 10-year period ending between 2004 and 2010. For the Los Altos District, the 10 year base period 1999-2008 yielded the maximum target under this method. The 2015 target was 217 gpcd and a 2020 target is 193 gpcd. In preparing its 2015 LAS District UWMP, Cal Water updated the 10 year base period resulting in lower water use per capita targets. For 2015, it is 209 gpcd and for 2020, it is 185 gpcd.

Annual LAS District per capita demand for the 20 year period between 1995 and 2014 ranged from a high of 244 gpcd in 2000 to a low of 152 gpcd in 2011. Cal Water estimates the 2015 annual per capita demand to be 130 gpcd – a significant decrease, which is viewed as the result of LAS District customers responding to intensified efforts by Cal Water, SCVWD and the state to achieve the 25% reduction in water use requested by the Governor of California in early 2015. In its updated projections, Cal Water increases per capita daily water demand to 184 gpcd in 2020 and beyond assuming that after the current drought ends, normal or above normal annual rainfall and runoff will occur. An increase in per capita water consumption has been observed in previous years following droughts. The 184 gpcd is still less than the adjusted 2015 and 2020 SBx7-7 targets.

Since LAS District demand data for the period from 2010 to 2015 indicate that water use on a per capita per day basis is less than water use based on SBx7-7 target rates, the WSA uses the lower average rates for projecting future LAS District demand as shown in Figure 6.

Figure 6: LAS District Projected Demand Comparison (2015 Update)



Actual and projected water demand through 2040 is also shown in Table 2. Demand estimates for 2015 are based on actual water use data through September 2015 and estimates for October - December. For the period from 2020 to 2040, projected water demand is based on multiplying updated population projections in Table 1 by varying per capita water use rates.

Table 2: LAS District Actual and Projected Water Demand (AF)

	2005	2010	2015	2020	2025	2030	2035	2040
Water Use	14,758	11,648	14,440	14,706	14,983	15,273	15,577	15,894

Hamptons Project and LAS District Demand Assessment

The estimated initial use date Hamptons Project facilities is January 2018. Full occupancy and use is expected by January 2020.
The projected LAS district water demand increase between 2015 and 2020 is 266 AFY. Taken as a percentage of this increase, the estimated net new water demand of 28.1 AFY for the Hamptons

Project is 10.6% (28.1/266). The 25 year projected demand increase from 2015 to 2040 is 1,454 AFY. The estimated net new demand for the Hamptons project is estimated to be only 1.9% (28.1/1,454) of that.

Water demands of the Apple Campus 2 project are estimated in a SB 610 WSA, February 1, 2012. Total potable and non-potable estimated water use for Apple Campus 2 Phases 1 and 2 is 520 AFY for the water conserving scenario, which based on current information from the City of Cupertino, was selected and is being implemented. As presented in the Apple Campus 2 WSA, potable water use at build out was estimated to be 242 AFY and recycled water for landscape irrigation, interior fixtures and process water requirements was estimated to be 278 AFY.

As noted under the recycled water section, Cal Water, Sunnyvale, South Bay Recycling, Apple, and SCVWD will be signing a contract to provide an inter-tie to the Sunnyvale recycled water system. The current plan includes constructing a recycled water transmission line to the Apple Campus 2 site to deliver 175 AFY or 103 AFY less than the 278 AFY estimated in the Apple Campus 2 WSA. Accordingly, 103 AFY of water demand is added to the estimated potable demand of 242 AFY to yield a revised total potable water demand of 345 AFY for Apple Campus 2 at build out. Total demand is still estimated to be 520 AFY.

Total estimated existing potable water use site area prior to the Apple Campus 2 project was estimated to be 398.4 AFY.

Therefore, the net increase in water demand by the Apple Campus 2 project is 121.6 AFY. Since 175 AFY of demand will be met by non-potable water, the net effect on potable supply of the Apple Campus 2 project is to decrease demand on the potable supply by 53.4 AFY.

Concurrent with preparation of the Hamptons Project WSA, a WSA has been prepared by Cal Water for the Vallco Specific Plan and Project. That WSA estimates the increased demand for the proposed development plan is 330,810 gpd or 370.9 AFY

In a February 29, 2012, letter, the City of Cupertino requested that Cal Water review its SB 610 Water Supply Assessment (WSA) dated August 12, 2008 for the Main Street Development Project with respect to two proposed additional alternative development options that differ from the two options assessed in the WSA. The City requested that changes to the base scheme option be assessed for their impact on project water demand. In a March 21, 2012 response to the City Cal Water compared the estimated water demand for Option 1D (base scheme) to Plan A, the higher using option in the 2008 WSA. In Cal Water's Addendum No. 1 to the WSA, dated March 21, 2012, the estimated water demand for Option 1D (Base Scheme) is 268,580 gpd compared to the August 12, 2008, WSA estimated demand for Plan A of 265,400 gallons/day. The demand for Option 1D is used here: 30.1 AFY.

The estimated water demands for the 1) Hamptons project, 2) proposed Vallco Project, 2) Apple Campus 2 project and 4) Main Street development project are added to Cal Water's updated 2015 LAS District demand projection for 20 years shown in Table 2 resulting in a revised LAS District demand projection, which is shown in Table 3.

Table 3: LAS District Plus Four Development Projects Actual and Projected Water Demand (AF)								
	2005	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**	**2040**
Cal Water Projection	14,758	11,648	14,440	14,706	14,983	15,273	15,577	15,894
Hamptons Project	0	0	0	28.1	28.1	28.1	28.1	28.1
Vallco SP&P	0	0	0	370.9	370.9	370.9	370.9	370.9
Apple Campus 2	0	0	0	121.6	121.6	121.6	121.6	121.6
Main Street Project	0	0	0	30.1	30.1	30.1	30.1	30.1
Total	14,758	11,648	14,440	15,257	15,534	15,824	16,128	16,445

LAS District Water Demand Management

Cal Water is significantly expanding its water conservation programs. State law, CPUC directives and a state water conservation organization are focused on reducing urban water use and have provided much of the impetus for this emphasis. This includes:

1. Recent decisions by the CPUC directing regulated water utilities to reduce per capita urban water demand.
2. State legislation mandating urban water suppliers reduce per capita demand 20 percent by 2020.
3. Memorandum of Understanding Regarding Urban Water Conservation in California (MOU).

Following is a brief summary of each.

The CPUC's Decision 07-05-062 directed Class A and B water utilities to submit a plan to achieve a 5 percent reduction in average customer water use over each three-year rate cycle. This policy was refined under Decision 08-02-036, which established a water use reduction goal of 3 to 6 percent in per customer or service connection consumption every three years once a full conservation program, with price and non-price components, is in place. These decisions anticipated enactment of policies by the State legislature to reduce urban water use in California 20 percent by 2020.

SBx7-7 requires the state to achieve a 20 percent reduction in urban per capita water use by December 31, 2020. The state is required to make incremental progress toward this goal by reducing per capita water use by at least 10 percent on or before December 31, 2015. SBx7-7 requires each urban retail water supplier to develop interim and 2020 urban water use targets. Urban retail water suppliers will not be eligible for state water grants or loans unless they comply with SBx7-7's requirements.

There are three ways in which a water supplier can comply with the MOU. The first way is to implement a set of water conservation best management practices (BMPs) according to the requirements and schedules set forth in Exhibit 1 of the MOU. The second way, called Flex Track compliance, is to implement conservation programs expected to save an equivalent or greater volume of water than the BMPs. The third way, similar to SBx7-7, is to reduce per capita water use. Each of these compliance options is briefly described below.

Originally, the MOU established a set of BMPs that signatories agreed to implement in good faith. For each BMP, the MOU established the actions required by the water supplier (e.g. site surveys, fixture and appliance rebates, water use budgets, volumetric pricing and conservation rate designs), the implementation schedule, and the required level of effort (in the MOU this is referred to as the coverage requirement). Additionally, the MOU established the terms by which a water supplier could opt out of implementing a BMP.

BMPs are grouped into five categories. Two categories, Utility Operations and Education, are "Foundational BMPs" because they are considered essential water conservation activities by any utility and are adopted for implementation by all signatories to the MOU as ongoing practices with no time limits. The remaining BMPs are "Programmatic BMPs" and are organized into Residential, Commercial, Industrial, and Institutional (CII), and Landscape categories. Table 4 lists the BMPs by category. The requirements and coverage levels of each BMP are set forth in Exhibit 1 of the MOU. Cal Water's CUWCC annual reports, which detail BMP implementation, are included in the 2010 UWMP as Appendix G.

Under Flex Track, a water supplier can estimate the expected water savings over the 10-year period 2009-2018 if it were to implement the programmatic BMPs in accordance with the MOU's schedule, coverage, and exemption requirements, and then achieve these water savings through any combination of programs it desires. Thus, through the Flex Track compliance option, a water supplier agrees to save a certain volume of water using whatever it determines to be the best combination of programs. Because the savings target depends on the programmatic BMP coverage requirements, which in turn are functions of service area size and composition of demand, the volume of water to be saved under this compliance option must be calculated separately for each supplier.

Table 4: MOU Best Management Practices

BMP Group	BMP Name
1. Utility Operations Programs (F)	Conservation Coordinator
	Water Waste Prevention
	Wholesale Agency Assistance Programs
	Water Loss Control
	Metering & Volumetric Rates
	Retail Conservation Pricing
2. Education Programs (F)	Public Information Programs
	School Education Programs
3. Residential (P)	Residential Assistance Program
	Landscape Water Surveys
	High Efficiency Clothes Washer Program
	Watersense Toilet Program
	Watersense Specifications for Residential Development
4. Commercial, Industrial, Institutional (P)	Reduce baseline CII water use by 10% in 10 years
5. Landscape (P)	Large Landscape Water Budget Programs
	Large Landscape Water Surveys
F = Foundational BMP, P = Programmatic BMP	

Under the gpcd option, a water supplier can comply with the MOU by reducing its baseline gpcd by 18 percent by 2018. The baseline is the ten-year period 1997-2006. The MOU establishes interim gpcd targets and the highest acceptable levels of water use deemed to be in compliance with this option. The MOU's gpcd option is similar to the method to set the SBx7-7 target, except that it uses a fixed baseline period and only runs through 2018.

Cal Water is using Flex Track to comply with the MOU because it provides the most flexibility in selecting conservation programs and allows for more streamlined reporting.

Water Conservation Master Plans

To comply with requirements for urban water use reduction, Cal Water developed Water Conservation Master Plans (WCMP) for each of its service districts or areas. WCMPs set forth a framework for compliance and describe Cal Water's specific conservation actions to be implemented. Major tasks in the WCMPs include:

1. A complete review of State policies and development of a compliance strategy
2. Calculating all appropriate per capita targets
3. Determining water savings required from new programs
4. Performing an analysis of conservation programs
5. Developing a portfolio of conservation program actions
6. Creating a plan for monitoring and updating the WCMP

The Water Conservation Master Plan for the LAS District is in Appendix G of the 2010 UWMP. A discussion of baseline and target water use is provided in Section 3 of the UWMP. Details on water savings requirements and the programs to be implemented are also provided. Table 5 is a summary of water conservation programs selected.

Table 5: Cal Water LAS District Conservation Programs		
Program Name	**Description**	**Target Market**
CORE PROGRAMS		
Rebate/Vouchers for toilets, urinals, and clothes washers	Provide customer rebates for high-efficiency toilets, urinals, and clothes washers	All customer segments
Residential Surveys	Provide residential surveys to low-income customers, high-bill customers, and upon customer request or as pre-screen for participation in direct install programs	All residential market segments
Residential Showerhead/Water Conservation Kit Distribution	Provide residential showerhead/water conservation kits to customers upon request, as part of residential surveys, and as part of school education curriculum	All residential market segments
Pop-Up Nozzle Irrigation System Distribution	Offer high-efficiency pop-up irrigation nozzles through customer vouchers or direct install.	All customer segments
Public Information/Education	Provide conservation messaging via radio, bill inserts, direct mail, and other appropriate methods. Provide schools with age appropriate educational materials and activities. Continue sponsorship of Disney Planet Challenge program.	All customer segments
NON-CORE PROGRAMS		
Toilet/Urinal Direct Install Program	Offer direct installation programs for replacement of non-HE toilets and urinals	All customer segments
Smart Irrigation Controller Contractor Incentives	Offer contractor incentives for installation of smart irrigation controllers	All customer segments
Large Landscape Water Use Reports	Expand existing Cal Water Large Landscape Water Use Report Program providing large landscape customers with monthly water use reports and budgets	Non-residential customers with significant landscape water use and potential savings
Large Landscape Surveys & Irrigation System Incentives	Provide surveys and irrigation system upgrade financial incentives to large landscape customers participating in the Large Landscape Water Use Reports programs and other targeted customers	Non-residential customers with significant landscape water use and potential savings
Food Industry Rebates/Vouchers	Offer customer/dealer/distributor rebates/vouchers for high-efficiency dishwashers, food steamers, ice machines, and pre-rinse spray valves	Food and drink establishments, institutional food service providers
Cooling Tower Retrofits	Offer customer/dealer/distributor rebates/vouchers of cooling tower retrofits	Non-residential market segments with significant HVAC water use
Industrial Process Audits and Retrofit Incentives	Offer engineering audits/surveys and financial incentives for process water efficiency improvement	Non-residential market segments with significant industrial process water uses

LAS District Conservation Program Activity Levels

The water savings requirement analysis showed that water savings from existing water efficiency codes and ordinances, scheduled adjustments to water rates, and past investment in conservation programs meet LAS district's 2015 SBx7-7 per capita water use target. For the LAS District, the programs selected and the activity level of each are shown in Table 6.

Table 6: LAS District Water Conservation Program (2010 UWMP)					
Program	**Planned Annual Activity Levels**				
	2011	**2012**	**2013**	**2014**	**2015**
CORE PROGRAMS					
Rebates/Vouchers					
Toilets	340	340	340	520	520
Clothes Washers	750	750	750	790	790
Urinals	0	0	0	0	0
Customer Surveys/Audits	290	290	290	450	450
Conservation Kit Distribution	580	580	580	600	600
Pop-Up Nozzle Distribution	6,900	6,900	6,900	7,190	7,190
NON-CORE PROGRAMS					
Direct Install Toilets/Urinals	1,630	1,630	1,630	1,830	1,830
Smart Irr. Controller Vendor Incentives	180	180	180	410	410
Large Landscape Water Use Reports	0	0	0	0	0
Large Landscape Surveys/Incentives	40	40	40	40	40
Commercial Kitchen Rebates/Vouchers	0	0	0	50	40
Cooling Tower/Process Water Retrofit Incentives	0	0	0	0	0

The 2010 UWMP estimates that total annual water savings for the Core and Non-Core Programs listed in Table 5 will be 812.6 AFY in 2015 for the programs listed above. These projected water savings will meet the LAS district's 2015 SBx7-7 target. . In the 2015 UWMP, Cal Water will be proposing additional water conservation actions for the period from 2016 to 2020.

The water savings requirement analysis shows that after accounting for water savings from existing water efficiency codes and ordinances, scheduled adjustments to water rates, and investments in conservation programs, projected 2015 baseline demand in LAS district is less than the 2015 per capita water use target. Moreover, 24 of the 32 programs evaluated had benefit to cost ratios greater than or equal to one, indicating that implementation of these programs is more cost-effective for rate payers.

The 2010 UWMP assumes that there will be a linear reduction in gpcd from 2015 to 2020 to achieve the district-specific 2020 SBx7-7 compliance target. Programs required to achieve 2020 SBx7-7 compliance will be outlined in the next Conservation Master Plan for the district, which will be presented in the 2015 UWMP. Activity levels of future programs will depend in part on Cal Water's obtaining California Public Utility Commission (CPUC) funding approval in its rate setting process.

As part of the Conservation Master Plan, one page program summaries or fact sheets were developed for each recommended program. The fact sheets provide a brief summary of program design and marketing, expected level of customer participation, projected water savings, and

proposed program expenditure for the period 2011 – 2015. The fact sheets for the LAS District are included in Appendix G of the 2010 UWMP.

Water Shortage Allocation Plans

Cal Water has also developed Water Shortage Allocation Plans (WSAP), which are plans of action to reduce water demand should significant water supply shortages occur. These actions may be implemented for several months or several years depending on circumstances. The WSAP differs from the Water Conservation Master Plan, which is focused on achieving permanent reductions in per capita water use by Cal Water's customers and is not driven by significant short or long reductions in supply. In the short-term, the WSAP assists Cal Water in further reducing demand so that it matches significant reductions in supply.

Implementation of Cal Water's WSAP for the LAS District will depend on treated water supply deliveries from the Santa Clara Valley Water District (SCVWD), the availability of supply from Cal Water's wells within the district and possible emergency supply made available by SCVWD. Cal Water has a four-stage approach that corresponds to specific levels of projected water supply shortage. Depending on the supply reduction target, this approach becomes increasingly more aggressive in requiring customer water use reductions. The stage selected depends on such factors as wholesale supply reductions, availability of alternative supplies, time of year and coordinated regional actions among all affected water utilities and agencies.

The percentage of supply shortage will be a significant factor in Cal Water's decision on which stage of supply reduction it will implement. Supply reductions percentages are shown for each of the 4 stages in Table 7.

Table 7: Cal Water Supply Shortage Reduction Stages

Stage	Projected Supply Reduction %
Stage 1	5 to 10%
Stage 2	10 to 20%
Stage 3	20 to 35%
Stage 4	35 to >50%

LAS District Water Supply

Information is from Cal Water's 2010 UWMP and updated data to be used in the 2015 UWMP.

Water supply for the LAS District is from Cal Water wells and purchased treated water from SCVWD. Approximately, 32% of total supply is from Cal Water wells and 68% is purchased water.

The amount of groundwater pumped from Cal Water wells versus purchased treated water varies depending on the supply available from SCVWD varies annually. SCVWD imports surface water to its service area from the South Bay Aqueduct of the State Water Project (SWP), the San Felipe Division of the federal Central Valley Project (CVP) and the San Francisco Public Utilities Commission's (SFPUC) Regional Water System. However, Cal Water only receives SCVWD water from SWP and CVP sources.

Purchased SCVWD water projections are based on historical trends being extended to 2040 and include "Non-Contract" water. The SCVWD approved treated water delivery schedule is expected to increase by about 80 AF per year. In SCVWD's 2012 Water Supply and Infrastructure Master Plan baseline supplies are projected to increase from 398,000 AFY in 2012 to 421,000 AFY in 2035 or an average annual increase of 1,000 AFY per year. In addition, water conservation savings are projected to increase from 53,000 AFY in 2012 to 99,000 AFY in 2030 or an average annual increase in savings of 2,555 AFY per year. So the effective SCVWD increase in supply including water conservation savings is 3,555 AFY. The LAS District's share of SCVWD's average annual effective supply increase is only 2.2%

Groundwater supply projections are based on groundwater production being set to meet the difference between LAS District demand and supply deliveries from SCVWD in a given year. Cal Water has more than adequate well capacity to meet projected demands through 2040. As wells reach the end of their useful life are taken out of service, they are replaced with new wells.

Table 8 presents the supply plan to match the projected LAS District demand projection in Table 3. Based the amount of water delivered by SCVWD to the LAS District and assuming a constant annual use of recycled water supply conveyed by SCVWD from the City of Sunnyvale's recycled water treatment facilities for non-potable use on the Apple Campus 2 site, Cal Water will pump groundwater from its wells to meet anticipated demand. In short, the amount of groundwater pumped is the difference between projected total demand and the projected potable and recycled water supplies from SCVWD.

Table 8: LAS District Projected Water Supplies

(AFY)

Water Supply Sources	2010	2015	2020	2025	2030	2035	2040
SCVWD Purchased Water	8,887	10,500	10,900	11,300	11,700	12,100	12,500
Groundwater Wells	3,892	3,940	4,182	4,059	3,949	3,853	3,770
Recycled Water	0	0	175	175	175	175	175
Total	11,648	14,440	15,257	15,534	15,824	15,128	16,445

SCVWD Purchased Water

SCVWD owns and operates three separate surface water treatment plants (the Penitencia, Rinconada, and Santa Teresa water treatment plants) that are supplied by surface water supplies from local runoff and imported water from the CVP, SWP and SFPUC. Treated water is delivered to the LAS District from the Rinconada treatment plant through a large-diameter high pressure transmission pipeline that runs through Cupertino and along Foothill Expressway. This transmission pipeline, commonly referred to as the West Pipeline, has branch lines that distribute water to the cities of Santa Clara and Mountain View ("distributaries").

Cal Water has a contract to 2035 with SCVWD to purchase treated surface water and convey it to the LAS District. SCVWD “Contract” water is delivered through four connections with its transmission system. These connections are called the "Hamptons", "Granger", "Farndon", and "Covington" turnouts. The Farndon and Granger turnouts are located directly on the West Pipeline, while the Tantau-Hamptons turnout is located on the Santa Clara Distributary, and the Covington connection is located on the Mountain View Distributary. Each of these turnouts is equipped with pressure and flow control devices that provide a hydraulic transition between their respective delivery main and the LAS district distribution system.

When surface water supplies are abundant (above normal hydrologic years generally), SCVWD makes available for sale "Non-Contract" water in order to promote increased storage in groundwater aquifers in the region. Because there is usually a lower cost for purchasing "Non-Contract" water, the LAS District reduces production of groundwater and increases its purchase of treated surface water from SCVWD during these periods. This has the effect of “banking” groundwater. When surface water supplies are more limited due to drought, SCVWD can and has imposed both voluntary and mandatory reductions in amount of its treated water it delivers to its customers including the LAS District. During periods of SCVWD supply reduction and because of increased groundwater storage, the LAS District increases groundwater pumping to make up the difference.

Because SCVWD recharges groundwater aquifers within its boundaries, it levies an assessment on the production of groundwater to the utilities it supplies to cover the costs associated with this program. During normal hydrologic periods, the groundwater pumping assessment is set so that the cost of pumping groundwater approximately equals the cost of purchased treated surface water from SCVWD. Because it is unknown whether "Non-Contract" water will be available when the purchase water schedules are prepared, and because "Non-Contract" water is only available in the months between October and April of the upcoming year, scheduling of deliveries is set to maximize the delivery of purchased water in the summer and utilize groundwater production capacity to its fullest during all other periods. This scheduling pattern enables the LAS District to take advantage of the economic incentive provided by the sale of "Non-Contract" water and in turn assist SCVWD in accomplishing the goal of groundwater storage of surplus supplies. SCVWD has scheduling restrictions regarding the purchase of direct deliveries. These restrictions currently limit the "Peak Day" deliveries to 180 percent of the average day delivery, and the maximum monthly delivery cannot exceed fifteen percent of the annual scheduled delivery.

SCVWD prepared a 2012 Water Supply and Infrastructure Master Plan (WSIP) which indicates that the basis for its sustainable water supply strategy is to: 1) secure existing supplies and infrastructure, 2) optimize use of existing supplies and infrastructure, and 3) increase recycling and conservation. The WSIP states it will “secure existing supplies and facilities for future generations”. In addition, SCVWD will make more effective use of its existing assets. It is committed to working with its retail utilities to meet Silicon Valley’s future increases in water demand through conservation and recycling. The 2012 WSIP takes into account climate changes and reduced imported supplies and is based on the 2010 UWMPs prepared by its member utilities. It is intended to be responsive to stakeholder needs and provide adequate supplies and delivery infrastructure through 2035. Baseline water supplies are expected to increase from the current average of about 398,000 AFY to an average of 421,000 AFY in 2035. The increase in

baseline supplies is due to removal of operating restrictions on existing reservoirs and increased non-potable water recycling. Baseline conservation savings are projected to increase from about 53,000 AFY in 2011 to about 99,000 AFY by 2030. These savings are expected to reduce demands on the water supply system and the need for more capital-intensive improvements. SCVWD indicates that adequate investment in its infrastructure system is critical to supply reliability. Some key elements of SCVWD's plan are:

1) ***Groundwater Recharge:*** new ponds will add about 3,300 AFY on average.
2) ***Reservoir Pipeline:*** A connection between Lexington Reservoir and the raw water system will provide greater flexibility in using existing local water supplies and will allow surface water from Lexington Reservoir to be put to beneficial use elsewhere in the county, especially when combined with the indirect potable reuse project. In addition, the pipeline will enable SCVWD to capture some wet-weather flows that would otherwise flow to the Bay. The pipeline will provide an average annual yield of 1,500 AFY.
3) ***Imported Water Reoperations:*** SCVWD will re-operate its Semitropic Groundwater Bank when it is nearly full and SCVWD water supply needs are otherwise met to sell or exchange up to 50,000 AFY of stored water. This would create additional space in the Semitropic Groundwater Bank for carryover of supplies during wetter years, maximize the value of SCVWD's existing assets (imported water contracts and investment in the Semitropic Groundwater Bank), and potentially help fund investments in infrastructure and additional local supplies.
4) **Increase Recycling and Conservation:** SCVWD's supply sustainability strategy relies upon development of indirect potable reuse to provide most of the new water supply to meet future water needs. The WSIP assumes that at least 20,000 AFY of advanced treated recycled water will be used for groundwater recharge by 2030. Currently, SCVWD is in the process of accelerating the expansion of its existing Silicon Valley Advanced Water Purification Center (SVAWPC) which has an existing production capacity of 8 mgd (8,970 AFY) to probably 32 mgd (35,870 AFY) by mid-2020 and using the product water for recharging groundwater aquifers for potable use.

SCVWD's retail utilities are preparing updated UWMPs in 2015. In turn, SCWVD will update its WSIP in 2016 using retail utility updated projected demands for determining SCVWD supply requirements. Denser redevelopment with increased water supply demand will occur within many of the communities supplied by SCVWD. Increase in demands due to redevelopment will likely result in additional supply requirements. How these will be met will be addressed in SCVWD's 2016 plan update. At this time, SCVWD believes it has adequate supplies and delivery infrastructure to meet retail utility demands as projected in all of its retail utilities 2010 UWMPs for normal, dry and drought conditions through 2035.

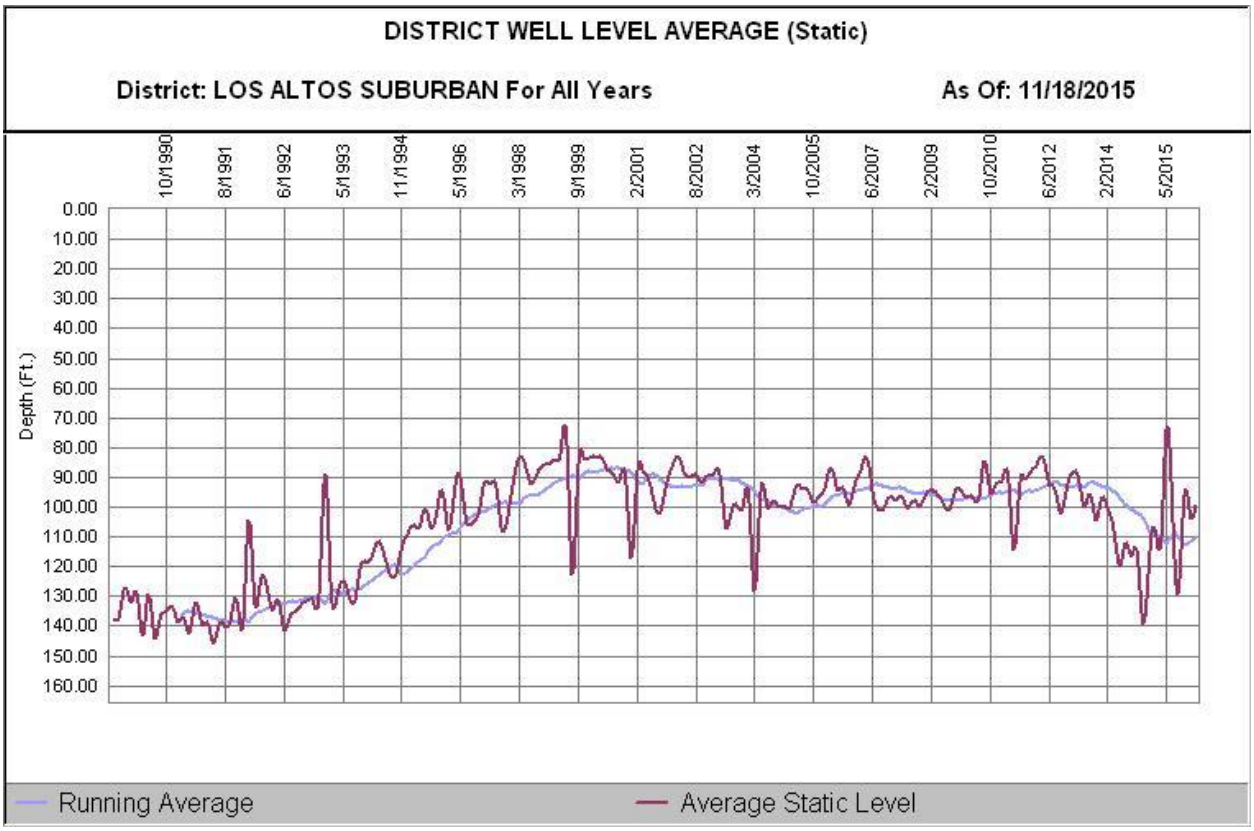
LAS District Groundwater

The LAS District has 20 wells, which are currently active and operational. The wells have a combined design capacity of 14,440 gpm, which is 20.79 million gallons per day (mgd). Operated continuously at 90% of design capacity, the wells could produce 20,980 AFY. While the LAS District has not had the need to operate its wells continuously, it has produced 650 to 750 AF in a given month or 9,000 AFY, which is only 43% of 20,980 AFY.

Maximum day demands, both current and projected, are supplied by deliveries of treated water from SCVWD. Production records show that average day demand reached a high of 13.83 mgd (15,504 AFY) in 2008 and has a ten-year average of 13.36 mgd, while maximum day demand reached 28.72 mgd with a ten-year average of 24.91 mgd. These values result in an average day to maximum day ratio of 1.86:1. The LAS District distribution system is designed to deliver anticipated maximum day demands.

Average static groundwater elevations in the District were relatively constant after the SCVWD began its recharge program. However, during the past 4 year drought period (from 2012 to 2015), the running average has declined about 18 feet as shown in Figure 7, which is still significantly better than before SCVWD's recharge program. Average static water levels in 1991 were 140 feet below ground surface versus 110 feet for 2015 – a difference of 30 feet. Over the period of record, average static levels have fluctuated due to hydrologic conditions. The extended multi-year drought in the early 1990's reduced groundwater surplus water and caused a 40-foot decline in static groundwater elevation. Drought recovery began in 1992, with an increase in the average static groundwater elevation to pre-drought levels, as shown in Figure 7.

Figure 7: LAS District Well Level Average (Static)



The historical quantity of LAS district groundwater pumped is shown in Table 9.

Table 9: LAS District Groundwater Pumped – AF					
Basin	**2006**	**2007**	**2008**	**2009**	**2010**
Santa Clara Subbasin	4,434	4,325	4,161	5,200	3,396
% of Total Water Supply	31%	28%	27%	37%	29%

Basin Boundaries and Hydrology

As described in DWR Bulletin 118 California's Groundwater, the Los Altos District is located in the Santa Clara sub-basin of the Santa Clara Valley Groundwater Basin. The Santa Clara sub-basin occupies a structural trough parallel to the northwest trending Coast Ranges. The Diablo Range bounds it on the East and the Santa Cruz Mountains form the Western border of Santa Clara County to the groundwater divide near Morgan Hill. The dominant geo-hydrologic feature is a large inland valley. The valley is drained to the north by tributaries to the San Francisco Bay including Coyote Creek, the Guadalupe River, and Los Gatos Creek. Additional details of the basin are given in DWR's Groundwater Bulletin 118; see Appendix D in the 2010 LAS UWMP.

Groundwater Management Plan

Groundwater quality and quantity in the Los Altos District are actively managed by SCVWD. SCVWD updates its Groundwater Management Plan (GMP) periodically.

Recycled Water

Use of recycled water reduces use of SCVWD water and pumping from Cal Water wells. This helps to increase groundwater storage and the sustainability of both supply sources. Currently, no recycled is used in the LAS District.

Cal Water, the City of Sunnyvale, SCVWD and Apple have signed an agreement to connect the Sunnyvale recycled water system to a new recycled pipe system to Cupertino to convey recycled water to the Apple Campus 2 site. The plan is to construct a recycled water transmission line to the LAS District to serve not only the Apple Campus 2 site, but also possible other sites such as the Hamptons housing project and the Vallco Specific Plan and Project.

The SCVWD Wolfe Road Feasibility Planning Study Report (December 2014), projected that transmission facilities will be completed and delivering recycled water by the end of 2016; however, that schedule may not be realistic. City of Sunnyvale recycled water would be conveyed through SCVWD transmission facilities to the LAS District's service area in Cupertino. The proposed project may have the capacity to convey up to 1,095 AFY. Apple Campus 2 will initially receive 176 AFY. The remaining conveyance capacity would be reserved for future increased recycled water uses at other sites in the area.

The City of Sunnyvale operates and maintains its sewer system for residential, commercial, and some industrial customers. Collected wastewater is discharged to trunk sewers owned and

operated by the City and conveyed to the Sunnyvale Water Pollution Control Plant for primary, secondary, and tertiary treatment followed by chlorination and dechlorination prior to disposal to the San Francisco Bay. The Sunnyvale treatment plant has a treatment capacity of 29.5 mgd but currently receives an average flow of 16.9 mgd. Under Phase 1, the plant supplies recycled water to meet a peak demand of 2 mgd for landscaping and some industrial uses. Recycled water is provided to City of Sunnyvale areas that are not in the LAS District service area. As part of Phase II of the Sunnyvale's plan, facilities to supply recycled water to parks and industrial areas located in the north part of the city near the treatment plant will be constructed.

In 2012, SCVWD constructed and currently operates an 8 mgd advanced water purification plant (uses micro-filtration, reverse osmosis and ultra-violet disinfection processes) adjacent to the San Jose/Santa Clara Water Pollution Control plant, which provides secondary effluent as source water. Currently, treated water is blended with treated water from the wastewater plant and is used for non-potable irrigation. As previously noted, SCVWD is currently planning to expand the recycled water treatment plant to 32 mgd and construct transmission facilities to convey treated water to recharge basins for replenishing groundwater supply for drinking water purposes.

Capital Improvements Program

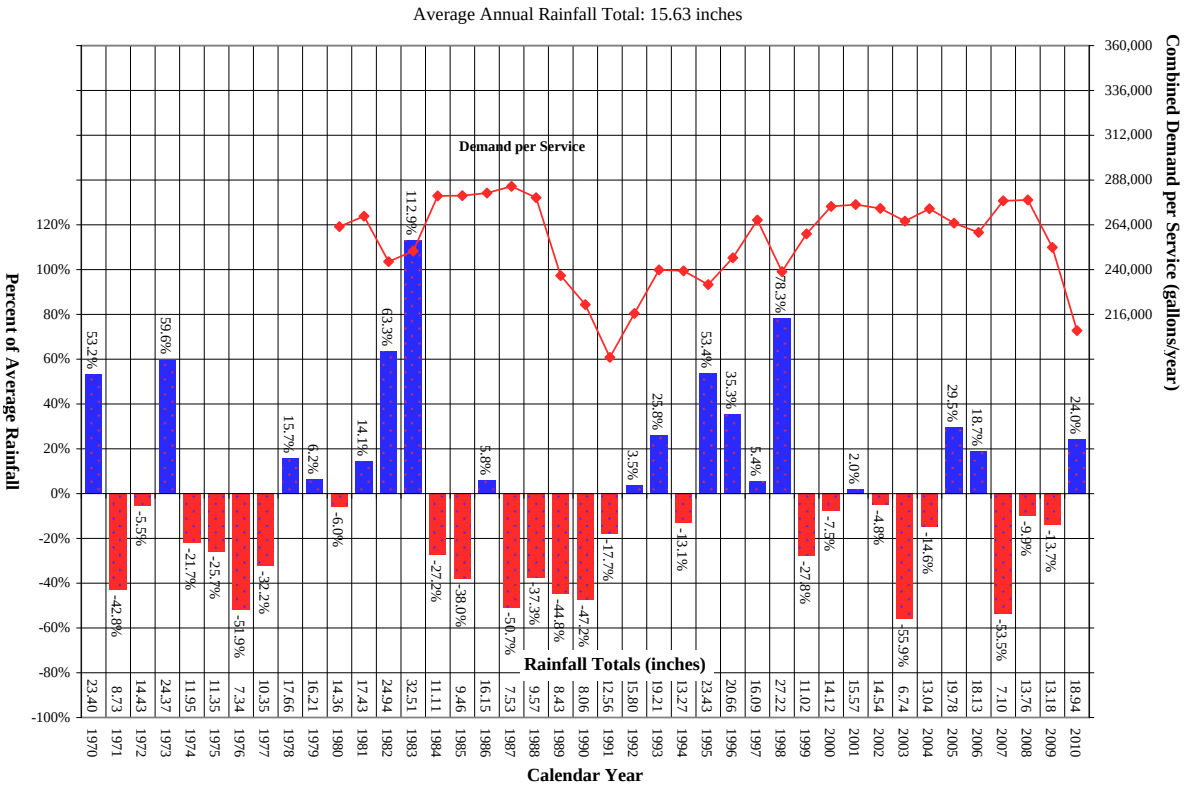
Cal Water has an ongoing capital improvements program for the LAS District. It assesses the operational condition and useful life of all of its wells, their production output and water quality to ensure compliance with state drinking water standards. The program includes repair, rehabilitation, replacement and development of new wells in order to ensure a reliable production capacity to meet 100% of average annual daily demand with sufficient reserve production capacity in the event several large production wells are non-operational for maintenance or other reasons. Capital improvements projects for a three year period are submitted to the CPUC for review and approval. In its general office in San Jose, Cal Water has a large multi-disciplinary engineering department and water quality department that works with the LAS District staff in implementing projects and ensuring their operational readiness on a timely basis.

Supply Adequacy and Reliability Assessment

This section combines and compares previously presented information on projected demand and supplies for the LAS District to address the question of whether its supplies are adequate and reliable for the next 20 years for normal hydrologic conditions, one dry year and a multiple dry year period. Note that supply always equals demand due to the fact that Cal Water can vary its groundwater production in response to the availability of SCVWD purchased water.

Figure 8 compares annual rainfall from 1970 to 2010 (40 years) to the historic average and shows the demand per service for each year. Water use generally increases in the first years of a dry period, but after increased conservation efforts are implemented, demand per service decreases.

Figure 8: LAS Area Annual Rainfall and LAS District Water Demand Per Service



The statewide drought of 1984 -1992 shows in the LAS District an increase in demand per service at the beginning of the drought period followed by decreasing demand as the drought persisted. Water use generally increases back to pre-drought levels after the drought. The drought from 2007-2009 shows the same pattern.

A normal hydrologic year occurred in 2001 when precipitation was approximately 2 percent above the historic average. In 2003, rainfall was approximately 56 percent below average (6.7 inches). This is taken as the single dry year shown in Table 10. Before the recent multiple dry-water years are based on the statewide drought between 2006 and 2009.

Table 10: LAS District: Basis for Water Year Type

Water Year Type	Base Year(s)
Normal Water Year	2001
Single-Dry Water Year	2003
Multiple-Dry Water Years	2006-2009

Annual customer demand in normal, single dry and multiple dry years is shown as overall average demand per service for the LAS District in Table 11. Water use follows a typical pattern where demand may decrease than slightly increase but then decreases more significantly as dry

years continue. Reduction in water use is the result of increased conservation efforts by water providers and general public awareness of drought conditions and their effect on water supplies.

Table 11: LAS District Customer Demand Variability – gal/service/yr

Average / Normal Water Year	Single Dry Water Year	Multiple Dry Water Years			
		Year 1	Year 2	Year 3	Year 4
274,797	265,969	259,893	276,800	277,271	251,879
% of Normal	97%	95%	101%	101%	92%

Historically, Non-Contract water has supplied a large portion of Cal Water's total supply requirements. However, this source is not considered a normally available supply. Non-Contract water deliveries have a five year average of 3,368 AF, which was 22 percent of the total supply to the Los Altos District for this period. Non-contract water will be the first source of supply to be eliminated and acts as a buffer for a single dry year or multi-year drought.

During multiple dry years, decreased purchase water is made up by pumping stored groundwater. Currently, active wells in the LAS District produce approximately 32 percent of their design capacity. Any reduction in non-contract water is replaced by groundwater pumping.

According to SCVWD's UWMP, if reductions in SWP and CVP deliveries occur due to drought events, the diversion of water to percolation ponds will be curtailed first, followed by agricultural deliveries, and finally urban water deliveries. When this happens an increased reliance will be put on production from stored groundwater, which increases during years of surplus surface water deliveries. Because of this policy, SCVWD anticipates that it will be able to meet all of its retail urban water demands by shifting supply sources even during multiple dry year periods.

Cal Water's well capacity is sufficient to accommodate reductions in treated water from SCVWD. The LAS distribution system has the ability to meet demands under reduced deliveries from SCVWD and increased use of Cal Water wells. LAS district groundwater supplies are not limited during multiple dry year periods. An adequate supply to meet projected demands is expected to be available during multiple-dry year events. During future dry periods customer water use patterns are expected to be similar to past events.

Normal Hydrologic Year

In normal hydrologic years, Non-Contract water is expected to be available. Cal Water also expects increases in approved SCVWD deliveries will eventually reduce availability of Non-Contract water. According to the SCVWD 2012 WIP, LAS District projected water scheduled delivery amounts will be available through at least 2035.

As previously indicated, the LAS district has historically pumped only a fraction of its total annualized well capacity, leaving the balance in groundwater storage. Because of this banking

practice, there is an adequate supply of stored groundwater in the aquifers supplying LAS district wells.

Total Cal Water pumped groundwater is the quantity necessary to make up the difference between LAS District demand and SCVWD supplies – both scheduled and Non-Contract deliveries. Hence, total supply always equals projected demand for any given year. Table 12 shows that annual groundwater use is projected to be relatively throughout the planning horizon and that no supply deficiencies are expected.

In 2040, for a normal hydrologic water year and no preceding sustained drought, the projected SCVWD water supply is estimated to be 12,500 AF, which is 2,000 AF more than what is estimated will be supplied 25 years earlier in 2015. If SCVWD has more surface water available for treatment, it could provide a higher amount of Cal Water's supply as Contract Water. However, Contract Water is not assumed here.

Table 12: Normal Hydrologic Year: Supply and Demand Comparison - AF

Water Supply Sources	2010	2015	2020	2025	2030	2035	2040
SCVWD Purchased Water	8,887	10,500	10,900	11,300	11,700	12,100	12,500
Groundwater Wells	3,892	3,940	4,182	4,059	3,949	3,853	3,770
Recycled Water	0	0	175	175	175	175	175
Total Supply = Demand	11,648	14,440	15,257	15,534	15,824	16,128	16,445

Single Dry Year

For a single dry year, Cal Water expects a reduction in Non-Contract water but not in firm scheduled deliveries. Pumping restrictions in the Delta could have a greater impact on imported supplies during a single dry year. But if any reduction in scheduled deliveries occurs, the needed supply would come from pumping stored groundwater.

SCVWD maintains carryover storage in its reservoirs, locally stored groundwater reserves, and has access of up to 50,000 AFY of drought supplies stored as groundwater in the Semitropic Groundwater Bank. Although SCVWD's 2010 UWMP indicates a 5 percent shortfall in treated water contract deliveries in 2020 and 2025, SCVWD in 2015 is accelerating its schedule for increasing production capacity of its SVAWPC plant to 32 mgd by 2020. Therefore, with implementation of this plant and other supply projects described SCVWD's Water Master Plan, it is assumed that there will be sufficient additional supplies so that all urban contract deliveries can be met during single dry years. Recycled water deliveries are not expected to be affected by a single dry year. If purchased water deliveries are reduced, groundwater pumped from Cal Water wells will provide the necessary supply to meet single dry year demand.

Based on the data in Table 11, LAS District demand for a single-dry year would be 97% of a normal hydrologic year demand. Cal Water has also observed in other one-year dry periods that demand has increased above normal hydrologic year demand. In light of this uncertainty,

demand during one dry year is treated here as the same as for normal hydrologic conditions. Therefore, demand and supply for a single dry year are the same as for a normal hydrologic year as shown in Table 13.

Table 13: One Dry Year: Supply and Demand Comparison - AF							
Water Supply Sources	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**	**2040**
SCVWD Purchased Water	8,887	10,500	10,900	11,300	11,700	12,100	12,500
Groundwater Wells	3,892	3,940	4,182	4,059	3,949	3,853	3,770
Recycled Water	0	0	175	175	175	175	175
Total Supply = Demand	11,648	14,440	15,257	15,534	15,824	16,128	16,445

Multiple Dry Year Period

SCVWD gives highest priority to delivery of Contract water to urban water retailers and indicates it will be deliver 100% of its contracted supply obligations even during multiple dry year periods after additional supply projects are implemented in 2025. During drought periods, SCVWD will eliminate deliveries of Non-Contract water. If drought conditions are severe enough, SCVWD will reduce or eliminate surface water recharging to aquifers within its service area. If further reductions are necessary, deliveries to agricultural customers will be reduced or eliminated. Deliveries to SCVWD urban water retailers are the last to be affected by drought conditions. Based on SCVWD supplies and policies, Cal Water expects that 100% of Contract water will be delivered to the LAS District during a multiple dry year period in 2030, 2035 and 2040. Cal Water will continue pump its LAS District wells so that there will be no reduction in total supply available to meet water demands.

Modeling results reported in SCVWD's 2010 UWMP uses the 6 year period from 1987-1992 as the baseline for future multiple dry year periods. Results indicate that supplies would be 100% reliable through the first three years of a similar dry year period. In the fourth year there is a maximum shortfall of 10% in 2035. For years 5 and 6, the projected shortfall in supply ranges between 10% and 20%. As recommended in DWR's UWMP guidance document, Cal Water's multiple dry year supply and demand comparison is based on the first three years of a multiple dry year period. For the fourth year, reduction of 10% in Contract water delivery is assumed and the difference will either be made up by inducing more customer demand reduction through intensified water conservation measures and/or pumping more groundwater from LAS district wells. Recycled water deliveries are expected to remain unchanged since the quantity of wastewater generated significantly exceeds the quantity of recycled water produced. Therefore, Cal Water believes its supplies are 100% reliable during multiple dry year periods through at least 2035.

In Table 14, 100% of normal supply of Contract Water is expected from 2020 through 2035 for the first three years of a multiple dry year period. This assumes that reservoir carryover storage in SWP, CVP, and local systems is average prior to the drought. At the beginning of a prolonged

drought period, it is also assumed that there are adequate quantities of groundwater stored in the aquifers that are pumped.

Cal Water also assumes that in future multiple dry year periods, SCVWD might ask for voluntary reductions in requested supply from 10% to 20%. The magnitude of reductions requested could increase depending on the degree and duration of the drought. SCVWD considers its groundwater and imported supplies as one source and does not distinguish between water sources when asking for demand reductions from its retail utilities. As a result, retail utilities would be asked to reduce total demand, not just imported water use. Cal Water expects that its LAS District customers will be able to achieve requested reductions in water use. In the LAS District, total annual water use per customer is expected to be lower than in previous dry year periods due to the greater investment in water conservation programs that are being implemented. As seen in 2015, the most recent drought year, the response by Cal Water customers in reducing water use has been significantly greater than anticipated based on past droughts due to improved water conservation plans, more effective communications on the need to reduce water use and a statewide directive for urban water use reduction from the Governor.

Table 14 compares demand to supply for a 4 year multiple dry year period. For the first three years, it is conservatively assumed that demand remains unchanged from a normal hydrologic year and that in the fourth year, demand decreases by 20% and the delivery of SCWVD Contract water is reduced by 20%. For all four years, total supply is projected to meet 100% of resultant demand. It is noted that even if demand did not decrease by 20% in year 4 and SCVWD supply was reduced by 20%, the increased groundwater supplied in 2040 would be 6,270 AF, which can be pumped by the LAS District by operating its wells for longer periods

Table 14: Multiple Dry Year Period (4 Years): Supply and Demand Comparison - AF

	2015	2020	2025	2030	2035	2040
Total Demand: Years 1 - 3	14,440	15,257	15,534	15,824	16,128	16,445
SCVWD Purchased	10,500	10,900	11,300	11,700	12,100	12,500
Recycled Water	0	175	175	175	175	175
Cal Water Wells	3,940	4,182	4,059	3,949	3,853	3,770
Total Supply	14,440	15,257	15,534	15,824	16,128	16,445
Difference	0	0	0	0	0	0
Total Demand: Year 4		12,206	12,427	12,659	12,902	13,156
SCVWD Purchased		8,720	9,040	9,360	9,680	10,000
Recycled Water		175	175	175	175	175
Cal Water Wells		3,311	3,212	3,124	3,047	2,981
Difference	0	0	0	0	0	0

CLIMATE CHANGE

Cal Water prepared a Climate Assessment Report in 2013 that evaluates potential effects of climate change on the water supplies of its 24 service areas in California. The report identifies adaptation measures that Cal Water may take to address potential decreases in supply quantities or negative changes in source water quality. DWR's *Guidebook to Assist Water Suppliers to Prepare a 2010 Urban Water Management Plan,* lists topics examined in Cal Water's Climate Assessment Report.

Adaptation measures are essentially designed to ensure that projected future supplies are reliable despite adverse changes in existing supply quantity and quality due to climate change. For example, snow in the Sierra Nevada provides 65 percent of California's water supply. Some predictions are that by 2050 the annual Sierra Nevada snow pack will be significantly reduced. Much of the lost snow will be in the form of rain, which will run off during winter and early spring and not be available to be stored as supplies for use during summer. Change in water runoff may significantly reduce groundwater recharge in the Central Valley increasing demands on surface water.
DWR continues to work on identifying potential climate change effects on water supplies, water demand, sea level, and occurrence and severity of weather events. Some potential changes are summarized below:

- Water demand: more hot days and nights and a longer irrigation season will increase agricultural and urban irrigation needs; power plants and industrial processes will have increased cooling water needs.
- Water supply and quality: increased potential for algal bloom and surface and groundwater chemistry changes; increased potential for seawater intrusion into surface and groundwaters due to elevated seawater levels and more powerful storm surges.
- Extreme weather events are expected to become more frequent as climate variability increases, resulting in a higher frequency of more extreme droughts and floods.

WSA SUMMARY AND CONCLUSION

Based on:

- Adequacy of existing and planned supplies from SCVWD and LAS District groundwater,
- Cal Water's ongoing capital improvements program to maintain existing groundwater production capacity and construct new wells to increase well production capacity,
- Existing Agreements and plans to continue to purchase SCVWD Non-Contract water whenever it is made available and increase basin groundwater storage for use during drought periods,
- In-place, ongoing and planned expanded water conservation programs and best management practices for reducing demand during normal hydrologic years, single dry year and multiple dry years in compliance with SBx7-7, CPUC and MOU requirements,
- Cal Water's historic proven success in obtaining increased reductions in water use during multiple dry years by implementing its demand reduction program, and
- Over 88 years of experience in continuously providing an adequate supply to meet demands during normal, single and multiple dry years in the LAS District,

Cal Water concludes that for the next 20 years (2015 – 2035), the LAS District will have adequate

water supplies to meet projected demands of the proposed Hamptons Project and those of all existing customers and other anticipated future customers for normal, single dry year and multiple dry year conditions.

References

1. California Water Service Company "Urban Water Management Plan LAS District" Adopted June 2011, 949 B Street, Los Altos, CA 94024 https://www.calwater.com/conservation/uwmp/rd/

2. Santa Clara Valley Water District "2012 Water Supply and Infrastructure Master Plan" October 2012

3. Santa Clara Valley Water District "Wolfe Road Facilities Planning Study Report" December 2014