APPENDIX C – TM NO. 3, WATER SUPPLY INVENTORY AND ASSESSMENT – WATER SUPPLY, DEMAND, AND WATER QUALITY

TECHNICAL MEMORANDUM NO. 3

Date: March 29, 2010 (Updated 1/21/11)

To: JOSE GUTIERREZ, CAROLLO ENGINEERS

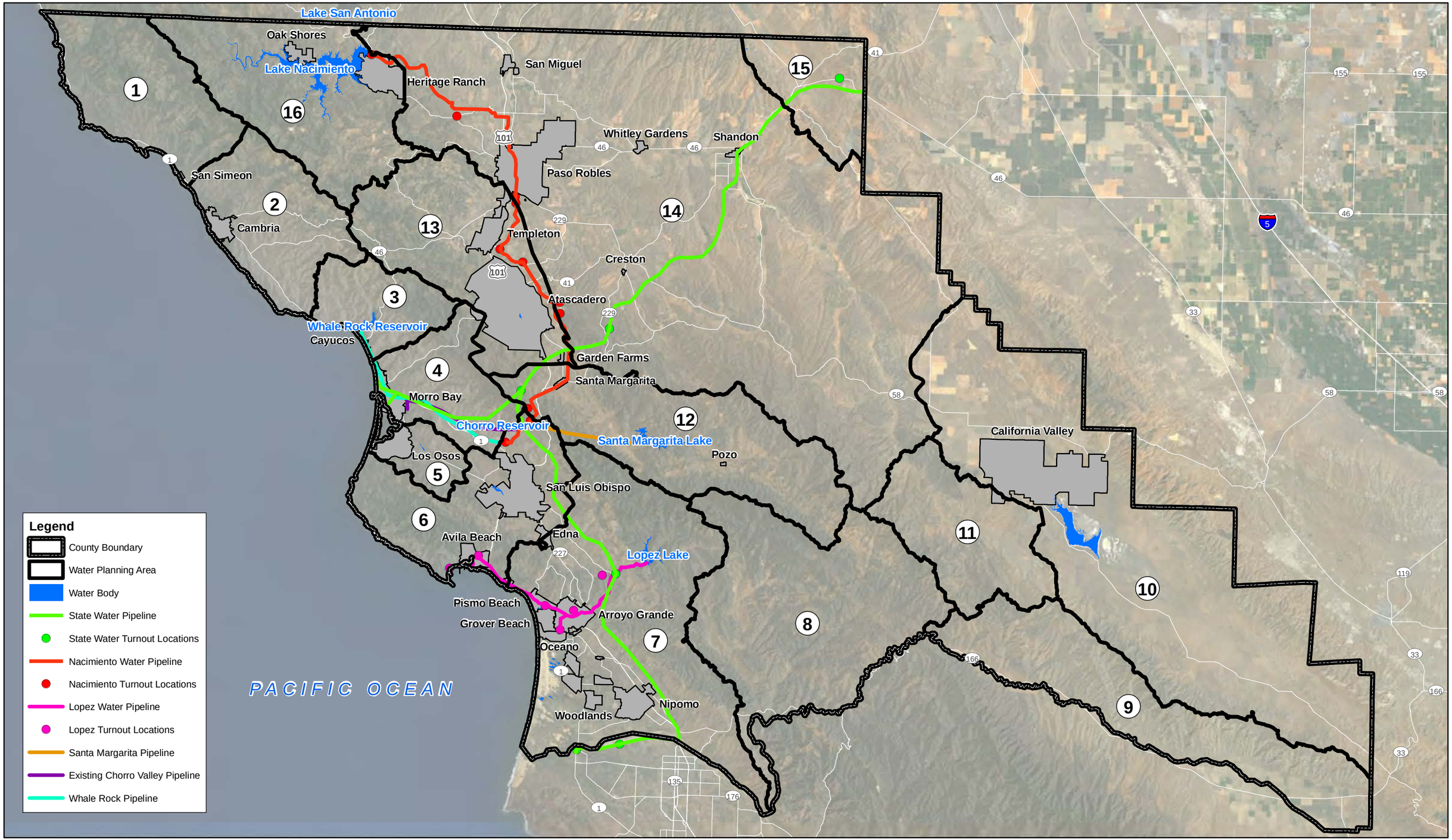
From: STEVE TANAKA, WALLACE GROUP

Subject: TASK C.3 WATER SUPPLY INVENTORY AND ASSESSMENT – WATER SUPPLY, DEMAND AND WATER QUALITY

In conjunction with Fugro West, Inc. and Cleath-Harris Geologists, we are submitting this technical memorandum No. 3 (TM) for Task C.3, Water Supply Inventory and Assessment. This TM focuses on water purveyor water supply, demand and water quality throughout the County. This TM includes a general overview of water supply resources, and more detailed descriptions of water supply for each purveyor (in each corresponding section). This TM also describes the various agreements/contracts of each purveyor with respect to water allocations, and cooperative agreements between multiple parties for overall management of shared water resources. Finally, this TM No. 3 includes an overview of water qualities of the various purveyors throughout the County.

SURFACE WATER RESOURCES

Water is drawn from a number of surface sources, both inside and outside of the County. This section describes the reservoirs in and out of the County that are used as water supply sources within the County. It also includes a brief description of the State Water Project. Allocations and key user agreements are described for each water source. Figure 3.1 shows the location of the conveyance systems for these sources.



San Luis Obispo County Flood Control and Water Conservation District

MASTER WATER PLAN

WATER CONVEYANCE MAP

FIGURE 3.1

STATE WATER PROJECT

The California Department of Water Resources (DWR) owns and operates the State Water Project (SWP). It is the largest state-built water and power project in the United States. The SWP first started delivering water to Californians in the 1960s and in 1963 the San Luis Obispo County Flood Control and Water Conservation District (District) contracted with DWR for 25,000 acre feet per year (AFY) of State Water. The SWP began delivering water to the Central Coast in 1997 upon completion of the Coastal Branch conveyance and treatment facilities, serving Santa Barbara and San Luis Obispo counties.

The treatment facility for State Water delivered through the Coastal Branch, known as the Polonio Pass Water Treatment Plant (PPWTP), is owned, operated and maintained by the Central Coast Water Authority (CCWA) for users in San Luis Obispo and Santa Barbara Counties. The Coastal Branch conveyance system is owned by DWR, which also operates and maintains the raw water portion of the system. The portion of the aqueduct that conveys treated water is operated and maintained by CCWA. Agreements between CCWA, Santa Barbara County Flood Control and Water Conservation District, District and DWR are in place to establish these roles and relationships.

In San Luis Obispo County, decisions were made in the early 1990's by local municipalities and water purveyors that led to Water Service Amount (WSA) requests for portions of the District's allocation of State Water. After extensive policy discussions regarding the use of State Water, the District entered into Water Supply Agreements with the agencies identified in Table 3.1. Master Water Treatment and Coastal Branch construction agreements with CCWA were also approved for treatment of 4,830 AFY of State Water, the cumulative total of WSA requests.

The SWP is considered a supplementary source of water supply as hydrologic variability, maintenance schedules, and repair requirements can cause reduced deliveries or complete shut down of the delivery system. Since delivery to the Central Coast began, the SWP has provided between 50 and 100 percent of the contracted allocations, but drought coupled with pumping restrictions in consideration of endangered species habitat lowered that amount to 35 percent in 2008 and 40 percent in 2009. To receive a greater portion of State Water, up to their full WSAs, during these shortages, most agencies have entered into "Drought Buffer Water Agreements" with the District for use of an additional portion of the District's SWP allocation, as shown in Table 3.1. For example, when the SWP can only deliver 50% of contracted allocations, an agency with a 100 AFY WSA and a 100 AFY drought buffer allocation can still receive its 100 AFY WSA – 50% of their 100 AFY WSA plus 50% of their 100 AFY drought buffer allocation equals 100 AFY.

Table 3.1 also illustrates that the District has 15,273 AFY of unsubscribed SWP allocation (District allocation (25,000 AFY) minus Total Reserved (9,727 AFY) equals 15,273 AFY), commonly referred to as the "excess allocation." Hydraulics, treatment plant capacity, and contractual terms and conditions limit how the excess allocation can be used. The following is a list of options for use of this excess allocation that will be evaluated in the MWP:

- Direct delivery after contract-revision negotiation for use of any additional capacity available in the Coastal Branch treatment and conveyance facilities;
- As additional drought buffer water;
- Via permanent, multi-year or single year transfer or exchange; and/or
- After groundwater or surface storage.

Table 3.1: District State Water Project Contractors

Contractor	WSA	Buffer	Total Reserved	6% Allocation Year (1977) (1)	66-69% Allocation Year (1)	100% Allocation Year (1)	WPA
Chorro Valley Turnout							
Morro Bay, City of	1,313	2,290	3,603	216	1,313	1,313	4
California Mens Colony	400	400	800	48	400	400	4
County Operations Center	425	425	850	51	425	425	4
Cuesta College	200	200	400	24	200	200	4
Subtotal	**2,338**	**3,315**	**5,653**	**339**	**2,338**	**2,338**	
Lopez Turnout							
Pismo Beach, City of	1,240	1,240	2,480	149	1,240	1,240	7
Oceano CSD	750	0	750	45	495	750	7
San Miguelito MWC	275	275	550	33	275	275	6
Avila Beach CSD	100	0	100	6	66	100	6
Avila Valley MWC	20	60	80	5	20	20	6
San Luis Coastal USD	7	7	14	1	7	7	6
Subtotal	**2,392**	**1,582**	**3,974**	**238**	**2,103**	**2,392**	
Shandon	100	0	100	6	66	100	14
Subtotal	**100**	**0**	**100**	**6**	**66**	**100**	
Total	**4,830**	**4,897**	**9,727**	**584**	**4,507**	**4,830**	

Notes:
1. Minimum, average, and maximum allocations established in the State Water Project Delivery Reliability Report 2007 (August 2008), page 51, Table 6.13.
This study used 66% for the average allocation year.

SWP Reliability

Future SWP deliveries to the District and SWP subcontractors within the County will be affected by many factors, including Delta pumping restrictions and climate change. Estimating the delivery reliability of the SWP depends on many issues, including possible future regulatory standards in the Delta, population growth, water conservation and recycled efforts, and water transfers. The California Department of Water Resources (DWR) published the State Water Project Delivery Reliability Report 2007 (August 2008). The report estimates future (2027) SWP delivery reliability and incorporates the 2007 federal court ruling for Delta pumping and potential impacts of future climate change. When compared to previous reliability reports, total annual deliveries for 2027 show decreases in deliveries in most years if no actions are taken to address the factors causing the decrease in availability. It is important to recognize that actions to re-establish reliability are being evaluated by DWR, State Water Contractors, and other State and Federal agencies. Future actions may include new environmental efforts as well as infrastructure improvements envisioned when the SWP was originally scoped in the 1960s.

Table 6.13 from the 2007 DWR reliability report contains the average, maximum, and minimum estimates of SWP Table A deliveries from the Delta under future conditions. Table 6.13 shows that average SWP delivery amounts may decrease from 8 to 11 percent of maximum SWP Table A amounts as compared to average SWP delivery amount estimates from previous reliability studies. In the 2005 DWR reliability report, delivery amounts were projected to be

77% of maximum SWP Table A amounts on average. The 2007 DWR reliability report projects delivery amounts to be 66 – 69% of maximum SWP Table A amounts on average. The decrease in deliveries is primarily due to flow targets related to Delta smelt, which reduces the amount of Delta water available for export by the SWP and the assumed hydrologic changes associated with climate change.

Table 3.1 not only lists the WSA, drought buffer, and total reserve allocations for the District, but it also provides the average, maximum single year and minimum single year allocations based on the range of deliveries presented in Table 6.13 from the 2007 reliability report. The minimum, average, and maximum deliveries were 6, 66, and 100 percent of the maximum SWP Table A allocations, respectively. For long term planning, it is assumed that SWP contractors will receive 66 percent of the maximum allocation in a given year. The allocations presented in Table 3.1 include the drought buffer (if applicable).

NACIMIENTO WATER PROJECT

The Nacimiento Dam was constructed in 1957 by Monterey County Flood Control and Water Conservation District (now known as the Monterey County Water Resources Agency (MCWRA)). The dam and reservoir continue to be operated by MCWRA. The lake has a capacity of 377,900 acre feet and a surface area of 5,727 acres. Water is collected from a 365.1 square mile watershed that is comprised of grazing lands and rugged wilderness.

In 1959, the District secured the rights to 17,500 AFY from Lake Nacimiento, with 1,750 AFY reserved for lakeside users and the Heritage Ranch Community Services District (CSD). After a long series of studies and negotiations, the Nacimiento Water Project (NWP) was initiated. The NWP is the single largest project that the District has ever undertaken. The total project cost, including design, construction, construction management, environmental permitting, and right-of-way, is approximately $176 million. Water deliveries are slated to begin in 2010. The project will deliver raw lake water from Lake Nacimiento to communities within San Luis Obispo County. Participating entities and their contracted water amounts are listed in Table 3.2.

Table 3.2: NWP Participants

Participants	Allocation (AFY)
City of Paso Robles	4000
Templeton CSD	250
City of San Luis Obispo	3380
Atascadero MWC	2000
CSA 10 A (via exchange)*	25
TOTAL	9655

*See Whale Rock Reservoir Operating Agreements

Though the participants have contracted for 9,655 AFY, the northern portions of the pipeline and appurtenances have been designed for the maximum allowable withdrawal amount of 15,750 AFY. Decreasing percentages of excess capacity are also designed into the southern reaches of the project. It is expected that additional allocations will be purchased in the future by existing participants or other entities. The mechanism by which the participation requests of other entities are considered varies depending on whether or not the entity was a part of the Environmental Impact Report (EIR). If the entity was a part of the EIR, it can proceed directly to the District Board of Supervisors for consideration. If it was not a part of the original EIR, it must consult with the Nacimiento Project Commission and obtain written support from existing

participants that represent at least 55% of existing subscription amounts before proceeding to the District Board of Supervisors for consideration.

WHALE ROCK RESERVOIR

Whale Rock Reservoir is located on Old Creek Road approximately one half mile east of the community of Cayucos. The project was planned, designed, and constructed under the supervision of the State Department of Water Resources. Construction took place between October 1958 and April 1961. The reservoir is jointly owned by the City of San Luis Obispo, the California Men's Colony, and Cal Poly. These three agencies, with the addition of a representative from the Department of Water Resources, form the Whale Rock Commission which is responsible for operational policy and administration of the reservoir and related facilities. Day-to-day operation is provided by the City of San Luis Obispo.

Whale Rock reservoir is formed by an earthen dam and was able to store an estimated 40,662 acre-feet of water at the time of construction. The calculation of the yield available is coordinated with Salinas Reservoir using a safe annual yield computer model. The model also evaluates the effect of siltation. The Whale Rock Commission has budgeted for a siltation study to be undertaken in the near future.

Operating Agreements

Several agreements establish policy for the operation of the Whale Rock system and actions of the member agencies. A brief description of the existing agreements follows:

A) Agreement for the construction and operation of the Whale Rock Project, 1957, set forth the project's capital cost distribution to the member agencies.

B) A supplemental operating agreement, 1960, established the Whale Rock Commission and apportioned the operating costs.

C) Downstream water rights agreement (the original 1958 agreement was amended in April 1996) defining water entitlements for adjacent and downstream water users. The Cayucos Area Water Organization (CAWO) affected by this agreement consists of three public water purveyors and the cemetery, all in the Cayucos area. In addition to the agencies, water entitlements were identified for two separate downstream land owners. Entitlements are as follows (units of AFY):

Cayucos Area Water Organization (CAWO)[1]	
Paso Robles Beach Water Association	222
Morro Rock Mutual Water Company	170
County Service Area 10A	190
Cayucos-Morro Bay Cemetery District	18
Mainini Ranch	50
Ogle	14
Total Downstream Entitlement	664

The agencies generally receive their entitlements via pipeline from the reservoir, while the land owners' entitlement is released from the reservoir.

D) A decision and order by the Fish and Game Commission of the State of California, October 24, 1964, required the Whale Rock Commission to stock the reservoir with

[1] The referenced agreement establishes the amount of 600 AFY to CAWO. The allocations to the CAWO members are part of an internal agreement amongst the members.

17,500 rainbow trout (between six and eight inches long) each year. Subsequent DFG decisions have prohibited restocking with rainbow trout.

E) Superior Court decision #36101, 1977, required the Whale Rock Commission to allow public entry to the reservoir for fishing. In 1981, construction was completed on access trails and sanitary facilities at the reservoir, and public fishing began at the lake.

F) An agreement for water allocation and operational policy between the agencies forming the Whale Rock Commission. The agreement established the accounting procedures to allow each agency to carry over excess or deficit water each year.

G) An agreement between the Whale Rock Commission and the California Men's Colony, 1990, to establish maintenance and operation criteria for the Chorro Booster pumps. The Chorro Booster pumps were installed by the Commission on the California Men's Colony turnout from the Whale Rock line to reduce system pressures required to provide full flow to the California Men's Colony water treatment plant. Pump and pump station maintenance, per the agreement, are the responsibility of the California Men's Colony.

H) An agreement between the Whale Rock Commission and the County of San Luis Obispo for connection to the Whale Rock pipeline, 1995, allowed a pipeline connection to deliver water to the Dairy Creek Golf Course. Typically, the golf course uses recycled water from the California Men's Colony. Water from Whale Rock Reservoir can be delivered when recycled water is not available under the terms of the agreement.

I) A consent to common use agreement, 1996, between the Whale Rock Commission and the County of San Luis Obispo. The agreement allowed the installation of the State Water pipeline at seven locations within the existing Whale Rock pipeline easement.

J) A mutual aid agreement between the Whale Rock Commission and the City of Morro Bay, 2000, relative to water resources in the event of an emergency.

K) An exchange agreement, 2005, between CSA 10A and the City of San Luis Obispo allowing the delivery of up to 90 AFY of the City's Whale Rock water allocation to CSA 10A in exchange for CSA 10A's purchase of an equivalent amount of Nacimiento Water for delivery to the City. The anticipated need for CSA 10A is 25 AFY at build-out.

The following table below summarizes the current capacity rights for the joint right-holders (downstream water rights are accounted for separately).

Table 3.3: Whale Rock Reservoir Allocations

Water Users	%	AF
City of San Luis Obispo:	55.05	22,383
Cal Poly	33.71	13,707
CMC	11.24	4,570
TOTAL	100	40,660

Each rights-holder manages reservoir withdrawals individually from their available water storage allocation. The Whale Rock Commission tracks withdrawals and reports available volume on a monthly basis.

LOPEZ LAKE/RESERVOIR

The San Luis Obispo County Flood Control and Water Conservation District completed the Lopez Dam in 1968 to provide a reliable water supply for agricultural and municipal needs as well as flood protection for coastal communities. Lopez reservoir has a capacity of 49,388 AF.

The lake covers 950 acres and has 22 miles of oak covered shoreline. Allocations for Lopez water are based on a percentage of the safe yield of the reservoir, 8,730 AFY. Of that amount, 4,530 AFY are for pipeline deliveries and 4,200 AFY are reserved for downstream releases. The dam, terminal reservoir, treatment and conveyance facilities are a part of Flood Control Zone 3.

The agencies that contract for Lopez water in Zone 3 include the communities of Oceano, Grover Beach, Pismo Beach, Arroyo Grande, and County Service Area (CSA) 12 (including the Avila Beach area). Their allocations are shown in the table below.

Table 3.4: Lopez Lake Allocations

Water Users	AFY
City of Pismo Beach	896
Oceano CSD	303
City of Grover Beach	800
City of Arroyo Grande	2290
CSA 12	241
TOTAL	4530

There are two developments that could change both the amount of water available to contractors and the safe yield. The Arroyo Grande Habitat Conservation Plan, which is currently being developed, will likely require additional downstream releases. An interim downstream release schedule has reduced the amount of water available to municipalities. Changes in operation of the dam are being considered for reducing spills and optimizing future deliveries. Additionally, the City of Pismo Beach, on behalf of the Zone 3 agencies, has taken the lead on conducting a study to consider the feasibility of modifying the dam to augment capacity of the reservoir.

SANTA MARGARITA LAKE/SALINAS RESERVOIR

The Salinas Dam was built in 1941 by the War Department to supply water to Camp San Luis Obispo and, secondarily, to meet the water needs of the City of San Luis Obispo. The Salinas Reservoir (Santa Margarita Lake) captures water from a 112 square mile watershed and can currently store up to 23,843 acre-feet. In 1947, the Salinas Dam and delivery system was transferred from the regular Army to the U.S. Army Corps of Engineers. Shortly thereafter, the San Luis Obispo County Flood Control and Water Conservation District began operating this water supply for the City under a lease from the U.S. Army Corps of Engineers. Water from the reservoir is pumped through the Cuesta Tunnel (a one mile long tunnel through the mountains of the Cuesta Ridge) and then flows by gravity to the City's Water Treatment Plant on Stenner Creek Road. Transfer of dam ownership to the District from the U.S Army Corps of Engineers is under consideration.

The original design of the dam included spillway gates that would have increased capacity to an estimated 45,000 AF, and an increase in safe annual yield of 1,650 AFY. Though these gates were not installed due to safety concerns, more recent studies have shown that gates could be installed in conjunction with structural improvements to the dam. With its participation in the Nacimiento Water Project, the City has concluded that plans for expansion of the Salinas Reservoir should be put on hold. There is a possibility that this expansion right might be eliminated from the City's Water Rights Permit when it is renewed or licensed after December 2010.

The City withdrawals are coordinated with Whale Rock Reservoir using a safe annual yield computer model. The City's combined safe yield of the two reservoirs was 6950 AFY in 2009. The model also evaluates the effect of siltation.

CHORRO RESERVOIR

(Information for this section was taken from an interview with John Kellerman, the Plant Manager at the California Men's Colony and from the 2003 Chorro Valley Study).

The Chorro Reservoir is located approximately ¾ of a mile northeast of the California Men's Colony (CMC) in the upper Chorro watershed. The Chorro Reservoir is part of the Chorro Valley Water System operated by CMC. The system provides storage, treatment and distribution to four major users:

- The California Men's Colony (CMC)
- Camp San Luis Obispo/California National Guard (CSLO)
- San Luis Obispo County Operational/Education Centers (SLOCo)
- Cuesta Community College (Cuesta)

The reservoir and treatment plant were constructed by the US Army Corps of Engineers to provide water to Camp San Luis Obispo at the beginning of World War II. The net storage capacity of the Chorro Reservoir has decreased since it was constructed due to sedimentation, and was estimated to be 105 acre-feet, based on a study prepared by DWR in 1989. More recent studies indicate that the capacity is currently closer to 90 acre-feet. Safe annual yield is considered to be 140 AFY, as the watershed provides much more than what can be stored in the reservoir, even in drought years. It is worth noting that water demand at the Camp, both during the war and subsequently, has been met almost exclusively through surface flows to the reservoir from the Chorro watershed and from groundwater wells on the Camp property. Although the Salinas Reservoir waterline was extended from the Cuesta Water Tunnel to the Chorro Reservoir as part of the original improvements in World War II, the pipeline has only been used to convey water from the Salinas Reservoir to the Camp twice since construction.

CSLO has priority rights to water from Chorro Reservoir, with entitlement to 140 AFY. CMC has right to any excess. The Mainini Ranch has an agreement with CSLO for a delivery of up to 25 AFY, but has only used an average of 5 to 7 AFY over the past decade. For further discussion on agreements related to the Chorro Reservoir, see the description of the Chorro Valley Water System.

TWITCHELL RESERVOIR

Twitchell Dam is on the Cuyama River about 6 miles upstream from its junction with the Sisquoc River. Though the dam is located in Santa Barbara County and operated by the Santa Maria Valley Water Conservation District (SMVWCD), the reservoir straddles the county line and some agricultural land within San Luis Obispo County is irrigated from the Santa Maria Groundwater Basin replenished by the reservoir. The multiple-purpose Twitchell Reservoir has a total capacity of 224,300 acre-feet. It stores floodwaters of the Cuyama River, which are released as needed to recharge the ground-water basin and to prevent salt water intrusion. The reservoir supplies on average 32,000 AFY of recharge to the Santa Maria Groundwater Basin, though this value fluctuates significantly relative to annual precipitation. Because the reservoir is managed for flood control and groundwater recharge, the reservoir is empty much of the time. A majority of the groundwater flows towards the ocean, though a small gradient flows seasonally to the Nipomo Mesa.

OTHER WATER SUPPLY SOURCES

Other water supply sources in the County include seawater/brackish water desalination, recycled water (from municipal wastewater treatment plants), water conservation, and decentralized water supply opportunities.

Desalination

In the County, there is only one operating desalination facility, that being the City of Morro Bay's desalination plant. In the past the City has used the salt water reverse osmosis (SWRO) treatment plant to treat water from saltwater wells and to remove nitrates from fresh water wells. Recently the City completed the installation of two 450 gallons per minute (gpm) brackish water reverse osmosis (BWRO) treatment trains. The addition of these treatment processes will enable the City to treat both fresh water and salt water wells simultaneously, and will also reduce the energy usage of the facility as well. The SWRO trains are designed to produce approximately 645 AFY of potable water from sea water. The BWRO system is capable of treating the entire 581 AF of Morro Basin groundwater that the City can extract by permit.

Other Desalination Projects. The Cambria CSD has been striving to develop a seawater desalination plant to meet existing and future water demands. This plant, if implemented, is expected to produce up to 602 AFY. This plant will operate during the summer season to augment supply during the summer and high demand period (from summer tourism). A recycled water system is also planned, with an estimated 180 AFY made available for unrestricted irrigation use.

Three agencies, the City of Arroyo Grande, the City of Grover Beach, and the Oceano Community Services District (Agencies), participated in the evaluation of a potential drought-proof water supply, seawater desalination, to supplement their existing potable water sources. Currently, all three Agencies receive water from various sources, including: the California State Water Project, Lopez Lake Reservoir, and groundwater from the Arroyo Grande Plain/Tri-Cities Mesa Groundwater Basin. Recent projections of water supply shortfalls in the region motivated the Agencies to conduct a more detailed study of desalination as a supplemental water supply. The study focused on utilizing the existing South San Luis Obispo County Sanitation District's (SSLOCSD) wastewater treatment plant site to take advantage of utilizing the existing ocean outfall, while having the plant located near the ocean seawater source. The feasibility study, completed in 2008, was based on a 2,300 AFY seawater desalination facility. Some of the major points of interest and concern of this study include:

- Some 20 or more beach wells may be needed to provide enough seawater to produce the 2,300 AFY potable water.
- Permitting and environmental issues could be complex, and implementation could take 8 years or longer.
- Initial capital cost could be in the range of $35 million, and customer rates could be impacted by 18% to over 100% to fund the project, and would cost in the neighborhood of $2,300 per AF or more, on a 20-year life cycle basis.

Water Recycling

There are several purveyors and agencies that recycle municipal wastewater in the County. Details of each purveyor or sanitary agency's recycled water program is discussed in detail in the corresponding sections later in this chapter. Recycled water qualities range from secondary quality (as defined by Title 22 CCR) to the highest level of treatment, tertiary 2.2 quality for unrestricted use. The most established water recycling program in the County is that of the City of San Luis Obispo. The City currently delivers 135 AFY to nearby golf courses, schools and commercial establishments, with expectations of augmenting up to 1,000 AFY of potable water with recycled water for irrigation. The City also must maintain discharge to San Luis Obispo Creek, and this flow amounts to approximately 1,800 AFY. Other water recycling projects in the County include:

- Nipomo CSD (Blacklake WWTP, Southland WWTP)
- California Men's Colony (Dairy Creek Golf Course)
- Templeton CSD (Meadowbrook WWTP/recharge Salinas River underflow)
- City of Atascadero WRF (Chalk Mountain Golf Course)
- Rural Water Company (Cypress Ridge Golf Course)
- Woodlands MWC (Monarch Dunes Golf Course)

Water Recycling Studies and Potential Future Recycling Projects. Numerous agencies have undertaken recycled water feasibility studies, to determine the viability of developing recycled water projects. Such agencies include, but may not be limited to:

- San Simeon CSD
- Cambria CSD
- City of Morro Bay/Cayucos Joint WWTP
- City of Paso Robles
- South San Luis Obispo County Sanitation District (SSLOCSD) WWTP
- City of Pismo Beach
- Avila Beach CSD/Port San Luis
- Los Osos CSD

SSLOCSD Recycled Water Feasibility Study Update. In 2001, the SSLOCSD conducted a recycled water feasibility study, with the assistance of State SRF grant funds. The South San Luis Obispo County Sanitation District (SSLOCSD) provides wastewater services to the Cities of Arroyo Grande and Grover Beach, the community of Oceano, and a small amount of unincorporated County territory.

Presently the SSLOCSD facility has a wastewater treatment capacity of 5.0 MGD (5,600 AFY). The treatment facility currently processes 2.8 MGD (3,136 AF/YR) of wastewater from the service area. Additionally, the City of Pismo Beach shares the use of the effluent outfall line discharging approximately 1.2 MGD in addition to the District's flow. The City of Pismo Beach wastewater plant has a permitted capacity of 1.75 mgd.

The updated study, completed in 2008, included "traditional" alternatives to irrigate turf and landscaping with secondary (where allowed) and tertiary effluent. Brief summaries of these additional alternatives are as indicated in the following paragraphs. A summary of costs is presented in Table 2.2 (taken from the Recycled Water Feasibility Study Report in its entirety).

- Stream flow augmentation. Tertiary recycled water would be piped to just below Lopez Dam, and discharged to Arroyo Grande Creek, thus "freeing up" possibly 4,200 AFY water that must otherwise be released from Lopez Dam for environmental stream flow. Due to projected high chloride levels, the alternative would likely require reverse osmosis treatment or other means of reducing overall TDS and chloride levels.
- Agricultural Irrigation There are approximately 3,000 acres of agricultural land in production, with in 3 miles of the SSLOCSD WWTP. Upgrading the plant to produce tertiary 2.2 effluent, and using the recycled water for crop irrigation could utilize most if not all of the effluent produced at the WWTP. Such a project, similar to any large-scale recycling project, requires a significant amount of planning, public education and outreach in order to be successful.
- Groundwater Recharge/Indirect Potable Reuse. The study evaluated possible well sites that could be used to re-inject highly treated recycled water in the groundwater basin, in compliance with CDPH groundwater regulations. Such water, after adequate residence time, and meeting the total organic carbon requirements, could be withdrawn from the aquifer thus increasing the well production currently limited in the Five Cities area.

Table 2.2 – Summary of Costs, SSLOCSD Recycled Water Alternatives

Alternative	Capital Cost, $[b]	Cost, $/AFY[c]
1-1. Turf Irrigation in SSLOCSD service area south of Hwy 101	$16,00,000	$11,600
1-2. Turf Irrigation, SSLOCSD and expanding north of Hwy 101	$19,000,000	$12,000
2. Direct Crop Agricultural Irrigation	$23,000,000	$1,200 to 1,400[d]
3-1. Stream Augmentation/Tertiary Effluent	$15,000,000	$4,200
3-2. Stream Augmentation/MF-RO Process Water	$30,000,000	$1,500 to $,700[d]
4. Indirect Potable Reuse	$38,000,000	$1,700 to 2,000[d]

[a] Costs do not include seasonal storage (where required), user on-site modifications, and other incidental costs to User
[b] Year 2008 dollars, rounded to nearest $1 million.
[c] Annualized costs/life cycle cost basis, 20 year life, 5% inflation.
[d] Low range based on possible Title XVI grant funding at 25%.

It should also be noted that this Report included discussions on opportunities for funding such recycled water projects. Funding opportunities included:

- Title XVI (Water Reclamation and Reuse) Program, can fund overall up to 25% of total project costs.
- State Revolving Fund Program/Water Recycling Funding Program.

- It was noted that other opportunities existed at the time of the report, for possible economic stimulus finding. Opportunities for such funding, however, are slim given that projects were to be "shovel ready", and many agencies are competing for funding.
- In January 2010, the cities of Arroyo Grande and Pismo Beach initiated a joint study of recycled water feasibility to focus on alternatives to deliver secondary effluent to the Arroyo Grande Cemetery and the Caltrans Highway 101 median. This study is expected to be complete in April 2010.

Water Conservation

Water conservation programs are being implemented throughout the County. Most purveyors established water conservation programs during a prolonged drought in the early 90s. In the current drought, purveyors have been aggressively promoting conservation measures to their customers. Many have made mandatory conservation requirements part of the building code and others have provided incentives for voluntary conservation. Certain conservation measures are required as part of the State's Urban Water Management Plan (UWMP) program. Two voluntary organizations assist members to implement these and other conservation measures. The conservation element of the UWMP and the programs of the two agencies are described below.

Urban Water Management Plans: California's Urban Water Management Planning Act requires that every urban water supplier that provides water to 3,000 or more customers, or that provides over 3,000 acre-feet of water annually, should prepare and implement a plan (UWMP) to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry years. The Act requires that an UWMP contain a discussion of a water purveyor's water Demand Management Measures (DMMs), including a description of each DMM currently being implemented or scheduled for implementation, the schedule of implementation for all DMMs, and the methods, if any, the supplier will use to evaluate the effectiveness of DMMs. The Urban Water Management Planning Act identifies 14 specific DMMs:

1. Water conservation coordinator;
2. Water Survey Programs for single-family residential and multi-family residential customers;
3. Residential plumbing retrofit;
4. System water audits, leak detection, and repair;
5. Metering with commodity rates for all new connections and retrofit of existing connections;
6. Large landscape conservation programs and incentives;
7. High-efficiency washing machine rebate programs;
8. Public information programs;
9. School education programs;
10. Conservation programs for commercial, industrial, and institutional accounts;
11. Wholesale agency programs;
12. Conservation pricing;
13. Water waste prohibition; and
14. Residential ultra-low flush toilet replacement programs.

The UWMP must discuss each of these potential DMMs and any other measures the supplier is implementing or has scheduled for implementation through a five-year period. The entire UWMP is to be updated every five years. If a particular DMM is not scheduled for implementation by the

water supplier, the UWMP must include a cost-benefit evaluation that takes into consideration the economic, environmental, social, health, customer impact, and technological factors.

In addition to DMMs, the UWMP must also include a Water Shortage Contingency Plan, containing information on actions to be undertaken in response to water supply shortages of varying severity. These actions generally begin with voluntary conservation measures during periods of moderate shortage or high demand and progress to increasingly stringent mandatory restrictions on water use during severe shortages. Most purveyors have put some level of these Contingency Plans into place during the current drought.

Partners in Water Conservation: Partners in Water Conservation (PIWC) is a group of San Luis Obispo County water purveyors working together to provide the community with valuable information and educational opportunities on how to use water more efficiently, both indoors and outdoors. Members include:

City of Arroyo Grande
City of Grover Beach
City of Morro Bay
City of Paso Robles
City of Pismo Beach
City of San Luis Obispo
County of San Luis Obispo
Atascadero Mutual Water Company
Cambria Community Services District
Los Osos Community Services District
Nipomo Community Services District
Templeton Community Services District

The partnership has sponsored a number of programs and publications to promote conservation in the communities they serve. Some of their efforts include:

- Features of a Sustainable Landscape (brochure)
- Water Conserving Plants for Northern San Luis Obispo County (directory)
- Water Wise Landscape Workshops held annually in the summer
- Regular meetings of the membership to coordinate activities and to share lessons learned.

In addition to joint activities, each of the members has water conservation programs in their service areas which are described in the discussion for each purveyor.

California Urban Water Conservation Council: The California Urban Water Conservation Council (CUWCC) was created to increase efficient water use statewide through partnerships among urban water agencies, public interest organizations, and private entities. The Council's goal is to integrate urban water conservation Best Management Practices (BMPs) into the planning and management of California's water resources. Members pledge to develop and implement 14 comprehensive conservation BMPs. These are identical to the 14 DMMs required by the UWMP Act. CUWCC offers an extensive array of resources to assist members in the their conservation goals, including model municipal codes, sample surveys, conservation publications, descriptions of lessons learned from other members, and variety of technical resources to assist water suppliers in planning, estimating costs, and determining impact of BMP implementation.

SLO County members include:

- City of Pismo Beach
- City of San Luis Obispo
- Central Coast Water Authority
- Golden State Water Company
- Atascadero Mutual Water Company
- Cambria Community Services District
- Nipomo Community Services District
- Templeton Community Services District

Decentralized Supply Opportunities

Considering that the majority of potable water supply at the household level is consumed for non-potable uses such as toilet flushing and outdoor irrigation, there are opportunities for homeowners and businesses to develop their own non-potable water sources on a small scale basis. Along those lines, two "green" technologies that have been given significant attention recently are graywater recycling and stormwater reuse/rainwater harvesting.

Typical graywater systems harvest wastewater from households or buildings that has not come into contact with toilet or kitchen sink waste. The harvested water is then filtered for distribution in underground irrigation systems. More elaborate systems can be designed to use graywater for toilet flushing, though plumbing codes make this option more complex. The San Luis Obispo Coalition of Appropriate Technology (SLO-COAT) as recently published a homeowner's guide to the design and construction of relatively simple graywater systems that can be used for outdoor irrigation. The state is also revising plumbing codes to make graywater systems easier to install.

Promotion of stormwater reuse has been adopted the SWRCB as part of the latest strategic plan, nad is part of the State's recently adopted Water recycling Policy. Stormwater reuse is considered a locally available, sustainable supply, consistent with implementation of the California Global Warming Solutions Act of 2006, and other State and regional efforts.

Rainwater harvesting is a form of stormwater reuse, usually practiced on a small scale by homeowners. Rainwater harvesting is the process of intercepting stormwater runoff from a surface (e.g. roof, parking area, land surface), and putting it to beneficial use. Intercepted stormwater can be collected, slowed down, and retained or routed through the site landscape using cisterns, microbasins, swales and other water harvesting structures. Water harvesting reduces dependence on dwindling groundwater reserves and expensive imported water. Capturing and using stormwater runoff also reduces site discharge and erosion, and the potential transport of stormwater pollutants.

Stormwater reuse can be promoted in a variety of ways. For example, the city of Tucson, Arizona became the first municipality in the country to require developers of commercial properties to harvest rainwater for landscaping. The new measure – approved by a unanimous vote by the City Council – requires that new developments meet 50% of their landscaping water requirements by capturing rainwater. The new rule goes into effect June 1, 2010.

Consumer education is also a common approach to promoting stormwater capture and reuse. The City of Tucson has published its Water Harvesting Guidance Manual and the Texas Water Development Board has published the Texas Manual on Rainwater Harvesting. At the local level, SLO-COAT is planning to release a homeowner's guide to Low Impact Development which will emphasize simple techniques for stormwater capture and reuse at the household level.

The Atascadero Mutual Water Company has instituted a rebate program aimed at reducing landscape irrigation. One of the conservation measures supported by the program is the

installation of rainwater harvesting systems at the household level, providing a rebate of up to $250 for storage tanks or cisterns designed to capture rainfall for use during dry periods.

Cambria CSD requires that residences built on properties larger than 8,000 sq ft. must have non-potable water collection cisterns for irrigation watering. 22 cisterns have been installed to date.

Given the large quantity of usable water that flows into household drains or runs off rooftops in the County, consideration should be given to further promoting stormwater reuse and graywater recycling as supplemental sources of water supply for landscape irrigation and other domestic uses.

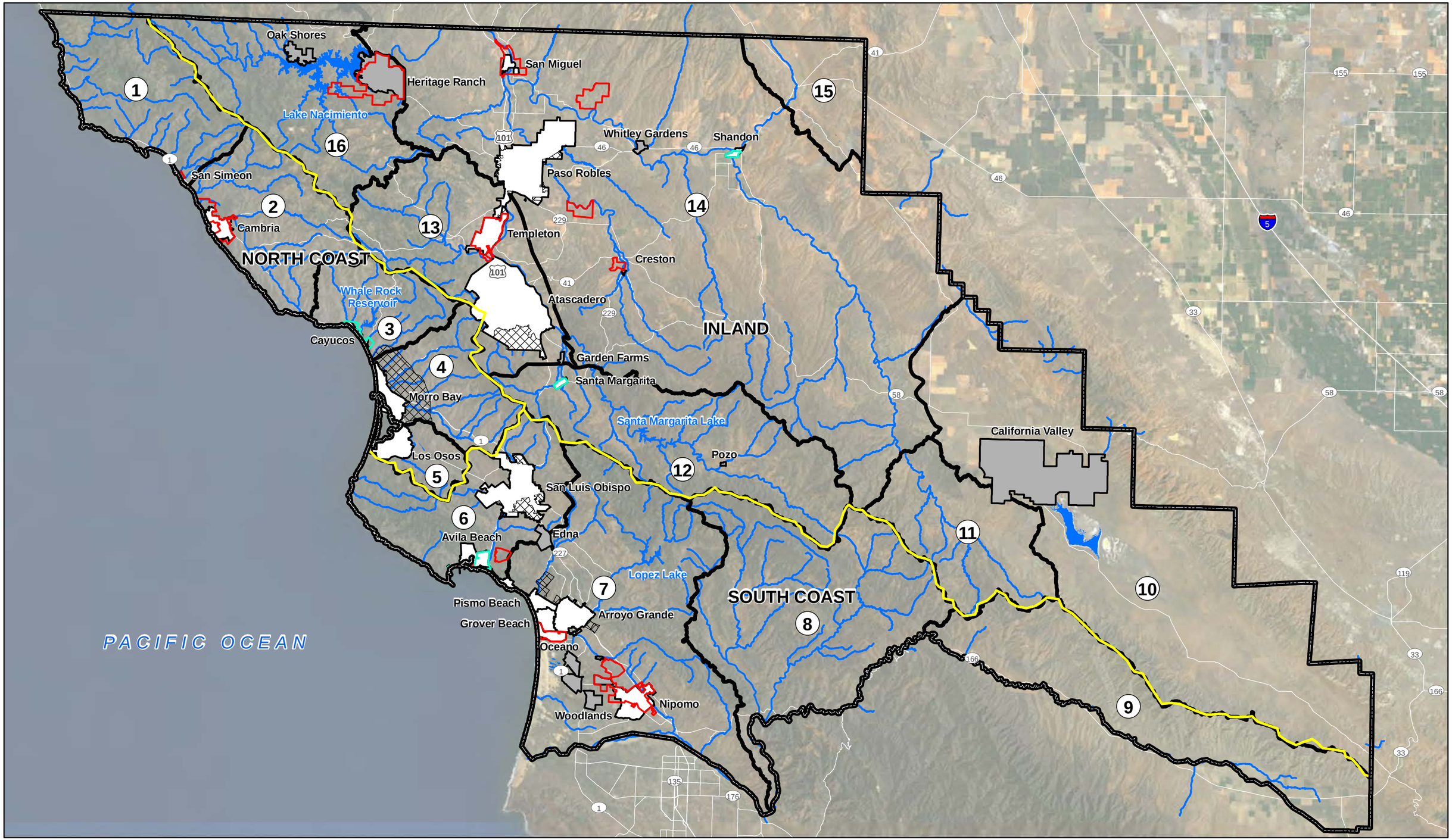
WATER PURVEYORS OF SAN LUIS OBISPO COUNTY

This section describes the existing and future water supplies and demands for the larger water purveyors throughout the County. Supply and demand for consumers served by smaller water purveyors are included in the discussion and analysis of overlying users. Figure 3.2 depicts an overview of the County, major cities and agencies germane to this master water plan, water regions and sub-regions.

NORTH COAST SUBREGION

This section describes water supply, water demand, and water quality for Water Planning Areas 1 to 4:

- San Simeon WPA 1: San Simeon CSD
- Cambria WPA 2: Cambria CSD
- Cayucos WPA 3: Cayucos Area Water Organization (Morro Rock Mutual Water Company, Paso Robles Beach Water Association, CSA 10A)
- Morro Bay WPA 4: City of Morro Bay and Chorro Valley Water System (California Men's Colony, Cuesta College, Camp San Luis Obispo, County Operations Center/Office of Education)
- Los Osos WPA 5: Community of Los Osos and vicinity (Golden State Water Company, Los Osos CSD, S&T Mutual Water Company).



San Luis Obispo County Flood Control and Water Conservation District

MASTER WATER PLAN

PROJECT BASEMAP

Copy of document found at www.NoNewWipTax.com

Legend

- County Boundary
- County Sub-Region
- Urban Reserve Line
- Village Reserve Line
- CSD
- CSA
- SOI
- Water Body
- Major Rivers/Streams

FIGURE 3.2

San Simeon WPA 1

San Simeon Community Services District

Source: *November 2007 Water System Master Plan and Wastewater Collection System Evaluation; Discussion with Water Committee August 2010.*

The San Simeon Community Services District (San Simeon CSD) supplies its customers with domestic water service, wastewater service, and fire protection, among other services.

Land Use and Service Population. San Simeon is located on the central coast of San Luis Obispo County, along Highway 1 north of Cambria. The San Simeon CSD serves an area of approximately 100 acres, which includes approximately 320 residential dwelling units and over twice that number of hotel/motel units. Though the permanent residential population is estimated at 247, the tourist population can outnumber locals and varies with the season.

Existing (2006) Population: 247 permanent residents and 22.72 acres commercial/retail.

Build-out Population: 740 permanent residents and 42.54 acres commercial/retail.

The build-out population is the upper range from the San Simeon Community Plan which assumes 530 dwelling units and 1.4 persons per DU.

Water Demand. Water demand is summarized as follows:

- 2007 Average Day Demand (ADD): 108 AFY (0.096 MGD)
- 2007 Gross Per Capita Demand: 388 gpcd
- 2007 Residential Per Capita Demand: 72 gpcd
- Maximum Month Demand: 2.0 times ADD
- Future ADD (2025): 224 AFY (0.200 MGD.) based on land use water duty factors
- Future ADD (Build-out): 250 AFY

The relatively high gross per capita demand is due to the small resident population compared to the size of the overall population (tourists and residents) that depends on San Simeon CSD water. The commercial/retail sector constitutes over 70% of the annual demand. Build-out water demand is based on 3,426 gpd/acre for the non-residential sector and 72 gpcd consumption for residents.

Water Supply - Existing. The San Simeon CSD depends on groundwater from the Pico Creek underflow. Though the SWRCB permits extraction of up to 140 AFY, groundwater studies indicate a safe yield of only 120 AFY, with 16 AFY used at Hearst Ranch. This leaves the San Simeon CSD with a safe yield of 104 AFY.

Water Supply – Future: The Master Plan does not suggest future water supply alternatives, although historically San Simeon CSD has been water-short numerous times during dryer years. As a result of the limitations and unreliability of the supply, a moratorium on development has been in place since 1991. The San Simeon CSD plans to move forward with upgrading its wastewater treatment facility to ultimately be able to use the effluent as recycled water. Desalination, either jointly with Cambria or separately, or coordination with the Hearst

Ranch on a groundwater source of supply to meet build-out needs are options under consideration.

Water Conservation: The San Simeon CSD has adopted an ordinance establishing a 3-stage conservation plan based on water supply conditions. The community has also gone through a retrofit program and the hotels and restaurants continuously have water conservation measures in place.

Water Quality. Contamination of water supply wells due to seawater intrusion is a major water quality concern in the basin (Cleath, 1986). Lowering of groundwater levels below sea level in the basin during the summer months when creek flows are absent and pumping is active can result in the landward migration of the sea water/fresh groundwater interface. The landward flow of seawater into the estuary during winter high tides is also a contributing factor. Although seawater intrusion has increased salinity levels in groundwater pumped from local water supply wells, it has not degraded water quality to the point that the water is non-potable. The 2008 Consumer Confidence Report for two San Simeon CSD wells reported that measured concentrations of all analyzed contaminants were below their respective Maximum Contaminant Level (MCL) or Regulatory Action Level (AL) values.

Cambria WPA 2

Cambria Community Services District

Source: *2005 Cambria CSD Urban Water Management Plan, 2008 Water Master Plan EIR, Discussion with Engineering Manager August 2010*

Cambria is an unincorporated community located in the coastal region of central California, in the northwestern portion of San Luis Obispo County. Cambria is located along Highway 1, approximately 35 miles north of San Luis Obispo. The Cambria Community Services District (Cambria CSD) is an independent special district that provides water, wastewater, fire and other community services to its customers.

Land Use and Service Population. Cambria's URL encompasses approximately 2,351 gross acres, with a net acreage of approximately 1,790 acres, not counting the land in the road rights of way and beach areas along the ocean. Cambria primarily consists of residential uses with combinations of commercial and public institutional uses along Main Street. The surrounding outlying areas are devoted to agricultural uses, primarily grazing, which contribute to the unique setting of Cambria.

Existing (2007) Population: 6,284 (based on 3,786 dwelling units and 2.21 persons/DU)

Build-out Population: Ranges between 8,257 and 13,547 depending on assumptions; current direction in Cambria is to plan for 7,719 (based on 4,650 dwelling units and 1.66 persons/DU).

Water Demand. Water demand is summarized as follows:

- 2003 Average Day Demand (ADD): 815 AFY (0.73 MGD)
- 2003 Per Capita Demand: 90 gpcd (residential)

- Build-out ADD[2]: 1,514 AFY (1.35 MGD) at 175 gpcd (gross)

Water Supply - Existing. To meet water demand, the Cambria CSD operates wells that draw from local groundwater aquifers along the San Simeon and Santa Rosa Creeks. Cambria CSD's water rights are subject to the regulatory authority of the State Water Resources Control Board (SWRCB), and to a certain extent, conditions imposed under development permits issued by the California Coastal Commission (CCC). The current water rights diversion permits from the SWRCB allow Cambria CSD to pump a maximum of 1,118 acre-feet (AF) of water during the wet season, and 630 AF of water during the dry season[3], from both the San Simeon and Santa Rosa Basins. However, the current CCC Development Permit limits the total annual diversion from both creeks to no more than 1,230 AF of water. Additionally, the dry season date, duration, and beginning groundwater levels, limit the actual availability of groundwater from both basins. Currently the water supply of Cambria CSD is at a Level III severity rating (resource capacity has been met or exceeded) due to unreliability of the groundwater supply to meet existing demands.

Water Supply – Future: To meet the additional needs towards build-out and to increase water supply reliability, the Cambria CSD plans to construct a Seawater Desalination Plant to produce up to 602 AFY. This plant would operate during the dry season to augment supply during that period of high demand. A decentralized recycled water program is also planned, with an estimated 180 AFY made available for unrestricted irrigation use.

Water Conservation: Historically, the Cambria CSD has used conservation as a means to extend its existing supplies. Since 1988, a plumbing retrofit program has required the installation of water efficient fixtures upon resale or remodel of a home. The program was expanded in 1990 to require water efficient fixtures for new construction and for existing buildings that require a new connection permit. Since that time, the Cambria CSD has initiated a number of other conservation measures, including rebate programs and plumbing requirements that have resulted in an estimated savings of 18.9 AFY. Cambria CSD is a member of the California Urban Water Conservation Council (CUWCC) and Partners in Water Conservation.

Water Quality. In 1999, the Cambria CSD learned of an MTBE contamination plume that was spreading towards its Santa Rosa well field. As a result, its existing Santa Rosa well field was shut down and an emergency well and treatment plant were constructed further upstream. The new treatment plant provides filtering, disinfection, as well as the removal of iron and manganese. The adjustments made in well locations and the additional treatment provided for Santa Rosa Creek well have resulted in delivery of water to customers that meet both primary and secondary drinking water standards.

Cayucos WPA 3

Cayucos Area Water Organization

Source: *2007 Water Management Plan Update and 2003 CSA 10A Water System Master Plan*

[2] The Water Master Plan presents several build-out scenarios with a range of annual demand projections from as low as 1,009 AFY to as high as 2,714 AFY. The above figure reflects a planning target for Scenario 4, a 50% quality of life increase in demand allowance and a 1.66 people/unit occupancy rate (Table 2.7, Assessment of Long-Term Water Supply Alternatives).

[3] The dry season begins on May 1 for the Santa Rosa basin and is tied to creek flows in the San Simeon basin. The dry season ends on October 31 for both basins.

The Cayucos Area Water Organization (CAWO) is made up of three member utilities and a cemetery district, the Morro Rock Mutual Water Company (Morro Rock MWC), the Paso Robles Beach Water Association (PRBWA), County Service Area 10A (CSA 10A) and Cayucos Cemetery District (CCD). CSA 10 operates a surface water treatment plant which delivers filtered and chlorinated water to the CAWO members. The three utility purveyors supply their customers with domestic water service, landscape irrigation and fire protection, among other services. The CCD uses the water for irrigation purposes.

Land Use and Service Population. Cayucos is a small oceanfront community with a mixture of vacation homes and full-time residences. A commercial sector serves both the residential and tourist population.

Water Demand. Water demand is summarized as follows:

- 2007 Average Day Demand (ADD): 432 AFY
- 2007 Per Capita Demand: 87 gpcd
- Build-out ADD: 641 AFY

Water Supply - Existing. CAWO members receive water from Whale Rock Reservoir with a maximum total annual entitlement of 600 AFY, allocated to each member as follows:

- Morro Rock MWC: 170 AFY
- PRBWA: 222 AFY
- CSA 10A: 190 AFY
- CCD: 18 AFY

Several wells are also available to CAWO members. The wells are primarily used as emergency back-up sources. Most of the wells extract water from an aquifer that is replenished by recharge from Old Creek and Whale Rock Reservoir. Water drawn from these wells is also limited by the 600 AFY entitlement from the Whale Rock Reservoir. One Morro Rock MWC well draws from Little Cayucos Creek Valley and is not subject to this limitation.

Water Supply – Future: CSA 10A has procured an additional entitlement of 25 AFY through the Nacimiento Water Supply Project. This water will be taken from the Whale Rock Reservoir in an exchange agreement with the City of San Luis Obispo. The agreement allows for up to 90 AFY to be exchanged, which may be a way to address any future needs of the CAWO.

Water Quality. Aluminum has occasionally been found in delivered water at levels that exceed the secondary MCL of 200 ppb. The high aluminum levels are due to residue from the water treatment process. Better control of the treatment process has resulted in lower levels of aluminum in recent water quality tests. Manganese has been found in raw water from the CAWO well at levels that exceed the secondary MCL of 50 ppb. As this well contributes less than 1% of the total supply, manganese is not detectable in delivered water.

Morro Bay WPA 4

City of Morro Bay

Source: *City of Morro Bay 2005 UWMP and 2007 Morro Bay Nitrate Study*

The City of Morro Bay provides water service to over 5,500 connections, including over 10,000 residents, businesses, industrial facilities, and public facilities.

Land Use and Service Population. The City of Morro Bay is located along the central coast of California in San Luis Obispo County. Its coastal location attracts a large number of tourists during the summer and on weekends. The motels, hotels, restaurants, State Parks, and other facilities serving the tourist population add a significant water demand to the local population living primarily in single-family residences.

Existing Population. The population estimate in 2005 was 10,270 according to the Urban Water Management Plan.

Build-out Population. The Urban Water Management Plan uses a build-out population of 12,900, estimated to be achieved in 2028.

Water Demand. Water demand is summarized as follows:

- 2005 Average Day Demand (ADD): 1,620 AFY (1.45 MGD)
- 2005 Per Capita Demand: 141 gpcd, based on "dry year" demand
- Maximum Month Demand: 1.27 times ADD
- Future ADD: 2,040 AFY (1.82 MGD.)

Water Supply - Existing. The City has multiple sources of potable water. Two groundwater basins, the Chorro and the Morro, were used exclusively prior to the City's connection to the State Water Project. The City also operates a desalination plant and has mutual aid agreements with the California Men's Colony and the Whale Rock Commission for emergency supply.

The groundwater basins have encountered several water quality issues, including seawater intrusion, MTBE contamination, and excessive nitrates, forcing the City to reduce extraction from groundwater sources. In addition, the SWRCB permitted allocation allows withdrawals from the Chorro Basin only when surface flows exceed 1.4 cfs. Nevertheless, strategic management of these sources should allow the City to reliably extract 581 AFY from the Morro Basin and 566 AFY from the Chorro wells, for a total of 1,147 AFY, even in dry years.

The City contracts with the District for 1,313 AFY of State Water. The City also has a Drought Buffer Water Agreement with the District for 2,290 AFY that will allow the City to receive its full 1,313 AFY allocation when the SWP can deliver at least 36.5% of contracted allocations (see SWP discussion). The City has been noted as being potentially interested in an additional 750 AFY of State Water and 1,500 AFY of Drought Buffer, should it become available (Additional/New Allocation Requests – Planning Purposes Only, 10/22/09).

The SWP shuts down for annual maintenance activities each fall/winter during which the City has used its alternative supplies. In 2008, the SWP shutdown took place when groundwater quality issues were limiting the City's use of well water. The shortfall was made up for through an agreement with the California Men's Colony to provide the City with water during that period.

The desalination plant was constructed in 1993 as a secondary supply during a drought. It has been used intermittently since that time, but raw water quality problems have limited its use.

Water Supply – Future: Plans to modernize the desalination plant should restore capacity to 645 AFY. Future needs could be met by doubling plant capacity.

The jointly operated Morro Bay - Cayucos Sanitary District Wastewater Treatment Plant is slated for a major upgrade in 2014. Production of tertiary effluent will be provided, and thus will provide increased opportunity for future water recycling to augment water supplies.

Water Conservation. Since the early 1990s, the City has implemented a rigorous water conservation program to promote more efficient use of existing water resources. Elements of the conservation program include:

- Progressively tiered water rate structure
- Creation of a developer funded low-flow toilet retrofit program
- Adoption of multi-level drought response program with increasing limits on irrigation and non-essential uses of potable water
- Promotion of many of the Water Conservation BMPs to be pursued by all contractors of the State Water Project, including an ongoing rebate program for homeowner installation of water-efficient appliances.

The program has had a significant impact, reducing average per capita water demand from 154 to about 129 gpcd (141 gpcd in dry years) or 8 to 16%. As noted in the City's 2005 sewer collection system Master Plan Update, flows in 2005 were lower than in 1986, even with a 10% increase in population.

The City is a member of Partners in Water Conservation

Water Quality. As mentioned above, groundwater quality issues are an ongoing concern, but the City's ability to obtain water from multiple sources and to blend them as needed to meet State Drinking Water Standards has lessened the concerns that water quality issues could hamper the City from meeting future water demands.

Chorro Valley Water System (California Men's Colony, Camp San Luis Obispo, Cuesta College, County Operations Center/Office of Education)

Source: *2003 Chorro Water Study and personal communication with CMC Plant Manager*

The California Men's Colony (CMC) is a state prison located on Highway 1 west of San Luis Obispo. The CMC operates its own water supply, treatment and distribution system for inmates and staff. CMC also wheels water to Camp San Luis Obispo (a National Guard campus), Cuesta College, County Operations Center (includes Fleet Services, Water Quality Lab, Juvenile Detention Center, County Jail, Office of Emergency Services), and County Office of Education. This system is also known as the Chorro Valley Water System.

Service Population. The CMC water system serves an inmate and staff population of 8,456. No expansion of this service population is planned, though a reduction in staff and inmate population is currently being considered by the legislature. Other population summaries include:

- Cuesta College. The College can service up to 6,500 students; however, on any given day, it is estimated that student/faculty population is around 1,500.

- Camp San Luis Obispo: Total population/employees on Base was not available.

Water Demand Summaries. The following summarizes demands for California Men's Colony, Camp San Luis Obispo, Cuesta College and County Operations Center/Office of Education (SLO Co). Other minor water demands for the fire station, Achievement House and Foster Ranch (6.22 AFY in total) are excluded from the individual summaries below, but are included in the overall summary.

California Men's Colony:
- 2008 Average Day Demand (ADD): 1,135 AFY (1.0 mgd)
- 2008 Per Capita Demand: 120 gpcd (based on current population)
- Maximum Month Demand: 100.3 AF (1.05 mgd)
- Future ADD (2025): Estimated to remain constant at 1,135 AFY

Camp San Luis Obispo:
- 2008 Average Day Demand (ADD): 138 AFY (0.12 mgd)
- 2008 Per Capita Demand: not known
- Maximum Month Demand: 21.8 AF (0.23 mgd)
- Future ADD (2025): Estimated to remain constant at 138 AFY
- NOTE: In review of 2009 water use demands through June 2009, Camp SLO water demands were approximately 30% lower than the same interval for 2008.

Cuesta College:
- 2008 Average Day Demand (ADD): 125 AFY (0.11 mgd)
- 2008 Per Capita Demand: ~75 gpcd (based on average attendance of 1,500 students)
- Maximum Month Demand: 19.2 AF (0.20 mgd)
- Future ADD (2025): Estimated to remain constant at 125 AFY (However Cuesta has been noted as being interested in an additional 10 AFY of State Water should it become available (Additional/New Allocation Requests – Planning Purposes Only, 10/22/09))

SLO Co:
- 2008 Average Day Demand (ADD): 94.3 AFY (0.084 mgd)
- 2008 Per Capita Demand: Unknown
- Maximum Month Demand: 9.21 AF (0.097 mgd)
- Future ADD (2025): Estimated to remain constant at 94.3 AFY

Overall Summary:
- 2008 Average Day Demand (ADD): 1,499 AFY (1.34 mgd)
- 2008 Per Capita Demand: Not applicable
- Maximum Month Demand: 128.5 AF (1.35 mgd)
- Future ADD (2025): Estimated to remain constant at 1,499 AFY

Water Supply - Existing. CMC operates a 3.0 MGD water treatment facility at the Chorro Reservoir, and delivers water to Camp SLO, Cuesta College, and SLO Co. CMC, Camp SLO, Cuesta College, and SLO Co receive water from three sources (and a fourth source for emergencies), as follows:

- Chorro Reservoir: located approximately ¾ of a mile northeast of the CMC in the upper Chorro watershed. The reservoir and treatment plant were constructed by the US Army Corps of Engineers to provide water to Camp San Luis Obispo at the beginning of World War II. The net storage capacity of the Chorro Reservoir has decreased since it was constructed due to sedimentation, and is currently about 90 acre-feet, according to recent studies. Camp SLO holds the first 140 AFY entitlement to this surface water; during surplus water years, any excess to the 140 AFY is used by CMC. Flow must be maintained in Chorro Creek downstream of the reservoir for riparian habitat enhancement.
- Whale Rock Reservoir: CMC is one of three owners (Cal Poly and City of SLO are others) holding a partial entitlement to Whale Rock Reservoir. CMC owns an 11.24% share of the reservoir's capacity which allows them to withdraw approximately 420 AFY. Raw lake water is pumped from Whale Rock Reservoir in Cayucos via a 30-inch diameter steel water main to the three owners. CMC's turnout delivers water to the CMC water treatment plant for treatment, prior to delivery.
- State Water. CMC contracts with the District for 400 AFY of State Water. CMC also has a Drought Buffer Water Agreement with the District for 400 AFY that will allow CMC to receive its 400 AFY allocation when the SWP can deliver at least 50% of contracted allocations (see SWP discussion). Cuesta College contracts with the District for 200 AFY of State Water and 200 AFY of Drought Buffer; however, CMC receives 60 AFY of this 200 AFY allocation per agreement for wheeling the water to Cuesta College. SLO Co has a 425 AFY allocation of State Water and a 425 AFY allocation of Drought Buffer; SLO Co never fully utilizes this allocation, so CMC utilizes all of the excess State Water allocation per agreement.
- Groundwater wells. CMC is in the process of rehabilitating one on-site well known as the Honor Farm Well (County Well No. 1). Once rehabilitated, this well water source will be allocated to Camp SLO; however, the water quality is such that it will be conveyed to the CMC water treatment plant, treated, and wheeled back to Camp SLO for use.
- The Salinas Reservoir waterline was extended from the Cuesta Water Tunnel to the Chorro Reservoir as part of the original improvements in World War II. The pipeline has only been used to convey water from the Salinas Reservoir to the Camp twice since construction.

Summary of Agreements. The following summarizes the pertinent water related agreements between the various agencies:

- CMC/Cuesta College. CMC and Cuesta College entered into Agreement on June 19, 2000, for water supply and wastewater treatment services. The term of this Contract is indefinite. As indicated above, Cuesta College has a 200 AFY SWP allocation; however, CMC at this time utilizes 60 AFY of this allocation. Cuesta's allocation includes 200 AFY drought buffer. Furthermore, in the event State Water is not available, CMC is obligated to supply Cuesta with "replacement" water in an amount equal to Cuesta's allocation of 200 AFY (not including the 60 AFY currently being utilized by CMC).
- CMC/Camp SLO: CMC agrees to process water at no cost to Camp SLO. Camp SLO has first rights to water from County Well No.1. In exchange, Camp SLO provides 25 AFY of Chorro Reservoir entitlement to CMC and CMC has free use of Camp SLO hospital and firing range.
- CMC/SLO Co: SLO Co provides up to 275 AFY from SLO Co's 425 AFY of State Water in exchange for wheeling the remaining 150 AFY. If SLO Co provides less than 275 AF, SLO Co will reimburse CMC for a pro rata share of potable water wheeling and capital

improvement costs to the WWTP. If CMC uses more than 275 AFY from SLO Co, CMC will reimburse SLO Co for variable costs of and excess State Water used. SLO Co will fund any needed improvements to CMC operated facilities if CMC wheels more than 150 AFY. CMC is responsible for measuring deliveries. SLO Co will reimburse CMC for wastewater treatment based on 80% of potable water used or metered Wastewater if meters are installed. Maximum CMC obligation for wastewater treatment is 240 AFY. Agreement is subject to conditions of State Water Supply Agreement. .

- SLO Co/State (CMC and Camp SLO): Allows State to test, develop and pump from SLO Co Well #1. Requires Camp SLO to execute two easements for SLO Co effluent lines. Requires State to develop well before 6/30/10. State to provide SLO Co 25 AFY after well is developed. State and SLO Co share pumped water equally after State uses first 150 AFY. Water provided to SLO Co by CMC to be Whale Rock Water. State may terminate agreement if well production is below 100 AFY or well water quality cannot be used. SLO Co may terminate agreement if State uses water for new non-government purposes.

Water Recycling. The CMC wastewater treatment facility, located southwest of the Cuesta College Campus, treats wastewater from CMC, Camp SLO, Cuesta College, and SLO Co. Currently, the WWTP provides up to 275 AFY of tertiary treated effluent to the Dairy Creek Golf Course, owned and operated by the County of San Luis Obispo. Recylced water is also used to provide a minimum flow of 0.75 cfs in Chorro Creek for riparian habitat enhancement.

Water Supply -Future. The California Department of Corrections/CMC is considering participation in the Nacimiento Water Project. CMC has contacted the District requesting from 200 AFY to 400 AFY of Nacimiento Water for future supply reliability and minor demand increases. Such allocation is available; however, it is uncertain at this time if they will participate due to costs and other factors. CMC has also expressed interest in any State Water that may become available (Additional/New Allocation Requests – Planning Purposes Only, 10/22/09).

Water Quality. CMC delivers excellent quality drinking water to its customers, from the three surface water supplies (Whale Rock, State Water, and Chorro Reservoir). Water consistently meets all primary drinking water standards, and levels of nitrates are very low (<2.3 mg/L). Total dissolved solids ranged from 357 to 440 mg/L, with an average of 389 mg/L.

Los Osos WPA 5

Community of Los Osos (Los Osos Community Services District, Golden State Water Company, and S&T Mutual Water Company)

Source: *2002 Los Osos CSD Water Master Plan, GSWC files, 2009 CHG groundwater studies, Sea Water Intrusion in the Los Osos Groundwater Basin (presentation to RWQCB), and the ISJ Working Group's May 4, 2010 Los Osos Groundwater Basin Update*

The community of Los Osos lies within the unincorporated coastal area of San Luis Obispo County, just south of the City of Morro Bay. Los Osos is bordered on the northwest by the Morro Bay Estuary (an estuary of national importance) and Morro Bay State Park; to the east by Los Osos Creek and its riparian corridor; and to the south and southwest by the Irish Hills and Montana de Oro State Park. The Los Osos Valley lies to the east of the community.

The community of Los Osos has been subject to a building moratorium since 1988, which has resulted in only limited development in the community since that time. Upon completion of the wastewater project by the County, the moratorium may be lifted (subject to other resource issues such as water supply and habitat conservation) so that development can once again proceed under normal circumstances.

The following three water purveyors serve the community of Los Osos:

- Los Osos Community Services District (Los Osos CSD)
- S & T Mutual Water Company (S&T MWC)
- Golden State Water Company (GSWC)

Land Use and Service Population. Los Osos is an unincorporated community located in San Luis Obispo County, California. Los Osos consists of a mix of residential, commercial, agriculture, and recreational areas. Table 3.5 below, taken from various sources shows existing and future populations/connections in the service areas.

Table 3.5. Population Estimates and Connection Data for Urban Water Purveyors (2002 Los Osos CSD WMP, 2009 RMS and GSWC files)

Purveyor Name	Existing (2008) Population	Build-out Population
Los Osos CSD Water Service Area	8,500	9,324
S&T Mutual Water Co.	525	535
	Existing (2006) Connections	**Build-out Connections**
GSWC Service Area	2,648	4,381

Build-out projections for the GSWC service area have been revised in its updated Master Plan prepared in 2007. The revised plan projects that once the building moratorium is lifted, the number of water service connections will increase from 2,648 in 2006 to 4,381 by 2030.

Water Demand. Water demand is summarized in Table 3.6. Existing production is based on average production by purveyor from 2004 to 2008. The 2002 Los Osos CSD Master Plan projections for build-out demand were based on 130 gpcd for Los Osos CSD and 250 gpcd for the S&T MWC service area. Existing demand has averaged 100 and 160 gpcd respectively over the past five years. Based on these lower rates of demand and assuming continued implementation of water conservation practices, the build-out demands are expected to be lower than those presented in the 2002 Los Osos CSD Master Plan. GSWC Master Plan build-out demand projections are based on 4,381 connections at 0.398 AFY/connection.

Table 3.6. Existing Production and Build-Out Water Demand

Water Purveyor	Ex. Production (2004-08)		Build-Out Demand	
	(mgd)	(AFY)	(mgd)	(AFY)
Los Osos CSD	0.85	951	0.93	1,044
S&T MWC	0.084	94	0.086	96
GSWC	0.89	998	1.54	1,730
Total	**1.82**	**2043**	**2.56**	**2,870**

Water Supply - Existing. The sole source of water for the Community of Los Osos has been its groundwater basin. The Los Osos Valley ground water basin under existing conditions, with existing septic systems in place, and assuming no new water development, is estimated to have a yield of 3,200 AFY. This source is shared by the three water purveyors and the many overlying users in the valley. After subtracting 1,100 AFY in agricultural irrigation, private domestic use and golf course irrigation, the purveyors have available for their use an estimated 2,100 AFY of sustainable safe yield.

Water Supply – Future. Through the development of a Basin Management Plan, it is the goal, among others, of the ISJ Working Group, to "provide for a continuously updated hydrologic assessment of the Basin, its water resources and safe yield." The ISJ Working Group will be evaluating and identifying the management strategies to implement, in coordination with the County's wastewater project, in order to improve conditions in the Basin. Strategies under consideration include additional conservation, well relocation, use of shallow wells, nitrate removal, brackish water desalination, rainwater harvesting and graywater systems.

Water Conservation. The County Planning Department has implemented an indoor retrofit-upon-sale program as an action identified as a result of the Board certifying a Level of Severity III for the Basin. A mandatory fixture replacement program, which is a part of the wastewater treatment facility project, will replace all toilets and urinals in the wastewater service area (also known as the "Prohibition Zone") with low-flow devices, which is estimated to ultimately reduce overall water consumption by 20 to 25% with similar savings in wastewater flows. The objective of wastewater project's required water conservation program is to reduce indoor water use to 50 gallons per capita day within the wastewater service area.

GSWC promotes conservation by providing free water conservation kits to all customers. Their outreach program is highlighted by an educational series explaining the "Five Golden Rules" for water conservation, a series of video vignettes that explain simple ways that consumers can conserve water at home. GSWC also has a full-time Water Use Efficiency Manager and is a member of the California Urban Water Conservation Council (CUWCC).

Los Osos CSD is a member of Partners in Water Conservation.

Water Quality. Over the past three decades, Los Osos groundwater has been the focus of a number of studies. The main water quality concerns in the basin are nitrate and sea water intrusion. Excessive levels of nitrate in upper levels of the groundwater system have been attributed to the high density of individual septic systems. The RWQCB placed a development

moratorium on the community until a centralized wastewater treatment plant could be built. As these individual systems are replaced with a centralized wastewater treatment system, it is expected that nitrate levels in groundwater will decrease over the next few decades. In the meantime, purveyors have reduced pumping from the upper (contaminated) aquifer and have drawn increasing amounts from lower aquifers to deliver water suitable for drinking. Seawater intrusion, however, continues to be a growing concern, with the average horizontal rate of intrusion between 2005 and 2010, based on the 250 mg/l isochlor, being 700 feet per year.

SOUTH COAST SUBREGION

This section describes water supply, water demand, and water quality for Water Planning Areas 6 to 9:

- San Luis Obispo/Avila WPA 6: City of San Luis Obispo (includes County Airport), Cal Poly SLO, CSA 12 (includes Port San Luis), Avila Beach Community Services District, and Avila Valley (Avila Valley MWC and San Miguelito MWC).
- South Coast WPA 7: Golden State Water Company (Edna Valley), Northern Cities Management Area (City of Pismo Beach, City of Arroyo Grande, City of Grover Beach, and Oceano Community Services District),, Nipomo Mesa Management Area (Golden State Water Company - Nipomo, Nipomo CSD, , Rural Water Company, Woodlands MWC, and Conoco Phillips)
- Huasna Valley WPA 8
- Cuyama Valley WPA 9: Cuyama CSD

San Luis Obispo/Avila WPA 6

City of San Luis Obispo (including County Airport)

Source: *2005 City of SLO UWMP, 2009 Water Resources Status Report and 2010 General Plan Update, Chapter 8*

The City of San Luis Obispo is located in a coastal valley approximately 10 miles inland from the Pacific Ocean. The local Mediterranean climate provides for mild and dry summers and cool winters, with an annual average of about 23 inches of precipitation. Historically, the City has been the sole water purveyor within the City limits. This allowed the City to maintain uniformity of water service and distribution standards, and to be consistent in developing and implementing water policy. The City also serves the County Regional Airport and Cal Poly. Since Cal Poly has its own allocation of water from the Whale Rock Reservoir and has water resources that do not pass through the City treatment plant, the University is discussed separately.

Land Use and Service Population. The City has a 1% residential growth cap which assists in projecting future annual water needs. The current General Plan estimates that the build-out population for the City will be approximately 57,200 people.

Existing (2010) Population: 44,948

Build-out Population: 57,200

Water Demand. Water demand is summarized as follows:

- 2008 Average Day Demand (ADD): 6,375 AFY (5.69 MGD)
- 2000-09 Running Average Per Capita Demand: 123.2 gpcd
- Build-out Demand used for planning: 123.2 gpcd
- Build-out ADD: 7,894 AFY (7.05 MGD)

Cal Poly demand figures are not included in the above.

Water Supply - Existing. The City of San Luis Obispo currently receives water from four sources, Salinas Reservoir (Santa Margarita Lake), Whale Rock Reservoir, local groundwater, and recycled water from the Water Reclamation Facility. The City has depended on imported supplies from Salinas Reservoir, located near the community of Santa Margarita, since 1944 and Whale Rock Reservoir, located near the community of Cayucos, since 1961. With the onset of the drought in 1986, resulting in decreasing surface water supplies, the City activated its groundwater sources in 1989. The City currently uses a small amount of groundwater (~2% of total) for potable purposes, but does not count groundwater yield in its water supply portfolio. Even though the estimated safe yield of the basin is 2,000 AFY, nitrate and PCE contamination and drought make groundwater a less than reliable source.

The Whale Rock Reservoir provides water to the City of San Luis Obispo, California Polytechnic State University, and the California Men's Colony as well as the town of Cayucos. The City staff work closely with staff from the other entities relative to water planning issues.

The safe yield from the Salinas and Whale Rock reservoirs was 6940 AFY in 2010, but diminishes approximately 10 AFY due to siltation.

Recycled Water Program. The City of San Luis Obispo's Water Reclamation Facility (WRF) currently receives approximately 4.5 mgd (5,040 AFY) wastewater flows. The WRF provides tertiary treated effluent to an extensive recycled water distribution system that delivers recycled water to a number of customers in the southern area of the City, including Damon Garcia Sports Park, Laguna Golf Course, Laguna Middle School, Laguna Lake Park, and commercial centers such as Irish Hills Plaza. Currently, recycled water irrigation demand is 130 AFY, and the City anticipates customer demands to expand by 10 AFY to an anticipated maximum of 1,000 AFY. The City must also maintain stream flow to San Luis Obispo Creek, at a minimum average daily flow of 2.5 cfs (1.6 mgd, or 1,800 AFY). Effluent total dissolved solids (TDS) quality of the recycled water is approximately 900 mg/L.

Water Supply – Future: Future water sources include:

- The Nacimiento Water Project, scheduled to go online in 2010, will supply up to 3,380 AFY to the City of SLO.
- The City's Water Reuse Project will deliver up to 1,000 AFY of recycled water for irrigation and other approved uses. The tertiary recycled water produced by the City of San Luis Obispo is suitable for most uses other than swimming and drinking.

The City accounts for its water supplies by designating a portion of what is available for primary supply, reliability reserve and secondary supply, primary being the average supply needed to meet build-out needs; reliability reserve being a 20% buffer for future unforeseen or unpredictable long-term impacts to the City's available water resources such as loss of yield from an existing water supply source and impacts due to climate change; and secondary being

the additional amount needed to supplement the primary and reliability supply to meet needs during short-term water supply shortages or peak demands.

Water Conservation: In June 1985, the City Council adopted the Annual Water Operational Plan policy which established a procedure to monitor the City's water supply situation on an annual basis. An integral component of the policy was the establishment of a water demand management or conservation program aimed at instituting corrective measures ahead of any projected water supply deficit to maintain a dependable supply during critically dry periods. Water demand management has played an ever increasing role in the overall water supply development and management strategies since 1985. In 1990, the City adopted a multi-source water policy in an attempt to solve both short term water shortages and meet the City's long term water needs. The importance of the implemented water efficiency programs has become even more apparent because of the difficulty in developing new water supply projects. Water conservation is now being viewed more as a water supply alternative.

The goal of the City's water conservation program is to make efficient use of its water resources to protect both short- and long-term water supply reliability by implementing water-efficiency programs which are consistent with accepted best management practices and comply with any State-mandated water use reductions, and mandatory water conservation measures when the City's water supplies are projected to last three years or less.

The City is a member of Partners in Water Conservation and the CUWCC.

Water Quality. Surface water from both reservoirs is considered to be of high quality. Groundwater quality has been generally good, but PCE contamination and occasional spikes in the nitrate content of well water has caused the City to provide additional treatment for individual wells or to take certain wells out of production.

Cal Poly San Luis Obispo

Source: *2007 Cal Poly Master Plan and EIR*

Cal Poly is located to the north of the City of San Luis Obispo. The university receives water from the City water system. Though it does not treat its own water, available supply is governed by entitlements from surface water sources.

Land Use and Service Population. Cal Poly occupies 1,321 acres with a campus core of 155 acres. The university also owns ranches and other outlying properties comprising an additional 8,357 acres. Water demand includes extensive agricultural and landscape irrigation requirements. The supply and demand discussion below applies to the 1,321-acre campus area.

2008 Population

- Students: 19,471
- Faculty 1,293
- Staff: 1,752
- Total: 22,516

Build-out Population
Approx Total : 23,100

Water Demand. Water demand is summarized as follows:

- 2008 Average Day Demand (ADD): 1,040 AFY (0.93 MGD)
- The existing demand is based on actual consumption figures
- Build-out ADD: 1,557 AFY (1.39 MGD). This figure is from the Master Plan which uses 1999-2000 consumption rates as a worst-case water demand scenario. Conservation practices over the past decade and into the future will likely reduce build-out demand.

Water Supply - Existing. Cal Poly derives its water from groundwater sources and through surface water entitlements. For general use, the University owns entitlement to 33.7% of the storage capacity in Whale Rock Reservoir or approximately 13,707 acre-feet when the reservoir is full.

Cal Poly's portion of the safe yield from the reservoir is calculated as 1,384 AFY, but diminishes approximately 2 AFY due to siltation. However, their allotment is based on volume and not on a flow rate, so Cal Poly is not bound by this limit. The safe yield from groundwater is undocumented, but no decline in groundwater reserves have been noticed.

The City treats and delivers approximately 600 AFY to Cal Poly. The remainder is untreated water primarily used for agriculture and landscape irrigation, drawn directly from the Whale Rock raw water pipeline or from agricultural wells.

Water Supply – Future. Future demands for domestic needs will be met by increasing the proportion of Whale Rock water treated by the City. Agricultural needs could be met in various ways, including increasing irrigation efficiency, withdrawing land from cultivation, using more groundwater, and other management practices.

Water Quality. Surface water from Whale Rock is considered to be of high quality. Groundwater quality has been generally good, though increases in nitrate levels have been measured in groundwater flowing through the aquifer as it passes under the Cal Poly campus.

Avila Beach Community Services District

Source: *2006 Draft Water Master Plan*

The Avila Beach Community Services District (Avila Beach CSD) supplies its customers with domestic water service, wastewater service and fire protection, among other services.

Land Use and Service Population. Avila Beach is an unincorporated community located in San Luis Obispo County, California. Avila Beach consists of a mix of residential, commercial, agriculture, and recreational areas. The table below, taken from the draft 2006 Avila Beach CSD Water Master Plan, shows existing and future populations of the service areas.

Table 3.7. Population Summary

Description	Existing Population (1998)[2]	Existing Population (2006)	Build-out Population[3]
Residential Total	395	240	672[1]

Notes:
1. Based on an occupancy rate of 2.0 for residential developments (Table 2-2).
2. This existing population decreased since the UNOCAL cleanup of Avila Beach began in late 1998 and ended mid 2000.
3. The actual year is difficult to predict but based on the rate of development it is anticipated in about ten years.

Water Demand. Water demand is summarized as follows:

- 2006 Average Day Demand (ADD): 51 AFY (0.0455 MGD)
- 2006 Per Capita Demand: 190 gpcd
- Updated 2008 ADD: (provide if available)
- Maximum Day Demand: 2.0 times ADD
- Future ADD: 150 AFY (0.133 MGD.)

Water Supply. The water supply for the Avila Beach CSD is contracted through County Service Area 12 (CSA 12), and consists of both Lopez Reservoir and State Water allocations. Table 3.8 (Table 4-1 from the draft 2006 WMP) provides a summary of water supply allocations for Avila Beach CSD.

Table 3.8. Summary of Water Supply Allocations for Avila Beach CSD

Allocation, AFY			Supply Need, AFY		
Lopez Lake Reservoir	State Water	Total	Existing	Future	
				Excluding Tank Farm	Including Tank Farm
68[1]	100[1]	168	51[2]	150	170[2]

Notes:
1. District information
2. Future demand + Projected Tank Farm Development

Water Quality. Water quality for both Lopez Lake and State Water treated sources meets both primary and secondary standards for drinking water, though regular monitoring of the treatment process is necessary to make appropriate adjustments to account for seasonal changes in the quality of Lopez Lake water.

Avila Valley Mutual Water Company

Source: *2008 Avila Valley MWC Consumer Confidence Report and personal communication with Avila Valley MWC Director Jerry Hartzell*

Avila Valley Mutual Water Company (Avila Valley MWC) serves a small cluster of homes in the Avila Valley area. The service area is fully built out.

Existing and Build-out Population: 65 (28 connections)

Water Demand. Water demand is summarized as follows:

- 2008 Average Day Demand (ADD): 32 AFY (28,000 gpd)
- Build-out ADD: 32 AFY (28,000 gpd)

Water Supply. Avila Valley MWC receives its water supply from surface sources. The Avila Valley MWC contracts with the District for a 20 AFY allocation of State Water and 60 AFY of Drought Buffer which is wheeled through Zone 3 facilities. An additional 12 AFY allocation of Lopez Lake water procured from CSA 12 brings the total supply to 32 AFY. Two wells are also owned by the Avila Valley MWC for emergency backup purposes, but because quality is less than desirable, they are not used on a regular basis.

Avila Valley MWC has been noted as being interested in an additional 20 to 40 AFY of State Water should it become available (Additional/New Allocation Requests – Planning Purposes Only, 10/22/09).

Water Quality: The quality of Avila Valley MWC water is similar to others using water from Lopez Lake. Raw well water is of poor quality and would only be treated and used as an emergency backup in case of disruption of the surface supply.

San Miguelito Mutual Water Company

Source: *2008 San Miguelito MWC Consumer Confidence Report and personal communication with Director Rick Koon*

San Miguelito Mutual Water Company (San Miguelito MWC) serves the San Luis Bay Estates area in the community of Avila Beach.

2008 Population Served: 1385 (620 connections)
Build-out Population: Estimated at 2100 (930 connections)

Water Demand. Water demand is summarized as follows:

- 2008 Average Day Demand (ADD): 263 AFY (0.24 MGD)
- Build-out ADD: 393 AFY (0.35 MGD.) (based on 70/30 supply goal discussed below)

Water Supply. San Miguelito MWC receives its water supply from both surface and groundwater sources. The San Miguelito MWC contracts with the District for a 275 AFY allocation of State Water and 275 AFY of Drought Buffer which is wheeled through Zone 3 facilities. Additional water is pumped from three local wells which draw water from the aquifer fed by San Luis Obispo Creek.

The San Miguelito MWC's goal is to provide consumers with a 70/30 blend of surface/well water, but problems with the well system have limited its contribution to 10 to 20% in recent years.

With a fully functioning water supply system, the San Miguelito MWC has adequate supply to meet both existing and future water requirements. San Miguelito MWC has been noted as being interested in an additional 10 AFY of State Water should it become available (Additional/New Allocation Requests – Planning Purposes Only, 10/22/09).

Water Quality. Quality of San Miguelito MWC water is similar to others using water from Lopez Lake. Raw well water is treated for iron and manganese removal and mixed with Lopez Lake water prior to delivery.

County Service Area 12 (including Port San Luis)

Source: *2005 Zone 3 UWMP*

County Service Area 12 (CSA 12) provides 61 AFY of Lopez Reservoir water to customers in the rural area east of Avila Beach and transfers up to 100 AFY of Lopez Reservoir water through its piping system to Port San Luis. The Port currently uses only 35% (35 AFY) of that allocation. In addition, CSA 12 transfers water through its piping system to Avila Beach CSD, Avila Valley MWC, and San Miguelito MWC (discussed separately).

Water supplies for CSA 12 also include 7 AFY from the State Water Project allocated to the San Luis Coastal Unified School District. Entities within CSA 12 have been noted as being interested in an additional 30 AFY of State Water should it become available (Additional/New Allocation Requests – Planning Purposes Only, 10/22/09).

South Coast WPA 7

Golden State Water Company (Edna Valley)

Source: *GSWC files*

Golden State Water Company (GSWC) supplies its Edna Valley customers with domestic water service.

Land Use and Service Population. Golden State's Edna Road service area is an unincorporated area located in San Luis Obispo County, California along Highway 227 to the south of the City of San Luis Obispo, not far from the County Airport. The Edna Road area is comprised of residential and agriculture areas and dominated by the San Luis Obispo Country Club, which includes an 18-hole golf course.

Water Demand. Existing demand has been calculated by multiplying the 9 year average demand per connection by the number of active service connections. This results in an existing demand of 410 AFY for year 2007.

- 2007 Average Day Demand (ADD): 410 AFY (0.366 MGD)
- 2007 and Build-out Per Connection Demand: 0.683 AFY/connection
- Build-out ADD: (Year 2030): 482 AFY based on 712 connections and an annual growth rate of 0.71%

Water Supply. The GSWC Edna Road service area draws water from three wells, each with 500 gpm pumping capacity. The wells tap the Edna Valley groundwater basin.

Water Quality. The Edna Road System groundwater sources currently comply with all primary and secondary MCLs; however, treatment is required. Lewis Lane Wells No.3 and No.4 are treated for high iron and manganese by oxidation and subsequent filtration, as well as

partial treatment for intermittently high selenium by ion exchange (IX). Nitrate and arsenic are also present in all three wells, but average less than one half the MCL, and are removed along with selenium in the IX unit.

Northern Cities Management Area (NCMA)

City of Pismo Beach

Source: *2004 City of Pismo Beach Water Master Plan, 2005 City of Pismo Beach UWMP, 2008 and 2009 NCMA Annual Reports*

The City of Pismo Beach supplies its customers with domestic water service and fire protection.

Land Use and Service Population. The City of Pismo Beach is located in the southern portion of San Luis Obispo County, extending along the Pacific Ocean shoreline some seven miles. The dominant economic activity in Pismo Beach is tourism, and as a result the population of the City can more than double during summer holidays.

2004 Conditions: Population: 8,551

Build-out Conditions: Population: 11,122

Water Demand. Water demand is summarized as follows:

- 2008 Average Day Demand (ADD): 2,208 AFY (1.97 MGD)
- 2009 ADD: 2,039 AFY (1.82 MGD)
- 2004 residential demand: 161 gpcd
- Build-out ADD: 2,977 AFY (2.66 MGD.) at 0.68 AFY/acre (includes land within the SOI)

Water Supply- Existing. The City receives water from three water sources: local groundwater, Lopez Reservoir and the State Water Project. These sources are described below:

- 700 AFY local groundwater is extracted from the Arroyo Grande Plain, which is part of the Santa Maria Groundwater Basin. Extraction rights are shared by agreement with the City of Arroyo Grande, the City of Grover Beach, and the Oceano Community Services District. As party to the Santa Maria Groundwater Basin litigation, extraction rights may be decreased at a future date.
- 896 AFY from the Zone 3 Lopez Project is provided as a contractual supply to the City of Pismo Beach. Environmental protection issues may call for increased releases to Lopez Creek, thereby reducing the allotment available for Pismo Beach and other cities.
- 1,240 AFY comes from the SWP via contract with the District and delivery through Zone 3 facilities. 140 AFY of this contracted amount has been allocated for Pismo Ranch. The City also has a 1,240 AFY Drought Buffer allocation.

Water Supply – Future. Future water supply possibilities include the use of the Pismo Ranch allocation, tertiary treatment/reuse of wastewater, desalination, and extraction and treatment of groundwater from local basins. The City, in coordination with the NCMA, is also investigating the feasibility of increasing the safe yield of Lopez Reservoir. At this point, the use of the Pismo Ranch allocation has been deemed to be a cost-effective alternative. The City is in the process

of initiating a supplemental recycled water study as a joint project with the City of Arroyo Grande. The City has been noted as being interested in an additional 500 AFY of State Water and 1500 AFY of Drought Buffer should it become available (Additional/New Allocation Requests – Planning Purposes Only, 10/22/09).

Water Quality. For the City of Pismo Beach, the most significant water quality issue is the formation of disinfection-by-products (DBP) in the treatment process, specifically trihalomethanes (THMs). THMs are a group of compounds formed during disinfection by the reaction of chlorine with naturally occurring organics. While the City has consistently met the current 80 micrograms-per-liter limits, there have been occasional instances in which the standard has been exceeded due to the high organic content of Lopez Reservoir water during certain times of the year. The new regulations require increased chlorine contact times, which will cause the THM levels to exceed the regulations.

Also of concern are nitrate levels in storage tanks. Due to the use of ammonia and chlorine to form chloramines, it is possible for nitrification to occur in the tanks where there is not adequate turnover. The City staff continually monitors the distribution system and storage detention times to assure adequate turnover. This ensures good quality water

Groundwater is typically calcium bicarbonate-sulfate in character, based on data from 1992-2000, with a median TDS value of 765 mg/l. Nitrates are low for the two wells used by the City. Well No.5 exceeded Primary Drinking Water Standards for uranium in the most recent CCR, but through appropriate mixing with water from other sources, the City has been able to deliver water that meets drinking water standards over the past decade.

City of Arroyo Grande

Source: *2005 City of Arroyo Grande UWMP and 2008 and 2009 NCMA Annual Report*

The City of Arroyo Grande supplies its customers with domestic water service and fire protection.

Land Use and Service Population. The City of Arroyo Grande is located in the southern portion of San Luis Obispo County along the banks of the Arroyo Grande Creek. Land use is primarily residential and agriculture with a small commercial sector. There are no agricultural or industrial water service connections.

2005 Conditions: Service Population: 16,637

Build-out Conditions (2025): Population: 20,224

Water Demand. Water demand is summarized as follows:

- 2005 Average Day Demand (ADD): 3,415 AFY (3.05 MGD)
- 2008 ADD: 3,531 AFY (3.15 MGD)
- 2009 ADD: 3,315 AFY (2.96 MGD)
- 2005 gross demand: 183 gpcd
- Build-out ADD: 4,150 AFY (3.71 MGD.)

Water Supply - Existing. The City has agreements in place to draw up to 3,794 AFY from four water sources: two groundwater basins, Lopez Reservoir and through Oceano CSD. These sources are described below:

- 1,314 AFY is the City's share of groundwater extracted from the Arroyo Grande Plain, which is part of the Santa Maria Groundwater Basin. Extraction rights are shared by agreement with the City of Pismo Beach, the City of Grover Beach, and the Oceano Community Services District. This includes a 112 AFY allocation from an Agricultural Land Conversion Credit. As party to the Santa Maria Groundwater Basin litigation, extraction rights may be decreased at a future date.
- 90 AFY groundwater is extracted from the Pismo Formation which is outside of the NCMA and not subject to management agreements.
- 2,290 AFY from the Zone 3 Lopez Project is provided as a contractual supply to the City of Arroyo Grande. Environmental protection issues may call for increased releases to Lopez Creek, thereby reducing the allotment available for Arroyo Grande and other cities.
- 100 AFY from Oceano Community Services District (Oceano CSD). The City of Arroyo Grande and Oceano CSD have entered into an interim water supply agreement, for delivery of up to 100 AFY of Oceano CSD water to the City. The City is currently using between 90% and 95% of their current supply allocation, and therefore is in need of temporary provisions to meet water supply needs. Oceano CSD will deliver up to 100 AFY of groundwater and/or State Water, at Oceano CSD's discretion. This temporary agreement ends in 2014.

Water Supply – Future. Future water supply possibilities include desalination, recycled water and State Water. Arroyo Grande has been noted as being interested in 200 to 400 AFY of State Water should it become available (Additional/New Allocation Requests – Planning Purposes Only, 10/22/09). Extension of the Nacimiento pipeline project was considered; however, the project was not deemed financially viable.

Water Quality. Lopez Lake water has seasonal quality fluctuations that must be addressed by adjusting treatment methods.

Groundwater quality varies by depth and source, with some of the shallower wells drawing water with high nitrate levels. Water extracted from the Pismo Formation receives iron/manganese treatment prior to delivery. Through appropriate mixing the City has been able to deliver water that meets drinking water standards.

City of Grover Beach

Source: *2005 City of Grover Beach UWMP, 2008 and 2009 NCMA Annual Reports, Draft 2010 Water Master Plan*

The City of Grover Beach supplies its customers with domestic water service and fire protection.

Land Use and Service Population. The City of Grover Beach has a Mediterranean coastal climate with mild and dry summers, cool winters and an annual average of 16 inches of precipitation. During the summer months, fog helps reduce irrigation requirements by decreasing evapotranspiration. Grover Beach is primarily a residential community, with a small commercial/industrial sector. Approximately 80% of the water consumers are residents. No

agricultural consumers are served by the City water system, though landscape irrigation consumes approximately 90 AFY.

2009 Population: 13,254.

Build-out Population: Future build-out population, based on zoning and land use designations within the City boundary, is estimated at 15,000. It is expected to reach this level by 2030.

Water Demand. Water demand is summarized as follows:

- 2005 Average Day Demand (ADD): 2036 AFY (1.88 MGD)
- 2008 ADD: 2030 AFY
- 2009 ADD: 1940 AFY
- 2009 Per Capita Demand: 131 gpcd
- 17-year Average Per Capita Demand: 138 gpcd
- Future ADD at Build-out: 1,892 - 2,500 AFY (1.69 - 2.23 MGD) (20% level of conservation for the lower end of the range)

Water Supply. The City of Grover Beach receives water from Lopez Lake and also uses groundwater from four municipal wells and one irrigation pump. The description of these sources follows:

- 800 AFY Lopez Lake:
  The Zone 3 Lopez Project provides a contractual supply of up to 800 AFY to the City of Grover Beach, which is currently part of the safe yield of Lopez Lake. Environmental protection issues may call for increased releases to Lopez Creek, thereby reducing the allotment available for Grover Beach and other cities.
- 1,407 AFY Groundwater:
  Three shallow wells draw water from the Paso Robles formation and a fourth well draws water from the deeper Careaga formation. Extraction rights are shared by agreement with the City of Arroyo Grande, the City of Pismo Beach, and the Oceano Community Services District. The City of Grover Beach is currently entitled to 1,407 AFY from this source per the agreement. This includes a 207 AFY allocation from an Agricultural Land Conversion Credit. As party to the Santa Maria Groundwater Basin litigation, extraction rights may be decreased for both of these allocations at a future date.
- 225 AFY Non-potable Groundwater
  The 225 AFY pumped from irrigation wells is used on the State Parks Department golf course and a large park within the City.

The City had a temporary transfer agreement with the Oceano CSD that allowed the City to purchase up to 100 AFY, but this agreement has expired.

Water Supply – Future: Potential future water supply sources under consideration include desalination, State Water and recycled wastewater. Extension of the Nacimiento pipeline project was considered; however, the project was not deemed financially viable.

Water Quality: Lopez Lake water has seasonal quality fluctuations that must be addressed by adjusting treatment methods. The ground water from the Paso Robles formation meets all state and federal standards except for nitrate concentration. The City of Grover Beach

completed construction of an ion exchange water treatment plant designed to remove nitrates from the shallow well water in 1989. This allows the City to use its shallow well water to produce water straight into the water mains after it passes through the treatment plant and a chlorination station.

Oceano Community Services District

Source: *2009 Oceano Community Services District Draft Water Master Plan Update and 2008 and 2009 NCMA Annual Reports*

Formed in November 1980, the Oceano Community Services District (Oceano CSD) took over several responsibilities of the County and now provides water, street lighting, sewage collection, garbage collection, fire protection and basic life support services, and parks and recreation services. The County still maintains responsibility for roads, drainage, land use planning, and general services. The service area has not changed since 1980 and encompasses approximately 1,150 acres with elevations ranging from sea level to 110 ft.

Land Use and Service Area Population. The Oceano CSD service area is located immediately to the south of Grover Beach and Arroyo Grande with the Pacific Ocean to the West in the County of San Luis Obispo. Oceano CSD includes over 450 acres of land zoned residential, 59 acres commercial, 40 acres industrial, 94 acres agricultural, and 99 acres zoned public facility.

Existing Population: Existing population (as of July 2009) within the Oceano CSD service area was based on evaluation of water and sewer connections, prior master plans (Garing & Taylor, 2004), and County data. Current population is estimated at 8,137.

Build-out Population: Future build-out population, based on zoning and land use designations within the CSD boundary, is estimated at 12,855.

Water Demand. Water demand is summarized as follows:

- 2008 Average Day Demand (ADD): 934 AFY (0.83 MGD)
- 2009 ADD: 885 AFY (0.79 MGD)
- 2008 Per Capita Demand: 97 gpcd
- Future ADD at Build-out: 1,419 AFY (1.27 MGD)
- Maximum Month Demand: 1.7 times ADD

Water Supply. The Oceano CSD utilizes water from three sources, including groundwater, the State Water Project and Lopez Lake water. A breakdown of the Oceano CSD's allocations is as follows:

- 900 AFY groundwater allocation, limited to this amount by agreement with the City of Arroyo Grande, the City of Pismo Beach, and the City of Grover Beach. As party to the Santa Maria Groundwater Basin litigation, extraction rights may be decreased at a future date.
- 303 AFY allocation from Lopez Lake, subject to possible reduction if habitat requirements dictate.
- 750 AFY from the State Water Project, but subject to limitations (see SWP

discussion).
- 1,953 AFY Total

Based on an evaluation of water supply reliability, based on 66% availability of State Water due to drought and/or environmental restrictions, the reliable State water supply is estimated at 495 AFY, for a total water supply for Oceano of 1,698 AFY. Participation in the District's drought buffer program for State Water would improve water supply reliability for the Oceano CSD.

The City of Arroyo Grande and Oceano CSD have entered into an interim water supply agreement, for delivery of up to 100 AFY of Oceano CSD water to the City. As indicated in the discussion on Arroyo Grande, the City is currently using between 90% and 95% of their current supply allocation, and therefore is in need of temporary provisions to meet water supply needs. Oceano CSD will deliver up to 100 AFY of groundwater and/or State Water, at Oceano CSD's discretion. This temporary agreement ends in 2014.

Water Quality. In reviewing the CCR for 2008, the Oceano CSD continues to meet all Federal and State Drinking Water Standards. Selenium levels continue to be high, from two of their existing wells (Wells 4 and 5); however, with blending of the various other water sources, the drinking water standard continues to be met.

The selenium concentrations in Wells 4 and 5 have appeared to increase since the 2004 G&T WMP Report. However, interestingly, the recent results also show a fairly clear trend of diminishing selenium concentrations over the past year. It is uncertain what may be the reason for the decline this past year; possibly the current drought conditions may have some effect on the selenium concentrations in the groundwater. Regardless, the concentrations of selenium remain above the MCL of 50 ug/L, and must continue to be monitored and blended with other water supplies to achieve the MCL requirements.

Nipomo Mesa Management Area (NMMA)

Golden State Water Company (Nipomo Area)

Source: *GSWC files, 2005 Santa Maria Groundwater Litigation Stipulation and 2008 and 2009 NMMA Annual Report*

The Golden State Water Company (GSWC) provides water service to approximately 1,475 households on the south side of Nipomo.

Land Use and Service Population. GSWC serves a rural population that is undergoing development and is expected to grow at a projected rate of 1.42 percent over the next two decades until build out (2030).

Water Demand. Water demand has been calculated based on historical use data. Existing and future water service areas and demands are summarized as follows:

Current Conditions
- 2007 Water service connections: 1,495
- 2007 9-year Average Water Consumption: 0.94 AFY/connection
- 2007 Average Day Demand (ADD): 1,405 AFY (1.25 MGD)

- 2008 ADD: 1,380 AFY (per 2008 NMMA Annual Report)
- 2009 ADD: 1,290 AFY (per 2008 NMMA Annual Report)

Build-out Conditions (2030)

- Water service connections: 2,068
- Average Water Consumption: 0.94 AFY/connection
- Average Day Demand (ADD): 1,944 AFY (1.74 MGD)

Water Supply. GSWC presently uses groundwater for 100% of supply requirements. Groundwater is pumped from the larger Santa Maria Valley Groundwater Basin (SMVGB) using five active wells. Total capacity of this system exceeds current 1,405 AFY requirements; however, litigation involving use of the SMGWB, which began in 1997, has resulted in stipulations and judgments in 2005 and 2008. As party to the Santa Maria Groundwater Basin litigation, extraction rights may be affected at a future date. In addition, the stipulated judgment has required GSWC to join with Nipomo CSD to develop alternative sources to import a minimum of 2,500 AFY. Once the supplemental water system is in place, GSWC will be required to purchase 8.33% (208.25 AFY) of that supply.

Water Quality. Water quality is formally monitored as part of the requirements of the NMMA stipulation. Wells are monitored regularly and reported publicly. The 2009 NMMA report has concluded that there is no evidence of seawater intrusion into the the NMMA portion of the groundwater basin. Localized areas of the NMMA have reported nitrate concentrations as high as 90 percent of the Maximum Contaminant Level and rising nitrate concentrations in groundwater. Three of the GSWC wells are currently being treated for iron and manganese.

Nipomo Community Services District

Source: *2007 Nipomo CSD Water and Sewer Master Plan Update, 2008 and 2009 NMMA Annual Reports, and 2009 Nipomo CSD Waterline Intertie Project Narrative Report, 2010 Public Review Draft Urban Water Management Plan (UWMP)*

The town of Nipomo is an unincorporated area located in southern San Luis Obispo County, the first community on Highway 101 entering the county from the south. The Nipomo Community Services District (Nipomo CSD) provides water service and wastewater services to approximately 12,000 residents. The Nipomo CSD is part of the Nipomo Mesa Management Area (NMMA) for management of groundwater resources.

Land Use and Service Population. The Nipomo CSD serves a rural area that is undergoing development. Development is expected to continue to expand in the future, more than doubling water demands at build-out.

Water Demand. Water demand has been calculated based on land-use categories and water duty factors. Existing and future water service areas and demands are summarized as follows:

Current Conditions

- Water Service Connections (2010): 4,128
- Baseline Gross Water Use: 244.8 gallons per capita per day (gpcd) (10 year average 1997-2006)
- 2009 Water Use: 222.7 gpcd

- 2006 Average Day Demand (ADD): 3,000 AFY (2.67 MGD)
- 2008 ADD: 2,700 AFY (per 2008 NMMA Annual Report)
- 2009 ADD: 2,560 AFY (per 2009 NMMA Annual Report)
- 2010 ADD: 2,698 AFY (per 2010 Draft UWMP)

Build-out Conditions (2030)

- Water Service Connections: 5,323
- Future Water Use: 195.8 gpcd
- Average Day Demand (ADD): 2,984 AFY (2.66 MGD) based on conservation goals

Water Supply. Nipomo CSD presently uses groundwater for 100% of supply requirements. Groundwater is pumped from the larger Santa Maria Valley Groundwater Basin (SMVGB) using eight active and one standby wells. Total capacity of this system exceeds current 3000 AFY requirements; however, litigation involving use of the SMVGB, which began in 1997, has resulted in stipulations and judgments in 2005 and 2008. As party to the Santa Maria Groundwater Basin litigation, extraction rights may be affected at a future date. The stipulation has also required the Nipomo CSD to develop alternative sources to import a minimum of 2,500 AFY.

Water Supply – Future: The Nipomo CSD has investigated multiple sources of supplemental water and, as a result, signed an agreement with the City of Santa Maria (City) to pursue a Waterline Intertie Project. The January 5, 2010 Wholesale Water Supply Agreement established the basis for purchase and delivery of water from the City to the Nipomo CSD. The project EIR has been certified. The Nipomo Waterline Intertie Project is going through its final design and financing stages. If constructed, it will be capable of delivering up to 3,000 AFY and could be completed in two and a half years. Three other water purveyors, Woodlands MWC, Golden State WC, and Rural Water Company will share in the costs project and will together receive one-third of the mandated minimum water delivery (833 of 2,500 AFY). The additional 500 AFY capacity has been reserved for use by the Nipomo CSD. Additional water via the City (if possible), desalination and recycled water are also being considered as a long term alternative source.

Water Quality. Water quality is formally monitored as part of the requirements of the NMMA stipulation. Wells are monitored regularly and reported publicly. The 2009 NMMA report has concluded that there is no evidence of seawater intrusion into the NMMA portion of the groundwater basin. Localized areas of the NMMA have reported nitrate concentrations as high as 90 percent of the Maximum Contaminant Level and rising nitrate concentrations in groundwater. There is a concern that nitrate levels are increasing in wells near the Southland WWTF. Though studies have not tied this increase to current effluent disposal practices, the WWTF is investigating alternative effluent disposal methods that will enhance groundwater recharge without increasing nitrate levels.

Rural Water Company

Source: *2008 and 2009 NMMA Annual Reports and 2005 Santa Maria Groundwater Litigation Stipulation*

Rural Water Company (RWC) provides water to consumers on the north side of the Nipomo Mesa, including Cypress Ridge, a planned development consisting of approximately 380 homes and a gold course.

Land Use and Service Population. RWC serves a residential community that includes both densely spaced homes and numerous large lot rural residences. It also provides non-potable water to the Cypress Ridge Golf Course to supplement irrigation from recycled wastewater. The golf course is irrigated partially by effluent from the Cypress Ridge Wastewater Treatment Facility (Cypress Ridge WWTF), which in turn uses some of the golf course water features as finishing ponds in the waste treatment process.

Water Demand. Water demand has been calculated based on historical use data. Existing and future water service areas and demands are summarized as follows:

Current Conditions

- Population served: 1850
- 2008 ADD: 900 AFY (per 2008 NMMA Annual Report)
- 2009 ADD: 880 AFY (per 2009 NMMA Annual Report)

Build-out Conditions (2030)

- Water service connections: xxx
- Average Water Consumption: xx AFY/connection
- Average Day Demand (ADD): xxx

Water Supply. RWC presently uses groundwater for 100% of potable water supply requirements. Groundwater is pumped from the larger Santa Maria Valley Groundwater Basin (SMVGB) using several active wells. However, litigation involving use of the SMGVB, which began in 1997, has resulted in stipulations and judgments in 2005 and 2008. As party to the Santa Maria Groundwater Basin litigation, extraction rights may be affected at a future date. The stipulation has required RWC to join with Nipomo CSD to develop alternative sources to import a minimum of 2,500 AFY. Once the supplemental water system is in place, RWC will be required to purchase 8.33% (208.25 AFY) of that supply.

The Cypress Ridge WWTF currently produces approximately 50 AFY of irrigation quality effluent which is used on the golf course.

Water Quality. Water quality is formally monitored as part of the requirements of the NMMA stipulation. Wells are monitored regularly and reported publicly. The 2009 NMMA report has concluded that there is no evidence of seawater intrusion into the the NMMA portion of the groundwater basin. Localized areas of the NMMA have reported nitrate concentrations as high as 90 percent of the Maximum Contaminant Level and rising nitrate concentrations in groundwater.

Woodlands Mutual Water Company

Source: *2004 Water Master Plan, 2005 Santa Maria Groundwater Litigation Stipulation and 2008 and 2009 NMMA Annual Reports*

The Woodlands is a relatively new housing and commercial development located on the Nipomo Mesa in southern San Luis Obispo County. It is a planned community to be built out in four phases over time, with economic conditions influencing the date of completion. The Woodlands Mutual Water Company (Woodlands MWC) was organized to provide water to customers within the Woodlands Development. The Woodlands MWC currently supplies its

customers with domestic water service, fire protection, wastewater collection, and wastewater reclamation.

Land Use and Service Population. The Woodlands has a tentative map allowing for 1,320 residential units, plus additional commercial facilities. Currently, there are 685 residential lots that have been recorded in final maps. Commercial facilities for the golf course are also constructed at this time. Other facilities that may be constructed in the future include commercial facilities at the business park, a hotel, and a possible school. The planned development also currently has an 18-hole golf course and a smaller 12-hole executive course. The on-site wastewater treatment plant provides the golf courses with recycled water for irrigation; however, it is also supplemented with groundwater. Another 18-hole golf course is also planned for the future, which will be irrigated with groundwater.

Water Demand. Existing and future water service areas and demands are summarized as follows:

Current Conditions

- 2009 ADD: 810 AFY (per 2009 NMMA Annual Report)

Build-out Conditions (2030)

- Average Day Demand (ADD): 1,600 AFY

The Woodlands Development is progressing with its phased development of homes and other planned facilities. Of the 1,320 future dwelling units, 685 parcels have been recorded and are ready for construction. As of September 2009, there are 323 active residential or commercial water service connections. In 2008, Woodlands MWC delivered 402 AFY to customers for commercial, residential, and common area irrigation use. This does not include raw water that was pumped for golf course purposes.

Based on the 2004 Water Master Plan, it is estimated that at build-out, Woodlands MWC will use approximately 872 AFY for all uses except golf course irrigation. When all golf courses are complete, they will require an additional 687.5 AFY. The table below provides a summary of the estimated water usage (excluding golf course irrigation) by land use.

Table 3.9. Summary of Estimated Water usage for The Woodlands

User	Units	Type of Unit	Demand, gpm	Total Usage, gpm (afy)
Residential Single Family	1,220	D.U.	0.3	366.00 (590.4)
Residential Multi-Family	100	D.U.	0.137	13.70 (22.1)
Village: Mixed Use	10.46	acres	1.3	13.60 (21.9)
Resort: Hotel	500	rooms	0.093	46.50 (75.0)
Resort: Mixed Use	23.67	acres	1.3	30.77 (49.6)
Business Park	20.29	acres	1	20.29 (32.7)
Golf Clubhouse	2	facilities	3.97	7.94 (12.8)
School	600	students	0.019	11.40 (18.4)
Maintenance/WWTP	1	lump	4.53	4.53 (7.3)
Parks	16.64	acre	1.55	25.79 (41.6)
Total				**540.48 (871.8)**

Water Supply. Currently, the Woodlands MWC relies on groundwater as the sole source of water. The Woodlands MWC owns and operates four wells, three of which produce potable water and the fourth serves irrigation needs. Groundwater is pumped from the Nipomo Mesa Management Area (NMMA) of the Santa Maria Groundwater Basin, an aquifer that has been the subject of ongoing litigation since 1997. As a party to the Santa Maria Groundwater Basin litigation, extraction rights may be affected at a future date. A 2005 Settlement Stipulation requires that NMMA water purveyors import a minimum of 2,500 acre-feet of supplemental water to the NMMA each year.

Woodlands MWC is cooperating with other water purveyors to meet the requirements of the Stipulation. The Nipomo Community Services District (Nipomo CSD) is serving as lead agency to develop the Waterline Intertie Project (WIP) that will connect the City of Santa Maria water system to the Nipomo CSD system, providing 2,500 AFY to the NMMA and an additional 500 AFY to Nipomo CSD. Woodlands MWC has agreed to purchase a portion of the NMMA supplemental water (determined according to the percentage of completion of the project and rising to a total of 417 AFY at such time as its service area is fully developed). Woodlands MWC has also agreed to pay a portion of the operating costs, capital costs and replacement costs of the project based on the amount of water purchased by Woodlands MWC relative to the total amount purchased from the City of Santa Maria. Woodlands MWC also has the right to exercise an option for an additional 300 AFY from the WIP at a future date.

24 AFY of recycled water was used in 2008 to partially irrigate the golf course. As more residential units are completed, increased quantities of wastewater will be available for recycling. The build-out flow of the WWTP is 774 AFY. Well water will continue to be required during periods in which the recycled water available is less than the golf course demand.

Water Quality. Water quality is formally monitored as part of the Woodlands MWC's participation in the NMMA Technical Group, and also as a requirement of the Department of Public Health. Wells are monitored regularly and reported publicly. . The 2009 NMMA report has concluded that there is no evidence of seawater intrusion into the the NMMA portion of the groundwater basin. Localized areas of the NMMA have reported nitrate concentrations as high as 90 percent of the Maximum Contaminant Level and rising nitrate concentrations in groundwater. The most recent Consumer Confidence Report indicated that Woodlands MWC supplied water that met both primary and secondary drinking water standards. One of the wells exceeds the standards for iron, but mixing with water from other wells produces water that meets the iron standard.

Conoco Phillips

Source: *2008 and 2009 NMMA Annual Reports and 2005 Santa Maria Groundwater Litigation Stipulation*

Conoco Phillips uses water for industrial operations at its refinery on the Nipomo Mesa.

Water Demand. Water demand has decreased in recent years due to infrastructure changes resulting in more water-efficient operations. Planned expansion will increase water demand, but demand will remain less than historical peak pumping rates.

Current Conditions

- 2008 Average Day Demand (ADD): 1,100 AFY (0.98 MGD)
- 2009 ADD: 1,200 AFY (1.07 MGD)

Build-out Conditions

- Average Day Demand (ADD): 1,400 AFY (1.25 MGD)

Water Supply. Conoco Phillips uses groundwater for 100% of supply requirements. Though it is a party to the Santa Maria Groundwater stipulation, it is not required to participate in the development of supplemental water. It has rights to reasonable and beneficial use of groundwater without limitation, except in the event of a Severe Water Shortage, as defined in the stipulation.

Water Quality. Water quality is formally monitored as part of the requirements of the NMMA stipulation. Wells are monitored regularly and reported publicly. The 2009 NMMA report has concluded that there is no evidence of seawater intrusion into the the NMMA portion of the groundwater basin. Localized areas of the NMMA have reported nitrate concentrations as high as 90 percent of the Maximum Contaminant Level and rising nitrate concentrations in groundwater. One of the Conoco Phillips wells reported a high (1000 mg/l) TDS value. The well is used for industrial processing.

Huasna Valley WPA 8

The Huasna Valley WPA has no large water purveyors. Water usage in this WPA is analyzed as overlying use.

Cuyama Valley WPA 9:

Cuyama Community Services District

Source: *2005 Grand Jury Report and SB County 2008 Water Production Survey*

The Cuyama Community Services District (Cuyama CSD) provides water to consumers in and around the community of New Cuyama in Santa Barbara County. Because the Cuyama CSD draws from an aquifer that extends into San Luis Obispo County, a brief discussion of this water purveyor is included.

Land Use and Service Population: The community of New Cuyama was established as a company town by Atlantic-Richfield to provide housing and services for its workers. The water supply system is now owned and operated by the Cuyama CSD, serving approximately 820 residents. There are 217 single family, 15 commercial, and 22 landscape connections.

Water Demand. Water demand is summarized as follows:

- 2008 Average Day Demand (ADD): 172 AFY (0.15 MGD)
- 2008 Per Capita Demand: 112 gpcd residential, 187.4 gpcd gross
- Future ADD at Build-out: unknown

Water Supply. Cuyama CSD draws all of its supply from wells which tap the Cuyama Valley groundwater basin. The basin as a whole is in a critical stage of overdraft. Efforts to sustainably manage the basin are hampered because the basin underlies four counties.

Water Quality: Because of constant cycling and evaporation of irrigation water in the basin, water quality has been deteriorating. Nitrate concentrations in some shallow wells in the area have exceeded 400 mg/l. Water from one of the principle wells contains arsenic at relatively high levels, often approaching the current arsenic MCL of 50 ppb. A treatment system has been installed to reduce levels of arsenic prior to distribution.

INLAND SUBREGION

This section describes water supply, water demand, and water quality for Water Planning Areas 10 to 16:

- Carrizo Plain WPA 10
- Rafael/Big Spring WPA 11
- Santa Margarita WPA 12: Santa Margarita Ranch and CSA 23 (Santa Margarita)
- Atascadero/Templeton WPA 13: Garden Farms CWD, Templeton CSD and Atascadero Mutual Water Company
- Salinas/Estrella WPA 14: San Miguel CSD, Camp Roberts, City of Paso Robles, and CSA 16 (Shandon)
- Cholame WPA 15
- Nacimiento WPA 16: Oak Shores (Nacimiento Water Company) and Heritage Ranch CSD

Carrizo Plain WPA 10

The Carrizo Plain WPA has no large water purveyors. Water usage in this WPA is analyzed as overlying use. Due to the age of previous water studies for this area, potential demands and groundwater characterization from water studies completed for two proposed solar power projects are included in this discussion. The modeling completed for these two projects analyzes a significant portion of the Carrizo groundwater basin.

Source: John Kessler, California Energy Commission (excerpts from Carrizo Energy Solar Farm); John Larson, URS Corporation (SunPower Project); Tim Cleath, Cleath-Harris Geologist, Inc. (SunPower Project); SunPower - California Valley Solar Ranch Environmental Impact Report (EIR), Topaz Solar Farm (First Solar) Draft Environmental Impact Report.

These two large solar farms are referred to as the Topaz Solar Farm, and the SunPower-California Valley Solar Ranch. These proposed projects are 550 and 250 megawatt solar power plants, respectively. Both projects propose to use photovoltaic technology, which will consume less water than steam-producing plants.

Water Demand. Water demand is summarized as follows:

Topaz Solar Farm (per DEIR):

- Project Construction Average Day Demand (ADD): 199 - 273 AFY for two years (0.18 – 0.24 MGD); 48 – 69 AFY for the third year (0.04 – 0.06 MGD)
- Ongoing Project Operation: 4.5 AFY (0.004 MGD)

Sun Power-California Valley Solar Ranch (per EIR):

- Project Construction Average Day Demand (ADD): 40.84 AFY for three years (0.04 MGD)
- Ongoing Project Operation: up to 9.3 AFY (0.008 MGD)

During operation of the facilities, (long-term) water demand would be required for washing solar panels if needed, potable water for employees, service water for general site uses including irrigation, and fire protection.

Water Supply.

DWR Safe Yield: 600 AFY (based on demand in 1954)
Kemnitzer Safe Yield: 59,000 AFY (based on 1967 inflow/outflow analysis)

Taking into consideration the methodologies used in previous studies, current and historical groundwater levels, and water quality, the solar project EIRs' water analyses conclude that a more reasonable safe yield to base planning decisions on ranges between 8,000 – 11,000 AFY.

Water Quality: Groundwater quality has a wide range of qualities, as noted in the groundwater resources discussion for the Carrizo Plain. Additionally, according to the Sun Power EIR, the results of groundwater quality testing conducted on samples for the proposed Sun Power solar project well indicate TDS content of 4,940 mg/L at the proposed project site. The EIR concludes that the groundwater quality, with treatment (reverse osmosis is proposed), is useable for the proposed project, particularly considering historic land uses of the area and understanding of aquifer characteristics. Similarly, according to the Topaz Farm EIR, the results

of groundwater quality testing conducted on samples for the proposed Topaz Farm solar project well indicate water from the lower aquifer is not suitable for drinking water without treatment and primarily exceed the drinking water standard for nitrate.

Rafael/Big Spring WPA 11

The Rafael/Big Spring WPA has no large water purveyors. Water usage in this WPA is analyzed as overlying use.

Santa Margarita WPA 12

Santa Margarita Ranch

Source: *Santa Margarita Ranch Agricultural Residential Cluster Subdivision Project and Future Development Program EIR*

The Santa Margarita Ranch (Ranch) encompasses approximately 14,000 acres and is located immediately east of U.S. Highway 101, and surrounds the community of Santa Margarita, between the cities of San Luis Obispo and Atascadero.

Land Use and Service Population. The land currently functions as ranch and vineyard with minimal residential water use. Approximately 96% of the water is used by vineyards and other farm operations. An Agricultural Residential Cluster Subdivision (ARCS) is proposed, including 3,778 acres near the middle of the Ranch, southeast of the community of Santa Margarita. A Future Development Program (FDP) is planned in various locations throughout the balance of the property. The proposed ARCS includes 111 large-lot residential units and agricultural reserves. The FDP covers a variety of development types, including 402 residences, a golf course, guest ranch, wineries, and other commercial and recreational facilities.

Water Demand. The existing Ranch water use is estimated at 1,621 AFY based on land use water factors. Planned expansion of orchards and vineyards will increase water use to 4,263 AFY. The EIR states that the ARCS would increase water demand by 161 AFY. Implementation of the FDP would add an additional 1,466 AFY of demand. Based on these values, the total build-out demand is 5,890 AFY.

Water Supply - Existing. Existing Santa Margarita Ranch water demands are supplied entirely by groundwater. The Ranch property is currently served by approximately 27 wells, located primarily along the east side of the Ranch, west of West Pozo Road. Individual well yields typically range between 200 and 400 gallons per minute (gpm) with some wells capable of rates of up to 1,000 gpm.

Environmental water requirements may limit the use of groundwater to meet the needs of expanded agricultural production and eventual residential development. Trout and Rinconada creeks, which are upper tributaries of the Salinas River, are important spawning habitat for steelhead, a federally declared endangered species. The National Marine Fisheries Service (NMFS) has previously received complaints that the creeks have allegedly been dewatered as a result of vineyard development on Ranch property.

Water Supply – Future: Supplemental water supply options for Santa Margarita Ranch are State Water and Nacimiento water.

Water Quality. TDS concentrations in wells in the area are relatively high. Nitrates have measured concentrations below the maximum contaminant level (MCL) of 45 mg/l. Total coliform, fecal coliform, and Escherichia coli data have been found to be suggestive, although not conclusive, of small impacts on both shallow and deep aquifer wells from local wastewater disposal systems.

County Service Area 23

Source: *2003 CSA 23 Water Master Plan, several County staff memos, County Public Works-compiled consumption data and Planning Department land use projections*

County Service Area 23 (CSA 23) consists of the community of Santa Margarita, an unincorporated community in north-central San Luis Obispo County. Santa Margarita has a population of approximately 1,400 and covers an area of approximately 265 acres. CSA 23 supplies the community with water via groundwater wells located in the center and south-eastern corner of the community. The community is completely reliant on groundwater for its supply. Fire service is included in the system.

Land Use and Service Population. In 2009, the CSA served a total of 525 connections, predominantly residential. Future build-out is estimated to be 619 connections.

Water Demand. Water demand is summarized as follows:

- Average Day Demand (ADD) (2005 – 2009): 164 AFY (0.146 MGD)
- Water Duty Factor (2005 – 2009): 265 gpd/residential meter, 305 gpd/commercial meter
- Build-out ADD (2035): 192 AFY (0.171 MGD.)

Water Supply - Existing. CSA 23 receives its water supply from two wells; Well No.3 and No.4. Well No.3 is a deep, fractured-rock well and Well No.4 is a relatively shallow well that pumps from the alluvial deposits of Santa Margarita Creek. Two other wells, No.1 and No.2, are near No.4, but are not built to current health standards, and can only be used in an emergency with a boil water order.

During periods of low seasonal rainfall, water level in the shallow well typically drops, triggering various voluntary conservation methods. Although the community is better than 85% built out according to the current general plan, there is concern that existing groundwater supplies may not be adequate to supply additional residents and that they are inadequate during periods of less then normal rainfall. There is also the concern that the reliance on essentially a single supply source (groundwater) may be placing the community in a tenuous public health and safety position.

Water Supply – Future: The 2003 Master Plan recommended securing an additional 100 AFY of reliable supply. Based on community input, concerns over cost and need, CSA 23 is currently investigating several options to secure an additional source of water to be used only during a drought or other emergency. These include State Water, Lake Nacimiento water or

additional groundwater wells. Any one of these sources could potentially supply water demand at build-out given the community's support.

Water Quality. CSA 23 has been able to deliver water that meets State Drinking Water Standards, but consumer feedback indicates that the well water that serves the community is hard, stains fixtures and creates challenges in the laundry room. However, a consumer survey in 2004 indicated that less than 30% of the respondents would support procurement of additional water sources to improve the aesthetic quality of the delivered supply.

Atascadero/Templeton WPA 13

Garden Farms Community Water District

Source: *Garden Farms CWD Well logs and 2007 CCR*

The Garden Farms Community Water District (Garden Farms CWD) provides water to consumers in and around the unincorporated community of Garden Farms, located along the old El Camino Real between Santa Margarita and Atascadero. Garden Farms is a small residential community of 240 residents with 113 water service connections. Besides two small commercial establishments, all connections are residential.

Water Demand: Demand has fluctuated between 48 and 93 AFY over the past four years. The service area is fully built out.

Water Supply: Garden Farms CWD draws all of its supply from three wells (though the third well is rarely used) which tap the Atascadero Groundwater Subbasin. The basin is not adjudicated. Water levels have dropped several feet in the past year, likely due to the ongoing drought in the region.

Water Quality: Groundwater quality is typical for the subbasin, with no contaminants exceeding the primary drinking water standards. High levels of manganese (70 ppb reported in 2007) have been detected, but do not currently exceed the secondary drinking water standard of 50 ppb.

Templeton Community Services District

Source: *2005 Templeton CSD Water System Master Plan Update, 2010 Paso Robles Groundwater Basin Water Balance Review and Update*

The Templeton Community Services District (Templeton CSD) supplies its customers with domestic water service, wastewater service, and fire protection, among other services.

Land Use and Service Area Population. Templeton is an unincorporated community located in San Luis Obispo County, California along Highway 101 between the City of Paso Robles and City of Atascadero. Templeton consists of a mix of residential, commercial, agriculture, and recreational areas. The Templeton area has a number of homes on larger lots, and thus exhibits a relatively large per capita water demand as a result. Population projections described below are quoted from the November 2005 Water System Master Plan Update Report. It should be noted that the population projections are based on only those areas served by, and within, the Templeton CSD service area boundary. Thus, there will likely be

discrepancies between these projections and those provided by the County or 2000 Census data.

Existing Population: Existing population (as of November 2005) within the Urban Reserve Line (URL) was based on the residential water connections plus the difference in the URL and the Templeton CSD boundary and the additional residences within the Templeton CSD that use personal on-site wells, resulting in a 2005 service area population of 6,417 persons.

Build-out Population: Based on the 2005 estimated population of 6,417 persons determined by the Templeton CSD's water service connections, plus 2,180 persons from the commercial mixed-use component, and an additional 900 persons from the residential component, the Templeton CSD's estimated build-out population (within its existing service area boundary) is 9,497 persons.

Water Demand. Water demand is summarized as follows:

- 2005 Average Day Demand (ADD): 1,682 AFY (1.50 MGD)
- 2005 Per Capita Demand: 234 gpcd
- Maximum Month Demand: 1.6 times ADD
- Build-out ADD: 2,260 AFY (2.02 MGD.)
- Build-out ADD (2025): 2,239 AFY (1,989 AFY Groundwater and 250 AFY Nacimiento Water)

Water Supply- Exisiting. The Templeton CSD depends on water from eleven wells that extract water from two groundwater sources: the Paso Robles Formation and the Salinas River Underflow. Nine of the eleven wells that extract water from the Paso Robles Formation are extracting from the Atascadero Groundwater Subbasin.

The Templeton CSD currently is permitted to extract 500 AFY from the Salinas River Underflow between October 1 and April 1. There are two wells that tap this aquifer, though only one, the Smith Well, is in service. The Templeton CSD may request from CDPH an extended permit to continue to pump from the river wells through May 15 if sufficient water is available and flowing during that time.

An additional source of water for the Templeton CSD comes from their re-use program with disposal of treated wastewater effluent from the Meadowbrook WWTP percolation ponds. This program allows the Templeton CSD to percolate treated effluent into the groundwater basin/Salinas River underflow and subsequently extract the same amount of water 28 months later. According to the 2005 Water Master Plan, wastewater flow to the Meadowbrook WWTP at that time was 148,000 gpd (165 AFY) with 30 AF being used to irrigate an alfalfa field. Therefore the Templeton CSD at that time had been withdrawing approximately an additional 135 AFY from the Salinas River allocation. Additional water extracted from the remaining two wells on the Salinas River accounted for approximately 649 AFY in 2005.

According to the 2005 Water Master Plan, the Templeton CSD's summer demand at that time was approximately 1,165 AFY. Because the Templeton CSD's available allocations during the summer are 1,710 AF, Templeton CSD was considered to have adequate supply to meet the current 2005 summer demand. Winter 2004/2005 demand for the Templeton CSD was estimated at 715 AF; however winter supply allocation only added up to 566 AF plus minimal water from the Paso Robles GB. Therefore, during the winter months the Templeton CSD was limited on water allocations.

Table 3.10 (Table 4-3 from the 2005 Water Master Plan) summarizes the existing water supply and allocations for Templeton CSD.

Table 3.10. Summary of Existing Water Supplies for Templeton CSD

		Summer Allocation 4/1 – 9/30	Winter Allocation 10/1 – 3/31	Total Allocation
Paso Robles Formation		--	--	1,700/1,550 AFY[1, 2] Safe Yield
Salinas River				
	Templeton CSD Allocation	--	500 AFY	500 AFY
	Riparian Rights	No increase to water supply	No increase to water supply	No increase to water supply
	Greer Riparian Rights	0.26 cfs 94 AF	--	94 AFY
	Re-Use Program	66 AF[3]	66 AF[3]	132 AFY
Total Allocation from all sources				2276 AFY

[1] 1,700 is the Safe Yield for all users of the Templeton Sub-Unit. Private well owners utilize approximately 150 AFY, leaving 1,550 AFY for Templeton CSD

[2] The Templeton CSD can extract water from the Paso Robles Formation any time during the year, however, the Templeton CSD extracts the majority of the water during the summer months when the main river water allocation is not available. The Paso Robles Formation is only used during the winter to help meet peak demands that the Smith Well is unable to meet.

[3] Allocation based on the existing wastewater demand minus the irrigated effluent minus 2 percent water loss.

Water Supply – Future: Future water supply for the Templeton CSD will likely come from the Nacimiento Water Project (NWP), which is currently under construction. The Templeton CSD is under contract to receive 250 AFY from the NWP. Templeton CSD plans to receive raw water from the NWP and percolate this water into the Salinas River underflow, in a similar manner that they percolate effluent from the Meadowbrook WWTP percolation ponds (Selby Pond site). This 250 AFY of percolated NWP water will then be extracted from the Templeton CSD's downstream potable water well field. In addition, the Templeton CSD may be making future provisions to divert additional wastewater flows to the Meadowbrook WWTP (which currently flow to the City of Paso Robles WWTP) in order to recycle additional treated effluent from the Salinas River underflow, increasing available water for extraction by as much as 458 AFY. These future water supply provisions are referenced in the 2005 Water Master Plan, and are included as recommendations for future water supply. In addition, the 2005 Water Master Plan recommended that Templeton CSD consider additional water supply wells (such as the McCoy well) to further enhance their ability to meet summer demand conditions. It is believed that this well has in fact been completed in recent years.

Table 3.11 summarizes future water supply sources for Templeton CSD.

Table 3.11. Future Water Supply Sources for Templeton CSD

Future Water Source	Allocation (AFY)
Nacimiento Water Supply	250
Re-Use Program (Existing Distribution System)	115
Re-Use Program (Future Diversion of WW Flows)	343
McCoy Well	--
Total	708

Water Quality. Based on the 2005 Water Master Plan, and review of current CCRs, the Templeton CSD's water supply to its customers meets all water quality standards. In general, the river wells have lower total dissolved solid levels than the Atascadero Groundwater Basin; however, all of the wells are below the upper limits of the drinking water standard of 1,000 mg/L. The Templeton CSD's overall aggregate TDS quality to its customers, as reported in the 2004 CCR, was 653 mg/L. This is based on how the Templeton CSD distributes and blends the various water supplies to its customers.

Atascadero Mutual Water Company

Source: *2005 Atascadero MWC UMWP and Draft 2009 Master Water Plan*

The Atascadero Mutual Water Company (Atascadero MWC) of San Luis Obispo County is a corporation organized under the laws of California for the purpose of providing water service to property owners, known as the shareholders, within a geographical service area. Atascadero MWC supplies its customers with domestic water service and fire protection.

Land Use and Service Population. The City of Atascadero is a community located in San Luis Obispo County, California along Highway 101 between the City of Paso Robles and City of San Luis Obispo. The City was originally subdivided as a colony in 1914 when the colony boundary was established. Atascadero MWC was established around this time and still retains its original form. The entire water system is the property of Atascadero MWC and is mutually owned by owners of the colony lots. Atascadero was incorporated as a City in 1979. The City of Atascadero now consists of a mix of residential, commercial, agriculture, and recreational areas. Atascadero MWC's service boundary operates within the colony boundary. Within this colony boundary are the Atascadero city limits and some of the unincorporated areas of the community such as the Eagle Ranch Property, the West San Marcos Development, and the area south of Santa Rosa Road known as the Random Oaks area.

Eagle Ranch, a large proposed development on the southwest side of the City, is only partially within Atascadero MWC's service area boundary. Atascadero MWC will serve the existing portion of the development within its boundary and another small portion proposed for inclusion. Adequate water supply for all of Eagle Ranch has yet to be confirmed.

Existing Population: In 2008, the Atascadero MWC served a population of 30,595 with 10,505 service connections.

Build-out Population: The Atascadero MWC projects a 2030 population of 37,436.

Water Demand. Water demand is summarized as follows:

- 2008 Average Day Demand (ADD): 6,565 AFY (5.86 MGD)
- 2008 Per Capita Demand: 192 gpcd

According to Atascadero MWC records and demand forecasts, average annual per capita demand has fluctuated in the range of 188 to 213 over the past decade, with lower water use possibly linked to mandatory conservation measures. It is anticipated that water conservation programs will cause lower per capita demands to become the rule rather than the exception. A per capita demand of 199 gpcd is used to estimate a future peak demand of 7,600 AFY in 2019 with a population of 34,016. Thereafter, conservation measures are predicted to more than compensate for population growth, resulting in a build-out demand of 7,511 AFY in 2030 for a population of 37,436.

- Peak Future ADD: 7,600 AFY (6.79 MGD) based on a population of 34,016 in 2019

Water Supply - Existing**.** The Atascadero MWC's water source is the groundwater found in the Atascadero sub-basin of the Paso Robles Groundwater Basin (PRGB) and underflow of the Salinas River. Water is pumped from 17 active wells with two additional wells on standby status. The PRGB is not currently adjudicated. Atascadero MWC derives approximately 42% of its supply from the PRGB with the remainder coming from the Salinas River underflow. Atascadero MWC has rights to 3,372 AFY from the Salinas River underflow. As the Salinas River underflow is more sensitive to rainfall, during dry years the proportionate withdrawal from the deeper PRGB has increased.

The current water supply system is under stress due to the ongoing drought. During the spring of 2009, the Atascadero MWC issued a stage 2 water shortage condition alert when reserve production capacity fell to less than 10% of the maximum day demand. Stage 2 mandatory conservation measures include a ban on daytime landscape watering, required alternate irrigation schedules, and a prohibition of irrigation runoff.

Water Supply - Future. The Atascadero MWC is a major partner of the Nacimiento Water Project, having contracted for a 2,000 AFY allotment of this future supply. The water will be used to recharge the groundwater table in the vicinity of the deep wells which pump from the Atascadero sub-basin. The water can then be treated in the same manner as the existing source of supply. The Atascadero MWC is also exploring the expansion of its current well fields.

Water Conservation: Atascadero MWC continues to aggressively promote water conservation, as it has since 1993. Atascadero MWC's program has reduced per capita indoor water use and the use of potable water for landscape irrigation. Atascadero MWC provides educational resources on its website, in its offices, and in periodic brochures included with water bills. Atascadero MWC made a further commitment to conservation in 1997, signing an MOU with the California Urban Conservation Council and continues to implement and meet the goals of Best Management Practices for Water Conservation including

- Conservation Rate Structure (i.e. Tier Water Rates)
- Turf conversion rebates
- Lawn aeration rebates

- Sprinkler nozzle replacement rebates
- Irrigation controller rain sensor rebates
- Weather based irrigation controller and soil moisture sensor rebates
- Rainwater harvesting system rebates
- High efficiency clothes washing machine rebates
- High efficiency toilet rebates
- School education programs
- Free seminars on water conserving landscape design and plant selection
- Free landscape/home water surveys
- Annual Water-Conserving Landscape awards

Atascadero MWC is a member of the California Urban Water Conservation Council, Groundwater Guardian Program, Alliance for Water Efficiency, Water Education Foundation, and SLO County Partners in Water Conservation.

Water Quality. Atascadero MWC's water supply to its customers meets all primary and secondary water quality standards.

Salinas/Estrella WPA 14

San Miguel Community Services District

Source: *2002 San Miguel CSD Water Master Plan*

The San Miguel CSD supplies its customers with domestic water service and fire protection, among other services.

Land Use and Service Population. The unincorporated Community of San Miguel is one of 6 urban areas within the County of San Luis Obispo Salinas River Planning Area Plan. According to the 2002 Water Master Plan, the current population within the San Miguel CSD boundary was approximately 1,500 and is expected to increase to 3,742 at build-out (2040) within the existing CSD boundary.

The San Miguel CSD Service Area covers approximately 1,530 acres. The land use zones are Residential Single Family (RSF), Residential Multi-Family (RMF), Residential Suburban (RS), Office/Professional (OP), Commercial Service (CS), Commercial Retail (CR), Recreation (REC), Public Facility (PF), Agriculture (AG), Residential Rural (RR), and Industrial (IND).

Water Demand. Water demand is summarized as follows:

- 2001 Average Day Demand (ADD): 235 AFY (0.21 MGD)
- 2001 Per Capita Demand: 139 gpcd.
- Future ADD at Build-out: 582 AFY (0.52 MGD)
- Maximum Month Demand: 1.5 times ADD

Water Supply. The water supply for the San Miguel CSD is obtained solely from groundwater pumping of the Paso Robles Formation. There are three wells within the CSD; the

two primary wells (Well No. 3 and Well No. 4) are located in the Main Zone. Well No. 5, a smaller well is located in the San Lawrence Terrace (SLT) Zone. The SLT well historically exhibited high nitrate levels and has since been removed from service. However, in 2007, the District replaced Well 5 with a new well in the same location, but installed deeper (approximately 800 feet). After water quality testing confirmed this well met all potable water standards, it was placed in service, but since has experienced occasional high nitrate concentrations and possibly high arsenic concentrations. This new well is temporarily out of service while District further evaluates this well. The two active wells in the main zone combined, historically produced an average of 247 AFY (average for 1999 and 2000), as summarized in Table 3.12 (Table 4 from the 2002 Water Master Plan). The wells have a combined well pumping capacity of 1000 gpm; 600 gpm at Well No. 4 and 400 gpm at Well No. 3.

Table 3.12. Summary of Well Capacity and Production

Well	Capacity[1], gpm	Historical Production[2], AFY	Maximum Production[3], AFY
Well No. 3	400	110	323
Well No. 4	600	137	484
Total	**1000**	**247**	**807**

Notes: 1. Well capacity refers to the maximum pumping rating of the well
2. Historical Production is the average amount of water the wells produced in 1999 and 2000
3. Maximum production is the amount of water the wells could produce if run 12 hours per day 365 days per year

Water Quality. The presence of gross alpha emitters approaching the MCL in the San Miguel water supply is of growing concern. The presence of gross alpha emitters is from naturally occurring decay of Uranium-238 and Thorium-232. The two main zone wells operated by the San Miguel CSD have shown increasing levels of gross alpha particles through the years, although the average is currently below the proposed MCL. Several of these samples indicate gross alpha levels in exceedence of the proposed MCL of 15 pCi/L. Well No. 4 gross alpha levels have an average of about 12 pCi/L as of October 2000; however, there are 5 recorded instances when the proposed MCL was exceeded in the previous 5 years. The uranium levels at Well No. 4 are below the proposed MCL and show a decreasing trend, with an average of about 10 mg/L. Well No. 3 gross alpha levels have an average of about 15 pCi/L as of October 2000; however, the proposed MCL was exceeded 7 times in the previous 8 years. Uranium levels at Well No. 3 show an increasing trend, with an average of about 12 mg/L. All of the uranium results have remained below the proposed MCL of 20 mg/L.

As indicated earlier, the new well on the San Lawrence Terrace, drilled to a depth of approximately 800 feet (screened from approximately 300 feet to 800 feet elevation), has exhibited occasional high nitrate levels and possibly high arsenic levels. Information is very preliminary at this time, and it is unclear if this well will be able to produce potable water without any wellhead treatment.

Camp Roberts

Source: *San Miguel CSD/Camp Roberts Water System Consolidation Study, 2002*

Camp Roberts is operated by the California Army National Guard, and covers approximately 42,784 acres. Camp Roberts, located north of the community of San Miguel, is situated in both San Luis Obispo and Monterey Counties.

Land Use and Service Population. When fully mobilized the base supports 8,500 people. In the event of a nuclear disaster at Diablo Canyon Nuclear Power Plant, Camp Roberts is an evacuation and staging area for about 23,000 residents within San Luis Obispo County. No growth is expected for Camp Roberts; however, based on the above discussion, water demand and temporary service population can vary widely. Base population can be a combination of on-base personnel and civilian personnel that do not live on Base.

Water Demand. For Camp Roberts, the existing ADD was determined to be 0.17 mgd, based on a review of water production records for the year 2001. Current 2008/2009 water demand was not readily available at the time of this memorandum; however, updated information will be provided if available.

- 2001 Average Day Demand (ADD): 190 AFY (0.17 MGD)
- 2001 Per Capita Demand: Unknown
- Future ADD at Build-out: 190 AFY (0.17 MGD)
- Maximum Month Demand: 1.4 times ADD

Water Supply. Camp Roberts water supply is from groundwater pumping, with three active wells. Combined well capacity is 947 AFY (based on pumping 12 hours per day, 365 days per yeaer). Pumping rates range from 225 to 500 gpm per well.

Water Quality. TDS and arsenic levels in the groundwater are marginal. According to 2001 reports, Base water supply TDS is 900 mg/L. Also, the arsenic levels in 2001 were noted to be 9.6 ug/L, just below the MCL of 10 ug/L.

City of Paso Robles

Source: *2005 City of Paso Robles UWMP and correspondence from Christopher Alakel*

The City of Paso Robles is located in northern San Luis Obispo County (North County), on the eastern, inland side of the Santa Lucia Mountains. Paso Robles is situated on the upper Salinas River, which flows north toward Monterey County. Incorporated in 1889, the City of El Paso de Robles (Paso Robles) now encompasses a total area of 11,985 acres on both sides of the Salinas River. Other communities in the vicinity of Paso Robles include Templeton, the City of Atascadero, Santa Margarita, and San Miguel. The City also is situated on the western margin of the Paso Robles Groundwater Basin, which is the water-bearing portion of the upper Salinas River drainage area.

Land Use and Service Population. The first major commercial activity in the North County was cattle grazing, followed by development of almond groves and most recently, extensive planting of vineyards. In addition to its agricultural base, Paso Robles also has a long history as a resort, based primarily on development of the local hot springs. Paso Robles remains the major service center for ranching and agriculture in the North County, particularly areas to the east along Highway 46. The City proper is a mix of residential, commercial and industrial land uses, with significant areas devoted to parks and open space. Paso Robles, with

a 2005 population of 27,361, is a growing community that could attain a population of 44,000 at build-out.

Existing (2005) Connections are summarized as follows:

- Single Family Residential: 8,100
- Multi-Family Residential: 1,600
- Commercial: 632
- Industrial 63
- Parks, Landscape, etc. 325
- TOTAL 10,720

Build-out Connections are summarized as follows:

- Single Family Residential: 13,400
- Multi-Family Residential: 9,300
- Commercial: 2,146
- Industrial 214
- Parks, Landscape, etc. 500
- TOTAL 25,560

Water Demand. Current demand is based on actual consumption while build-out is based on water duty factors summarized as follows:

- 2007 Average Day Demand (ADD): 8,126 AFY (7.26 MGD)
- 2005 gross water use: 220 gpcd
- 2005 Water Duty Factors:
  - Single family residential: 0.5 AFY (446 gpd/meter)
  - Multi-family residential: 0.4 AFY (357 gpd/meter)
  - Commercial/industrial: 1.5 AFY (1338 gpd/meter)
  - Irrigation/other 2.6 AFY (2319 gpd/meter)

- Build-out ADD (2025): 13,500 AFY (12.05 MGD)

Water Supply. The City of Paso Robles has historically relied upon local water supplies from the Salinas River underflow and from the Paso Robles Formation (PRF) for its municipal water supply.

Salinas River underflow refers to shallow subterranean flows in direct connection with the Salinas River. This underflow is subject to appropriative water rights and permitting by the State Water Resources Control Board (SWRCB). An approved SWRCB application allows the City to extract up to eight cfs (3,590 gpm) with a maximum extraction of 4,600 AFY (January 1 to December 31).

The deeper PRF currently contributes 2,856 AFY to City supply. The City plans to maintain this extraction rate in the future.

The City participates in the Paso Robles Groundwater Basin Agreement with San Luis Obispo County Flood Control and Water Conservation District (District), CSA 16 – Shandon, San Miguel CSD and approximately 20 landowners, who have organized as the Paso Robles

Imperiled Overlying Rights (PRIOR) group. Key elements of the Agreement are a clear acknowledgement that the PRGWB is not in overdraft now, and that the parties will not take court action to establish any priority of groundwater rights over another party as long as the Agreement is in effect. In addition, the parties agree to participate in a meaningful way in groundwater management activities, and to develop a plan for monitoring groundwater conditions in the PRGWB.

Water Supply – Future: To assure its water supply into the future, the City will purchase water from the Nacimiento Water Project, which is projected to deliver 4,000 AFY of raw water. The City is progressing with its plans for a water treatment plant; the City's Capital Improvement Program includes design of the water treatment plant beginning in 2007, construction starting in 2009, and startup of the plant in 2010 to coincide with first availability of Nacimiento water. The City will have the option of increasing its allotment of Nacimiento water to 8,000 as demand increases.

Another supply alternative being pursued by the City is the use of recycled wastewater. The City owns its own wastewater treatment plant which currently provides secondary treatment. Several alternatives have been studied to upgrade treatment to the tertiary level, and it is assumed that one of these alternatives will eventually be pursued. 5,000 AFY of wastewater could ultimately be treated, but 944 AFY would only be needed to meet build-out demand. This margin of safety serves as a backup source in case of limitations on any of the other sources of supply.

Water Conservation: The City has implemented a number of permanent mandatory water conservation measures that are in force throughout the water service area. They include mandatory recycling or recirculation of water for car washes, cooling systems, and decorative fountains and several other practices designed to curb water waste.

The City has targeted landscape irrigation as the water use practice with the highest potential for water conservation. Educational resources are available on the City website, in City offices, and in periodic brochures included with water bills. The City also sponsors a school education program that includes water conservation as a key component.

The City is a member of Partners in Water Conservation.

Water Quality. In general, City water quality is good, but has relatively high TDS and hardness. In response to the hardness, many residents use home water softeners. However, use of water softeners results in addition of salts to the City's wastewater, which is treated and discharged to the groundwater basin and/or Salinas River. This is one factor in locally increasing TDS and chloride in groundwater. This situation may be improved in the future with the introduction of Lake Nacimiento water into the City's potable water supply. Lake Nacimiento water is lower in hardness and TDS than groundwater, and reduces the need for water softeners.

With regard to regional groundwater quality, the Estrella subarea of the Paso Robles Groundwater Basin, which includes most of the City, is characterized locally by increasing TDS, chloride and nitrate concentrations. These adverse water quality trends are unlikely to affect City water supply in the near future, given that groundwater currently provided by the City meets all drinking water standards and the increases in TDS, chloride and nitrate are localized. Nonetheless, salt loading to the groundwater basin is an important long-term concern. Recognizing that City wastewater disposal is one source of salt loading, the City has made the

reduction of salt loading one of their water resource goals. Major means to reduce salt in City wastewater include planned use of high-quality Lake Nacimiento supply, reduced use of home water softeners, strategic use of wells with lower salt concentrations, and implementation of an industrial waste discharge ordinance.

County Service Area 16 (Shandon)

Source: *2004 CSA 16 Water Master Plan, plus written updates provided by Jay Johnson, County of San Luis Obispo.*

County Service Area No.16 (CSA 16) was formed in 1972 to furnish potable water to customers in the Shandon area. Narrative and data are based on the 2004 Water System Master Plan.

Land Use and Service Population. CSA 16 provides water service to 284 residential customers, 11 public authorities, and one business. The Urban Reserve Line encompasses areas outside of the existing service boundary, so the future size and composition of the customer base will likely change. Within the existing community of Shandon, build-out service is expected to reach up to 547 service connections. However, the Shandon Community Plan is being updated that could result in a total of 2,200 residential connections and over 50 commercial and public authority service connections. The projected population is approximately 8,125. The Community Plan Update is expected to be completed by the end of calendar year, 2010.

Water Demand. Water demand is summarized as follows:

- 2004 Average Day Demand (ADD): 147 AFY (0.131 MGD)
- Build-out ADD : 271 AFY (0.242 MGD) (excludes pending Community Plan Update; Build-out of the Community Plan would result in an ADD of 1,100 AFY (1.0 MGD)

Water Supply. The current source of supply for the community of Shandon is groundwater from the Paso Robles Basin. Two wells provide all the current needs of the community and the groundwater supply is deemed sufficient to meet water needs at build-out in the current service area. Additional well(s) and storage will be needed to meet peak demand requirements for build-out.

CSA 16 has no supplemental water source, but does have an allocation of 100 AFY from the State Water Project. Because of the high cost to develop this supply and the lack of need at the time, in 1995, the Board of Supervisors approved offering their 100 AFY allocation for sale to other entities in the County. Since that time, only 15 AF of the 100 AFY has been secured via a transfer option agreement. This agreement expired in 2009 without the transfer taken.

Water Quality. The water in Shandon meets all Federal and State drinking water requirements and overall can be considered very good water. However, Shandon's water is considered to be hard, with an average concentration of 190 parts per million. Non-salt generating systems are recommended for individuals who want to use a water softener.

Cholame WPA 15

The Cholame WPA has no large water purveyors. Water usage in this WPA is analyzed as overlying use.

Nacimiento WPA 16:

Oak Shores (Nacimiento Water Company)

The community of Oak Shores, on the banks of Nacimiento Lake, is served by the Nacimiento Water Company (NWC), a public utility with offices in Bradley. NWC currently serves a population of 275 residents with water drawn from the lake which is then treated prior to distribution.

Plans to develop an additional 345 lots as part of Oak Shores Estates are currently on hold.

The water supply allocation for Oak Shores is part of the 1,750 AFY reserved for SLO County residents in the Lake Nacimiento area.

Heritage Ranch Community Services District

Source: *2008 Heritage Ranch Water Master Plan with updates*

The Heritage Ranch Community Services District (Heritage Ranch CSD) was formed in 1990 to oversee water and sewer services for the Heritage Ranch community. It supplies its customers with domestic water service and fire protection, among other services.

Land Use and Service Area Population. Heritage Ranch is an unincorporated community located in San Luis Obispo County, California on the east side of Lake Nacimiento, approximately 15 miles northwest of the City of Paso Robles. Land use at Heritage Ranch consists mostly of residential, recreational, and open space areas with some commercial and public facility areas including a small commercial parcel, fire station, public school, recreational complex, marina, campground, wilderness park, ballpark, church, equestrian center, and storage area for boats and trailers. A community that was originally started as a remote vacation destination with the vast majority of the residents only part-time has now become a bedroom community to neighboring cities with the vast majority of the residents full-time.

Existing Population: As of September 2010, the Heritage Ranch CSD services approximately 1,778 water customers. Based on a density of 2.0 persons per household, this equates to an existing population of approximately 3,556 persons.

Build-out Population: The Adopted Specific Plan for the Heritage Ranch CSD, prepared in 1972 and revised in 1980, limited the total number of developable units to 4,000. In 2004, the maximum number of developable units was revised a second time to its current maximum value of 2,900 units. Residential units within the Heritage Ranch CSD consist of a combination of several housing tracts, custom homes, condominiums, mobile homes, and recreational trailers. Based on the average household size of 2.0 persons per household, it is anticipated that the Heritage Ranch CSD's total build-out population will reach 5,800 persons.

Water Demand. Water demand is summarized as follows:

- 2007 Average Day Demand (ADD): 618.5 AFY (0.552 MGD)
- 2007 Per Capita Demand: 158 gpcd
- 2010 Average Day Demand (ADD): 553 AFY (0.493 MGD)
- 2010 Per Capita Demand: 139 gpcd
- Future ADD: 903 AFY (0.81 MGD)

Water Supply - Existing: The Heritage Ranch CSD only has one water supply source, the Gallery Well, which is fed via three horizontal wells located in the Nacimiento River bed just downstream of the Nacimiento Dam. Typically, the Nacimiento River is fed year-round by the release of water through the upper and/or lower outlet works in the dam at Lake Nacimiento. The release of the water is monitored and controlled by Monterey County Water Resources Agency until the water level of the Lake drops below 687 feet, at which time San Luis Obispo County may obtain control over the lake releases. The water is primarily released to sustain habitat in the river, provide water to farmers in the Salinas Valley, and halt salt water intrusion into the Salinas Valley, in addition to providing a water supply source to the Heritage Ranch CSD. If no water is released from the lake, which has rarely occurred in the past 50 years, the Heritage Ranch CSD will not have a water supply. Even though the water level of Lake Nacimiento has never dropped below the dam outlet, it has come close. The last time this occurred was in October of 1989 where the lake level diminished to within 2 feet above the lower outlet works.

The 1,100 AFY of allocation of Nacimiento Reservoir water designated for use in Heritage Ranch's service area is part of the 1,750 AFY reserved for SLO County residents in the Lake Nacimiento area. It is sufficient to provide water for build-out demand, but the configuration of the delivery system leaves the Heritage Ranch CSD vulnerable to a cut off of its water supply in an extreme drought.

Water Supply - Future: Alternative sources are under consideration, including taking water directly from the lake and connecting to the Nacimiento Pipeline. A possible tie-in with Camp Roberts was explored, but is now considered as not being a feasible option due to the reluctance of Camp Roberts to consider any emergency water supply options.

Water Conservation: Water demands over the last 3 years have decreased due to an increase in water rates and implementation of water conservation programs such as for toilet retrofits and turf conversion.

Water Quality. While the Heritage Ranch CSD's water supply to its customers has historically met all primary water quality standards, it currently exceeds the limits for Disinfection Byproducts (DBP). The treatment plant has been ineffective in removing sufficient natural organic matter to prevent the formation of DBP. The District Board hired a water treatment process engineering consultant and received a report with recommendations on new treatment equipment to better control DBP in September 2010. New equipment/processes include addition of treatment chemicals (Potassium Permanganate and Powdered Activated Carbon) and a new sedimentation basin to prevent the formation of DBP. This equipment/process will also prevent iron and manganese formation in the distribution system. The District applied for $400,000 in State funding to complete these improvements. The project should be bid out, constructed and operational in 2011.

COUNTY-WIDE WATER QUALITY

Water quality varies greatly from agency to agency, within groundwater basins and sub-basins, from each imported or reservoir water supply. Although they vary greatly, they are all required to meet the same primary and secondary drinking water standards established by the California Department of Public Health. As part of the overall review of water quality throughout the County, Table 3.13 summarizes mineral quality (TDS), nitrates, and hardness as it relates to their ability to meet state drinking water standards. The table includes specific remarks relative to individual water quality issues with each purveyor.

Table 3.13 – Summary of County-Wide Water Quality

Sub-Region	WPA	Water Users/ Generators/Sources	Water Quality			Water Supply[a]	Remarks
			TDS, mg/L	Nitrates, mg/L	Hardness, mg/L		
North Coast	San Simeon WPA 1	San Simeon CSD	380	6.9	300	GW	Recharge from Little Pico Creek
		Overlying Users					
	Cambria WPA 2	Cambria CSD	440	1.8	328	GW	
		Overlying Users					
	Cayucos WPA 3	Morro Rock Mutual	See CSA 10A below			SW[b]	
		Paso Robles Beach	See CSA 10A below			SW[b]	
		CSA 10A	370	ND	260	SW[b]	0.34% provided by CAWO well in 2008. Contribution to water quality considered negligible
		Overlying Users					
	Morro Bay WPA 4	City of Morro Bay	357	2.3	120	ST, DS	Brackish water desalination on standby. 85% of City's water supply provided by State Water in 2008.
			598	37.3	522	GW	GW well nitrate levels exceed MCL. 15% of City's water supply provided by well water in 2008.
		CMC	389	2.3	280	SW[f]	CMC supplies water to County Ops/Office of Education, Cuesta College, and Camp SLO.
		County (Ops, Golf Course, Schools)	See CMC above			SW[f]	Dairy Creek Golf Course irrigated with tertiary recycled water from CMC WWTP
		Cuesta College	See CMC above			SW[f]	
		Camp SLO	See CMC above			SW[g]	
		Overlying Users					

Sub-Region	WPA	Water Users/ Generators/Sources	Water Quality			Water Supply[a]	Remarks
			TDS, mg/L	Nitrates, mg/L	Hardness, mg/L		
North Coast (cont.)	Los Osos WPA 5	Golden State Water	450	15	197	GW	Potential seawater intrusion impacts to lower .aquifer; upper aquifer nitrate contamination due to septic tanks, see discussion on Interlocutory Stipulated Judgment (ISJ)
		S&T Mutual				GW	
		Los Osos CSD	511	7.8	227	GW	
		Overlying Uses					
South Coast	San Luis Obispo/ Avila WPA 6	City of San Luis Obispo	380	4.8	No Data	SW[c,d], GW	Extensive tertiary recycled program serving area golf courses, schools and parks can provide up to 1,000 AFY for irrigation. Minimum 1.16mgd daily discharge provided for preservation of environmental habitat in San Luis Obispo Creek. Less than 2% of potable water supply provided by local wells.
		County Airport				SW[c,d], GW	Served by City of San Luis Obispo.
		Cal Poly				SW[c,d], GW	Whale Rock allocation treated by City WTP, and served to Campus.
		San Miguelito MWC				GW, ST	
		CSA 12				ST, SW[e]	
		Avila Valley MWC				ST, SW[e]	
		Port San Luis	See Avila Beach CSD below			ST	
		Avila Beach CSD	357	2.3	120	ST	
		Overlying Users					
	South Coast WPA 7	City of Pismo Beach	450	ND	330	SW[e]	
			357	2.3	120	ST	
			430	ND	290	Delivered	
			710, 820	5.3, ND	50, 450	GW	Well #5, #23 respectively

Sub-Region	WPA	Water Users/ Generators/Sources	Water Quality			Water Supply[a]	Remarks
			TDS, mg/L	Nitrates, mg/L	Hardness, mg/L		
South Coast (cont.)	South Coast WPA 7	City of Arroyo Grande	460	ND	360	SW[e]	Agency is considering seawater desalination or recycled water program to augment future water supply.
			273	ND	101	ST	
			553	23.4	366	GW	
		Oceano CSD	366	ND	230	SW[e], ST	Groundwater selenium levels are high in two wells; blending is used to ensure compliance with MCL.
			680	9	510	GW	
		City of Grover Beach	430	No Data	290	SW[e], ST	Agency is considering seawater desalination or recycled water program to augment future water supply.
			428	11.2	260	GW	
		Halcyon				GW	
		SLO County Dept. of Public Works Lopez Project 2008 Water Quality Report	450	No Data	330	SW	
			430	No Data	290	Combined SW + ST	
		Overlying Users	650	17	490	GW	1995-2000 median values for 25 wells. Nitrate MCL exceeded in 6 of the wells.
		Edna Road/Golden State Water Co.	690	8.8	430	GW	
		PXP				GW	
		Pismo Valley Overlying Users	620	ND	356	GW	1999 median values for 6 wells. TDS MCL exceeded in one of the wells.
		AG Valley Overlying Users	600	4.2	430	GW	1981-87 median values for 5 wells. Nitrate MCL exceeded in 1 well and TDS MCL exceeded in one other well.
South	South Coast WPA 7 (cont.)	SLO Co portion of Santa Maria Valley Overlying Users	1200	3	480	GW	1992-1998 median values of 4 wells in SLO County portion of Santa Maria Valley (2 wells have 11 separate piezometers). TDS MDL exceeded at 3 of the wells. Hardness data from

Sub-Region	WPA	Water Users/ Generators/Sources	Water Quality			Water Supply[a]	Remarks
			TDS, mg/L	Nitrates, mg/L	Hardness, mg/L		
Coast (cont.)							most recent available test (1980s).
	South Coast WPA 7 (cont.)	Nipomo CSD	581	7.6	310	GW	Currently in design of inter-tie pipeline to convey potable water from City of Santa Maria to Nipomo CSD.
		Golden State Water Co.	451	16	213	GW	
		Rural Water Company				GW	
		Woodlands	393	10.5	303	GW	Three GW wells on-site provide supply.
		Conoco Phillips				GW	
		Overlying Users	500	10	220	GW	1990-2000 median values for 35 wells.
	Huasna WPA 8	Overlying Users					Private well data not published for public use.
	Cuyama WPA 9	Cuyama CSD				GW	
		Overlying Users					Private well data not published for public use.
Inland	Carrizo Plain WPA 10	Overlying Users					
	Rafael/ Big Spring WPA 11	Overlying Users					
	Santa Margarita WPA 12	Santa Margarita Ranch				GW	Not in use; allocated for future residential development
		CSA 23	360, 390	ND, 7.5	160, 290	GW	Well #3, #4 respectively
	Atascadero/ Templeton WPA 13	Garden Farms					
		Atascadero Mutual Water Company	665	6.9	346	GW, SW[b]	Nacimiento water will be percolated into the local groundwater and extracted for use, starting 2010.
Inland (cont.)	Atascadero/ Templeton WPA 13	Templeton CSD	755	9.7	455	GW, SW[b]	Percolated wastewater effluent from Meadowbrook WWTP to underflow of Salinas River is “reclaimed” by downstream potable water supply wells. Nacimiento water will be

Sub-Region	WPA	Water Users/ Generators/Sources	Water Quality			Water Supply[a]	Remarks
			TDS, mg/L	Nitrates, mg/L	Hardness, mg/L		
	(cont.)						percolated into the local groundwater and extracted for use, starting 2010.
			530-930	ND-42	150-610	Paso GW Basin	Data from 2005 Master Plan (2003/04 CCR).
			490-510	3-5	330-368	Salinas River Underflow	
		Overlying Users					
	Salinas/Estrella WPA 14	City of Paso Robles	518	6.5	253 (14.8 grains/gal)	GW, SW[b]	The City expects to incorporate Nacimiento water into its water supply beginning Year 2010.
		San Miguel CSD	580	4.3	280	GW	Both main Zone wells have concerns with rising levels of Radionuclides. San Lawrence Terrace well (east of Salinas River) may have possible high nitrate and arsenic levels.
		CSA 16	405	16	90	GW	
		Camp Roberts					
		Overlying Users					
	Cholame WPA 15	Overlying Users					
	Nacimiento WPA 16	Oak Shores					
		Heritage Ranch CSD	180	0.9	140	SW	Water taken from Nacimiento River 3000 ft downstream of the lake
		Overlying Users					

[a]ST=State Water; GW=Groundwater; SW=surface/lake water; DS=brackish or seawater desalination; NA=not applicable; ND=non-detected
[b]Whale Rock reservoir
[c]Future water supply will include Nacimiento Water Project water
[d]Surface water supply includes Whale Rock and Santa Margarita reservoirs
[e]Surface water supply includes Lopez/Zone 3 water
[f]Surface water supply includes Whale Rock Reservoir, State Water and Chorro Reservoir
[g]Surface water supply allocation is from Chorro Reservoir only; however, combined surface waters delivered include Whale Rock, State Water and Chorro Reservoir.