Exhibit D

Chapter 3

WATER SUPPLY

The UWMPA requires that the UWMP include a description of the agency's existing and future water supply sources for the next 25 years. This section includes an overview of the City's supplies along with projections of usage of each source of supply followed by a detailed discussion on each supply source. This detailed discussion includes information on imported water supplies, recycled water supplies, groundwater supply facilities, and the groundwater basin such as water rights, determination of whether the basin is in overdraft, and other information from the groundwater management plan, which can be found in Appendix C.

> *10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:*
>
> *10631 (b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a) [to 20 years or as far as data is available]. If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information shall be included in the plan:*
>
> *10631 (b) (1) A copy of any groundwater management plan adopted by the urban water supplier…*
>
> *10631 (b) (2) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater. For those basins for which a court or board has adjudicated the rights to pump groundwater…For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted…*
>
> *10631 (b) (3) A detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic records.*
>
> *10631 (b) (4) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonable available, including, but not limited to, historic use records.*

3.1 SUPPLY OVERVIEW

The City's water system supplies water from two sources, groundwater and imported water. The City pumps groundwater from the Fox Canyon Aquifer. The City's imported water supplier is Calleguas Municipal Water District (CMWD), a member of the Metropolitan Water District of Southern California (MWDSC). MWDSC's imported water originates from the Colorado River Aqueduct and the State Water Project (SWP); however, the City's imported supply from MWDSC has historically been from the SWP due to its location in the MWDSC supply system.

Total demands for the City from 2005 to 2009 averaged 9,863 acre-feet per year (afy). In 2009, 4,019 afy came from groundwater sources (i.e., Fox Canyon Aquifer) and 5,586 afy from imported water supplies (i.e., MWDSC's SWP supply via CMWD). Figure 3.1 shows the breakdown in deliveries in 2009.

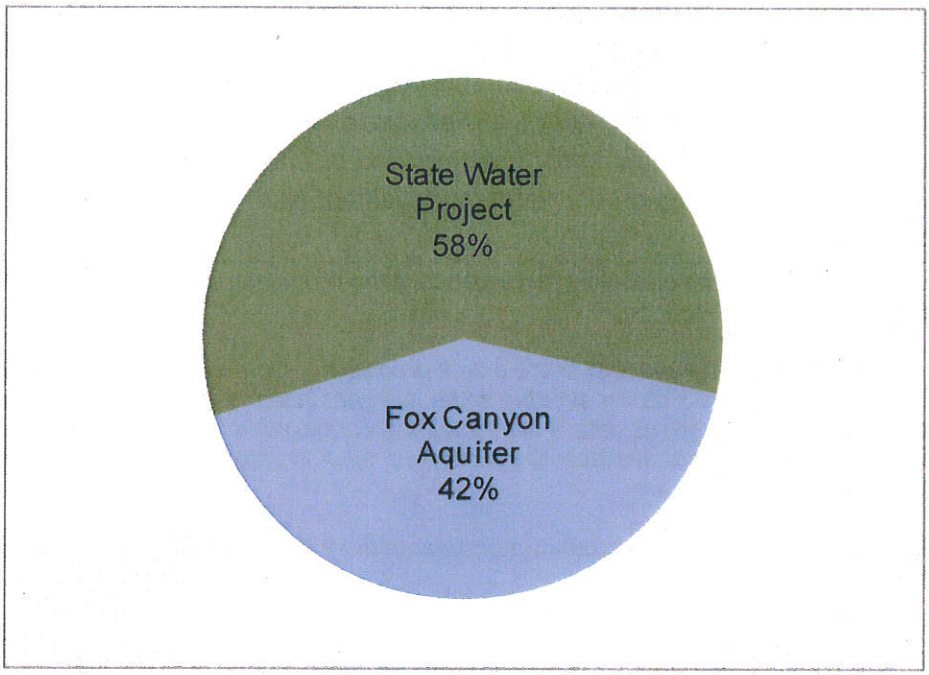

Figure 3.1 City Water Supplies for 2009

Between 1995 and 2009, the City's local groundwater supply, on average, met about 39 percent of the overall demand with the remaining 61 percent met by imported water. These numbers vary from year to year depending upon weather conditions, groundwater recharge rates, and groundwater blending requirements due to groundwater quality. Future demand projections assume that the City will continue to pump similar volumes of groundwater as the past five years until the completion of the Camarillo Regional Groundwater Desalter (Desalter). With the construction of the Desalter, the City's allocation will increase and the City will use groundwater to satisfy the most of its annual demand. Groundwater pumping is currently kept below the City's current Fox Canyon Groundwater Management Agency (FCGMA) groundwater allocation of 4,279 afy. The anticipated sources of water supply through the planning horizon of 2035 are shown in Table 3.1.

clay lenses preclude any significant groundwater movement from one aquifer to the next. The City's water service area lies almost entirely in the Pleasant Valley Basin, but there are also several separate groundwater basins in the area, separated by a series of faults or folds, which also reduce groundwater movement from one basin to another. Groundwater in the region generally flows southwest.

The Pleasant Valley Basin historically has been replenished by subsurface inflows from the Oxnard Plain Basin, East and West Las Posas Basins, and the Santa Rosa Basin. Subsurface inflow over the past several years has been limited to only the Oxnard Plain and the East Las Posas Basins. Over pumping in the other basins has lowered water tables and prevented subsurface inflows into the Pleasant Valley Basin.

Most of the groundwater within the basin is contained within alluvial deposits and within the Fox Canyon and Grimes Canyon aquifers. The Fox Canyon Aquifer is the major water bearing unit in the Pleasant Valley Basin. The upper strata of the basin are alluvial deposits, which average 400 feet in thickness and consist of water bearing sands and gravels separated by clay lenses. The Fox Canyon aquifer is within the bottom of the San Pedro formation, which underlies the alluvial deposits. It varies in thickness from 400 feet to 1,500 feet and is effectively sealed from percolation of water from above by impervious materials located at the bottom of the alluvial deposits. Beneath the San Pedro formation lies the Santa Barbara formation containing the Grimes Canyon aquifer.

3.5.1 Groundwater Quality

The lower part of the area's aquifer system is generally considered to contain the better quality water with total dissolved solids (TDS) as low as 250 mg/L, although in some areas the TDS levels are in excess of 2,000 mg/L. TDS concentrations in excess of 1,000 mg/L are not uncommon in the upper aquifer system. The large number of well operators and continued pumping has created a severe overdraft of the Fox Canyon Aquifer. Saline intrusion from the coast and salinity associated with low groundwater levels are the primary water quality concern in the Pleasant Valley basin. Low groundwater levels extend from underneath the City to the ocean.

Other regional groundwater quality issues involve high TDS and occasionally high nitrate concentrations. Seawater intrusion has long been a concern and was the issue that precipitated the creation of the FCGMA. The intrusion occurs exclusively along the coastline in the Oxnard Plain and Pleasant Valley Basins.

Chloride as a particular constituent of concern in the East and South Las Posas basins, recently affecting the City's wells (CMWD, 2011). High nitrate concentrations in the groundwater is a problem localized in the Oxnard Plain and Forebay basins. Drinking water wells in the impacted areas are often affected during and following dry periods. The primary sources of nitrate are septic systems and agricultural fertilizer. To address the problem, septic systems are now prohibited in the Oxnard Plain Forebay and BMPs are being implemented to limit agricultural contributions (BV, 2010).

3.5.2 Groundwater Levels and Historical Trends

Historically, it was assumed that the lower aquifer system of the Pleasant Valley Basin was confined and received little overall recharge across the fault that extends from the Camarillo Hills to Port Hueneme. However, since the early 1990s, water levels began to rise in the northern adjacent basins. The City has two existing wells in the northeast portion of the Pleasant Valley Basin and these wells confirm that rising water levels in the northern adjacent basins directly impact recharge rates, water quality, and water levels in the Pleasant Valley Basin area. Recharge in the area may be the result of uplift and folding of lower aquifer units that allow rapid stream flow percolation.

Exhibit E

Chapter 3: Water Resources

The City's current water supply consists of imported surface water from CMWD, local groundwater from UWCD, and local groundwater from City wells. The City blends water from these three sources to achieve an appropriate balance between water quality, quantity, reliability, and cost.

From 2006 to 2010 the blend ratio of imported surface water and groundwater (either from UWCD or City wells) has varied between 1:1 and 1:2. Each of these sources is described in the following chapters.

Table 3-1 summarizes the City's current and projected water supplies through 2035.

TABLE 3-1
SUMMARY OF CURRENT AND PROJECTED WATER SUPPLIES (AF)

Water Supply Sources	2010[a]	2015	2020	2025	2030	2035
Existing Supplies:						
Imported Water - Calleguas Municipal Water District	11,277	17,379	17,379	17,379	17,379	17,379
Groundwater - United Water Conservation District[b]	10,852	9,800	7,800	7,800	7,800	7,800
Groundwater - City-produced[c]	7,442	10,782	9,782	9,782	9,782	9,082
Brine Loss[d]	(1,254)	(1,490)	(1,641)	(1,700)	(1,755)	(1,810)
Subtotal Existing Supplies	**28,317**	**36,471**	**33,320**	**33,261**	**33,206**	**32,451**
Planned Supplies						
Future City Groundwater[e]	0	527	1,789	2,269	2,269	2,269
Future City Groundwater[f]	0	5,200	11,400	8,500	8,500	8,500
Recycled Water[g]	0	1,800	2,600	5,500	5,500	5,500
Subtotal Planned Supplies	**0**	**7,527**	**15,789**	**16,269**	**16,269**	**16,269**
Total Estimated Supplies	**28,317**	**43,998**	**49,109**	**49,530**	**49,475**	**48,720**

Notes:
(a) 2010 supplies represent actual consumption, not a limitation in water supply.
(b) City's sub-allocation held by UWCD plus the additional allocation resulting from the M&I Supplemental Water Program.
(c) City's historical and baseline allocation (9,082 AF) plus additional credits resulting from the City's participation in the Ferro Pit Program and credits transferred to the City from PHWA as a result of the Three Party Agreement. The City also has FCGMA credits available as a supply source if needed.
(d) Brine loss is assumed to be 20% of permeate production from desalting operations. Assumes that the City will continue its 2010 blend ratio of groundwater, desalted groundwater, and imported water to maintain product water quality between 600 to 700 TDS.
(e) Future City groundwater allocations transferred to the City as agricultural lands are developed.
(f) Future City groundwater allocations made available to the City as agricultural users abandon or reduce the use of their wells in exchange for recycled water and/or as a result of groundwater recharge.
(g) GREAT Program recycled water sold to City water customers for municipal and industrial uses, including landscape irrigation.

3.1 Wholesale (Imported) Water Supplies

To provide for long-range improvement of its water quality, the City annexed to CMWD in February 1961. CMWD is a member agency of MWDSC. MWDSC is the State Water Contractor from which CMWD purchases SWP supplies.

3.1.2 Imported Water: CMWD

The SWP water purchased by CMWD is filtered and disinfected at MWDSC's Joseph Jensen Filtration Facility in Granada Hills. CMWD receives the treated water from MWDSC via the West Valley Feeder and either stores the treated water in Lake Bard to be treated before distribution or feeds the water directly to the Springville Reservoir near Camarillo. The water supply projections detailed in CMWD's 2010 UWMP (May 2011) are based on MWDSC's SWP projections, along with anticipated local supplies.

3.1.3 Imported Water: The City

The City receives SWP water from CMWD's Springville Reservoir through the City's Oxnard and Del Norte Conduits that feed five of the City's six water blending stations.

In 2010, the City purchased approximately 11,277 AF of water from CMWD. Of this amount, approximately 841 AF was distributed directly to PHWA. PHWA is responsible for providing water to the City of Port Hueneme, NBVC and the CIBCSD. The 11,277 AF also includes approximately 1,950 AFY for P&G, a private user that receives unblended water directly from CMWD through an agreement with the City.

Existing agreements between the City and CMWD do not guarantee the quantity of water the City may purchase. The City has a current MWDSC Tier 1 entitlement of 17,379.4 AFY. Tier 1 water corresponds to the amount "contracted for" by the City. It is in essence a capacity reservation and includes the water being delivered to PHWA. MWDSC Tier 2 water is normally available to the City of Oxnard; however, the cost per acre-foot is higher. There is less availability and reliability of Tier 2 water in periods of drought.

The Tier 1 entitlement of 17,379.4 AFY includes:

- P&G: 2,300 AFY
- "Reservation" for PHWA: The City has an agreement whereby if water from United Water Conservation District's Oxnard-Hueneme Pipeline is not available, then the City will make water available from its system. The 2010 sub-allocation is 3,467 AFY. This is 75 percent of the base, which is 4,623.33 AFY. For purposes of water supply discussion, it is being considered as a reservation from the Calleguas allocation, although the likelihood of the O-H system not being able to deliver water is relatively remote.

3.2 Groundwater

This section presents information about the City's groundwater supplies, including a description of the groundwater basin, and a review of historical, current, and projected conditions.

3.2.1 Groundwater Basin Description

The groundwater sources of supply for the City of Oxnard are groundwater from UWCD and groundwater from the City's own wells, drawn from two basins referred to locally as the Oxnard Forebay Groundwater Basin and the Oxnard Plain Groundwater Basin. The Oxnard Forebay Groundwater Basin and the Oxnard Plain Groundwater Basin are both located in the Oxnard Subbasin of the Santa Clara River Valley Groundwater Basin (Groundwater Basin Number

D. Groundwater Desalination Facility. The additional groundwater that would be made available to the City from groundwater credits transferred from agricultural users and pumped by City wells from the poor quality Oxnard Aquifer would require additional treatment prior to delivery to the City's distribution system. The GREAT Desalter constructed in 2007/2008 does not increase the total water supply. It does, however, allow full utilization of the City's groundwater resources.

E. Concentrate Collection System. The AWPF and the GREAT Desalter produce a high TDS by-product concentrate as a result of the treatment process. Discharging this concentrate to the sewer system could eventually cause treatment problems at the OWWTP. Therefore, the GREAT Program proposes a concentrate collection system separate from the sanitary sewer system. The collection system could also potentially serve other industrial customers whose wastewater product is suitable for disposal without further treatment and meets the requirements of the OWWTP's National Pollution Discharge Elimination System (NPDES) permit.

F. Concentrate Disposal/Wetlands Development and Enhancement. Two concentrate disposal points were identified in the GREAT Program report – the existing ocean outfall from the OWWTP and wetlands in the Ormond Beach area that have been identified for potential restoration and enhancement. A third option is disposal via the CMWD Salinity Management Pipeline and ocean outfall.

G. Overall Yield of the GREAT Program. The GREAT Program is projected to produce 6.25 MGD (7,000 AFY) of recycled water in the initial phase and up to approximately 25 MGD (28,000 AFY) ultimately, with full build-out of the City General Plan areas.

Since the 2005 UWMP, the following activities have occurred:

A. Construction of the GREAT Desalter. The GREAT Desalter was constructed in 2007/2008 and began operation in 2009. The GREAT Desalter includes low pressure reverse osmosis units with 7.5 MGD capacity. A 0.6-million gallon permeate storage tank was also constructed to support the GREAT Desalter operation. Three newer wells (Well Nos. 32, 33, and 34) currently pump water from the poor quality Oxnard Aquifer and feed the Desalter.

B. Construction of the Advanced Water Purification Facility. Construction of the AWPF began in 2010 and is expected to be completed in 2012. The AWPF receives secondary treated effluent from the OWWTP and treats it with microfiltration, reverse osmosis, and ultraviolet disinfection. The initial capacity of the AWPF is 6.25 MGD of recycled water.

C. Construction of the Recycled Water Backbone System. The Recycled Water Backbone System is also currently under construction and is expected to be complete at the same time as the AWPF. The RWBS will initially serve recycled water from the AWPF to municipal and industrial customers within the City's service area.

3.7 Desalinated Water

The California UWMP Act requires a discussion of potential opportunities for use of desalinated water (Water Code Section 10631[i]). The City currently operates the GREAT Desalter, which utilizes reverse osmosis to treat brackish groundwater. The product water is blended with

untreated groundwater to balance water quality and cost and the concentrate is discharged to the sewer system. The GREAT Desalter has a production capacity of 7.5 MGD and is expandable to 15.0 MGD. The City may expand the GREAT Desalter in the future, or construct a similar desalter facility at Blending Station No. 3 if it becomes cost-effective to do so.

The City does not have any plans to implement a seawater desalination program. However, the City could provide financial assistance to MWDSC, other SWP contractors, or their member agencies in the construction of their seawater desalination facilities in exchange for SWP supplies.

The City has been following existing and proposed seawater desalination projects along California's coast. Table 3-7 provides a summary of the status of several of California's municipal/domestic seawater desalination facilities.

As shown Table 3-7, most of the existing and proposed seawater desalination facilities are or would be operated by agencies that are not SWP contractors. However, in these cases as described above, an exchange for imported water deliveries would most likely involve a third party (MWDSC or another SWP contractor), CMWD and the City.

TABLE 3-7
EXISTING AND PROPOSED SEAWATER DESALINATION FACILITIES ALONG THE SOUTHERN CALIFORNIA COAST

Project	Member Agency Service Area	AFY	Status
Long Beach Seawater Desalination Project	Long Beach Water Department	10,000	Pilot study
South Orange Coastal Ocean Desalination Project	Municipal Water District of Orange County	16,000 - 28,000	Pilot study
Carlsbad Seawater Desalination Project	San Diego County Water Authority	56,000	Permitting
West Basin Seawater Desalination Project	West Basin Municipal Water District	20,000	Pilot study
Huntington Beach Seawater Desalination Project	Municipal Water District of Orange County	56,000	Permitting
Camp Pendleton Seawater Desalination Project	San Diego County Water Authority	56,000 to 168,000	Planning
Rosarito Beach Seawater Desalination Feasibility Study	San Diego County Water Authority	28,000 to 56,000	Feasibility study
	Total AFY	**102,000 - 280,000**	

Source: MWDSC 2010 Regional UWMP.

Exhibit F

RESOLUTION NO. 1816

A RESOLUTION OF THE BOARD OF DIRECTORS
OF CALLEGUAS MUNICIPAL WATER DISTRICT
CALLING FOR ENHANCED WATER USE EFFICIENCY
EFFORTS TO CONSERVE AND EXTEND
REGIONAL WATER RESERVES

WHEREAS, Calleguas Municipal Water District (Calleguas) is responsible for providing a reliable supply of high quality, supplemental water to the communities of southern Ventura County, for which this supply comprises 70% of Calleguas purveyors' combined water demand; and

WHEREAS, Calleguas is entirely reliant upon deliveries of water imported by the Metropolitan Water District of Southern California from the California State Water Project (SWP); and

WHEREAS, the State of California experienced its driest year on record in 2013, is now in its third consecutive year of drought, and in each year of the current drought, annual precipitation levels were inadequate to fill the state's key reservoirs, and

WHEREAS, on November 20, 2013, the California Department of Water Resources (DWR) announced an initial allocation of 5 percent of requested deliveries to SWP contractors in calendar year 2014 -- a historic low; and

WHEREAS, the National Weather Service's most recent *Three-Month Outlook* for California forecasts above normal temperatures and below normal precipitation throughout the entire state; and

WHEREAS, on January 17, 2014, California Governor Edmund G. Brown, Jr. officially proclaimed a State of Emergency to exist due to drought conditions and has called on Californians to reduce their water usage and directed state officials to take all necessary actions to alleviate drought impacts throughout the state; and

WHEREAS, on January 31, 2014, upon determining that the northern Sierra snowpack was 6 percent of average, the lowest level since record-keeping began in 1960, DWR announced a reduction in the SWP annual allocation from five percent to zero, an unprecedented action; and

WHEREAS, following the severe 1987-92 drought, southern California water agencies aggressively developed and implemented a variety of programs designed to buffer against the social and economic impacts of water shortages due to drought; and

WHEREAS, Over the past 20 years, southern California rate payers have invested more than $5 billion in regional storage, infrastructure improvements, and water conservation programs that are now serving to sustain supplies during this historic dry period; and

WHEREAS, Metropolitan has indicated that its water storage reserves dedicated to meeting regional drought demands remain relatively high at nearly 2.4 million acre feet and, as such, it does not intend to institute mandatory water delivery reductions within its service area in 2014, and

WHEREAS, nonetheless, the current extreme statewide drought condition serves to underscore the long-standing inadequacy of the existing Sacramento-San Joaquin Delta water conveyance system, which resulted in the loss of an estimated 900,000 acre feet to state and federal water contractors in 2013, as well as the need for additional storage facilities and enhanced conservation measures to maintain reliable supplies during prolonged water shortages.

NOW, THEREFORE, IT IS HEREBY RESOLVED that the Board of Directors of Calleguas Municipal Water District encourages water users within its service area to remain mindful of their water use and implement feasible water use efficiency measures in an effort to extend stored water supplies and minimize effects associated with a prolonged drought condition.

BE IT FURTHER RESOLVED that we urge Governor Brown, the Obama administration, members of congress, state legislators, and local elected officials and policymakers to support the Bay Delta Conservation Plan process and other state and regional initiatives necessary to improve water reliability for current and future Californians.

ADOPTED, SIGNED AND APPROVED this fifth day of February, 2014.

Scott H. Quady, President
Board of Directors

I HEREBY CERTIFY that the foregoing Resolution was adopted at a regular meeting of the Board of Directors of Calleguas Municipal Water District held on February 5, 2014.

ATTEST:

Andy Waters, Secretary
Board of Directors

(SEAL)