2010 Urban Water Management Plan

THE CITY OF PLEASANTON

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1. PLAN PREPARATION

1.1 INTRODUCTION

This 2010 Urban Water Management Plan (UWMP) has been prepared in accordance with the California Urban Water Management Planning Act (UWMP Act), (California Water Code § 10610 et seq.), and the Water Conservation Bill of 2009. The UWMP Act requires every urban water supplier in California providing water for municipal purposes either directly or indirectly to more than 3,000 customers, or supplies more than 3,000 acre-feet of water annually (AFA) to submit and adopt an UWMP. The urban water supplier must then update and adopt the UWMP every five years, on or before December 31, in years ending in zero or five. A six-month extension for submission of the 2010 UWMP was allowed to provide urban water suppliers additional time to address the new SBX7-7 requirements.

In 2009, the City of Pleasanton (also referred to as Pleasanton or City in this document) supplied 17,500 acre-feet annually (AFA) of potable water to approximately 21,400 customers in the City of Pleasanton and approximately 250 customers along Kilkare Road just north of the town of Sunol in unincorporated Alameda County, California. Therefore the City of Pleasanton is subject to the requirements of the UWMP Act. The City of Pleasanton prepared and adopted its first UWMP in 2002.

Assembly Bill 797 established the UWMP Act in 1983. The latest version of the UWMP Act, which contains the current requirements for the UWMP, followed by the Water Conservation Bill of 2009, are provided in Appendix A and B, respectively. A checklist indicating the location of each required UWMP element is provided in Appendix C to support the review of this UWMP.

1.2 AGENCY COORDINATION

1.2.1 Plan Preparation

The City of Pleasanton coordinates with its water wholesaler, Zone 7 Water Agency (referred to as Zone 7; member agency for Alameda County which the City is located within), to ensure that a safe and reliable water supply is delivered to its existing customers and that plans for serving future customers are implemented as efficiently as possible. Additionally, San Francisco Public Utilities Commission supplies water to the unincorporated Castlewood area within Pleasanton, and the town of Sunol adjacent to Pleasanton. To ensure that these agencies were informed of the current and future water supply issues facing the City of Pleasanton, the agencies were informed in February of 2011 of the City's plan to prepare and adopt this 2010 UWMP via mailed letter (see Appendix D).

Following adoption of the 2010 UWMP the City will submit to the Department of Water Resources, the above-mentioned agencies, including Alameda County and the California State Library, a copy of the plan within no later than 30 days.

Additionally, the three other tri-valley water retailers (Dublin San Ramon Services District, City of Livermore, and California Water Service Company (Cal Water); referred to collectively as the Retailers) were also provided notice of the City's plan to prepare and adopt this 2010 UWMP in February of 2011 via mailed letter.

Pleasanton worked closely with Zone 7 in the development of the City's 2010 Urban Water Management Plan. City of Pleasanton staff drafted the majority of this 2010 UWMP. On December 21, 2010, Pleasanton authorized Zone 7 to assist in the development of this Plan. The information contained herein is based on data obtained from City of Pleasanton staff and Zone 7.

Table 1.1 details Pleasanton's agency coordination, along with contact of various local groups to encourage plan involvement, and indicates participation.

Table 1.1. Agency Coordination and Local Group Involvement

Coordinating Agencies	Participated in Plan Development	Provided Comment to the draft	Attended Public Meetings	Contacted for Assistance	Will be sent Copy of Draft Plan	Sent a notice of Intention to Adopt	Not Involved
Zone 7	x			x	x	x	
Alameda County					x	x (through Zone 7)	
San Francisco Public Utilities Commission					x	x	
City of Livermore						x	
DSRSD						x	
Cal Water						x	
Local Organizations							
Economic Vitality Committee				x			
Hacienda Business Park				x			
Pleasanton Chamber of Commerce				x			
Pleasanton Downtown Association				x			

1.2.2 Public Involvement

The City of Pleasanton encourages public participation when adopting plans such as the Urban Water Management Plan. Therefore, the City of Pleasanton sought public input in the development of this UWMP. A specific location on Pleasanton's website was utilized to communicate UWMP status. The City released an official press release, dated April 14, 2011, notifying media of the City's intent to update the UWMP, and encouraged public involvement by being informed of the UWMP development process. Various local groups within the service area were directly contacted and notified of the City's UWMP development and were encouraged to participate in the process (see Table 1-1). The Draft 2010 UWMP was available for public review on the website from May 2 to June 8, 2011. A subsequent posting on Pleasanton's website home page was made to announce the Draft release.

A public hearing was held on Wednesday, June 8, 2011 to discuss the details of the 2010 UWMP, including the City's water use reduction plan to achieve the City's 2020 Target (see Section 3), and receive public comments. A Notice of Public Hearing and Adoption was issued twice, May 25 and June 1, 2011. The notice was published through local newspapers, as well as posted on the City's website.

Copies of the above mentioned outreach documents are located in Appendix D. Comments received on the Draft 2010 UWMP during the public review period are located in Appendix E.

1.3 PLAN ADOPTION, SUBMITTAL, AND IMPLEMENTATION

The City of Pleasanton has taken (or will take) all of the required steps in adopting and submitting this 2010 UWMP as indicated below:

- A copy of the adoption resolution by Pleasanton City Council is attached in Appendix F.
- The City of Pleasanton will provide copies of the final adopted 2010 UWMP to the Department of Water Resources, the California State Library, San Francisco Public Utilities Commission, and Alameda County within 30 days of adoption by City Council.
- This 2010 UWMP will be available for public review no later than 30 days after submission to DWR.

Implementation of the 2010 UWMP will include its use as a training tool with various internal City departments, use as a planning tool when evaluating relevant fees (such as connection fees or rate analysis), and will assist in the selection of a future regional water supply options. Additionally, the 2010 UWMP will be utilized in the development of the City's future Drought Contingency Plan.

2. SYSTEM DESCRIPTION

2.1 PLEASANTON'S HISTORY

Pleasanton's inception can be traced back to the 1850's as a stagecoach stop along the main route to the gold fields. In the twentieth century it grew into a thriving agricultural center with the production of grain, hay, and hops. The City of Pleasanton was incorporated in 1894 and is located in southeastern Alameda County at the junction of I-580 and I-680, approximately 22 square miles. Water service is currently provided to all City residents and commercial customers, as well as approximately 250 customers in unincorporated Alameda County along Kilkare Canyon Road just north of the town of Sunol.

Water supplies for the Pleasanton area were first developed in the late 1800's. In 1898, the Spring Valley Water Company constructed artesian water wells at the Bernal Well Field in Pleasanton. The Pleasanton Township County Water District was formed in 1914 for the purpose of negotiating with Spring Valley for water supplies. In 1956, the City of Pleasanton took over the retail distribution of water from the Pleasanton Township Water District. It was in 1972 that the City took over the remaining functions of the Pleasanton Township Water District.

To solve problems of flooding, drainage, channel erosion, water supply and conservation, the Alameda County Flood Control and Water Conservation District (ACFCWCD) was created in 1949 by the California State Legislature through the passage of Act 205 of the California Uncodified Water Code. The southeastern portion of Alameda County, including Pleasanton, falls within Zone 7 of the ACFCWCD.

To alleviate problems of groundwater overdraft, Zone 7 entered into a water supply contract with the State of California Department of Water Resources in 1961. In 1962, Zone 7 began to import water from the State Water Project through the South Bay Aqueduct.

The City of Pleasanton and Zone 7 entered into an agreement for a treated water supply in 1968. Included in that agreement are provisions that the City may pump from City-owned wells up to 3,500 acre-feet per year without incurring a groundwater replenishment fee. An additional clause within the agreement allows the City to maintain a carryover of 700 acre-feet of unused well quota from year to year without accruing a fee. The majority of Pleasanton's water has been supplied by Zone 7 since 1968, and is expected to continue indefinitely into the future.

2.2 SERVICE AREA

2.2.1 Physical Description

The City of Pleasanton's water service area is located about 40 miles southeast of San Francisco, and encompasses an area of approximately 22 square miles. Pleasanton's service area lies within the Alameda Creek watershed, a drainage basin covering about 675 square miles between Mount Hamilton and Mount Diablo. Figure 2-1 illustrates the location of the City of Pleasanton's service area.

The City of Pleasanton lays predominately on flat land formed by alluvial deposits from prehistoric streams flowing through the Livermore, Amador, and San Ramon Valleys to the San Francisco Bay.

Geologic activity in the area has resulted in varying deposits of sand and gravel in the northeastern portion of the City, and once supported the cultivation of crops and livestock. Modernly, Pleasanton has predominately been urbanized, with the exception of several vineyards at the eastern edge of the city and livestock grazing on Pleasanton Ridge and in the Southeastern Hills.

The majority of Pleasanton occupies the Valley floor, which ranges in elevation from approximately 320 to 400 feet. Pleasanton is enclosed by hills on the west and southeast. The Pleasanton and Main Ridges to the west rise sharply above Foothill Road to peaks of 1,500 feet. These two ridges remain seismically active and feature complex terrain, densely wooded vegetation, and landslide prone soils. A series of gentle to steeply sloping hills extend south from Pleasanton into a valley containing the San Antonio Reservoir.

2.2.2 Climate

The City of Pleasanton's climate is characteristically Mediterranean; hot, dry summers and cool, moist winters. Table 2-1 summarizes several important climate parameters as they have occurred in the Pleasanton service area from October 2004 to October of 2010; these include average evapotranspiration (ETo), temperature, and rainfall. As shown in Table 2-3, the average annual precipitation is approximately 17.33 inches of water, while the total evapotranspiration is approximately 49.76 inches of water, and average monthly temperatures vary from 46 to 70 degrees Fahrenheit throughout the year.

Table 2-1. Climate Data for the City of Pleasanton's Service Area

Weather Parameter	Month												Total
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
ETo (inches of water)[a][b]	1.38	1.82	3.70	4.64	6.12	6.89	7.44	6.51	4.86	3.25	1.83	1.34	49.76
Average Temperature (°F)[b]	46.38	50.27	52.98	55.13	60.95	65.92	70.10	68.62	66.12	59.35	52.57	46.70	--
Average Rainfall (inches of water)[b]	3.43	2.54	2.75	1.59	0.53	0.02	0.00	0.04	0.01	1.56	1.08	3.78	17.33

[a] ETo = evapotranspiration based on standard grass as reference.
[b] Data collected from CIMIS Station 191 from October 2004 to September 2010: www.cimis.water.ca.gov.

2.3 SERVICE AREA POPULATION AND DEMOGRAPHICS

Pleasanton's population has experienced relatively rapid growth since the 1980s. Census data from the American Community Survey Data estimate's Pleasanton's population in 1980 was 35,160. By 2000 this number grew by 81 percent to 63,654. As of 2010, the City of Pleasanton supports a residential population of 69,300, and 55,770 jobs within its corporate limits. By 2030 Pleasanton's population is projected to grow by another 19 percent to 82,300; with employment projected to grow 33 percent to 74,320 jobs. Employment within the City largely falls under commercial business; there is low development, and subsequent employment, in the industrial sector. Figure 2-2 shows the historical, current, and projected population within the City of Pleasanton from 1991 to 2030. The City's current and projected populations are also presented in Table 2-2.

When Pleasanton's 2002 Urban Water Management Plan was adopted, City ordinance limited annual housing growth to 350 units, and specified a residential cap of 29,000 housing units within the Pleasanton Planning Area. In August of 2010 following a court order, this cap was subsequently removed to accommodate additional future high-density housing developments within Pleasanton.

Figure 2-1. Location of the City of Pleasanton's Distribution System

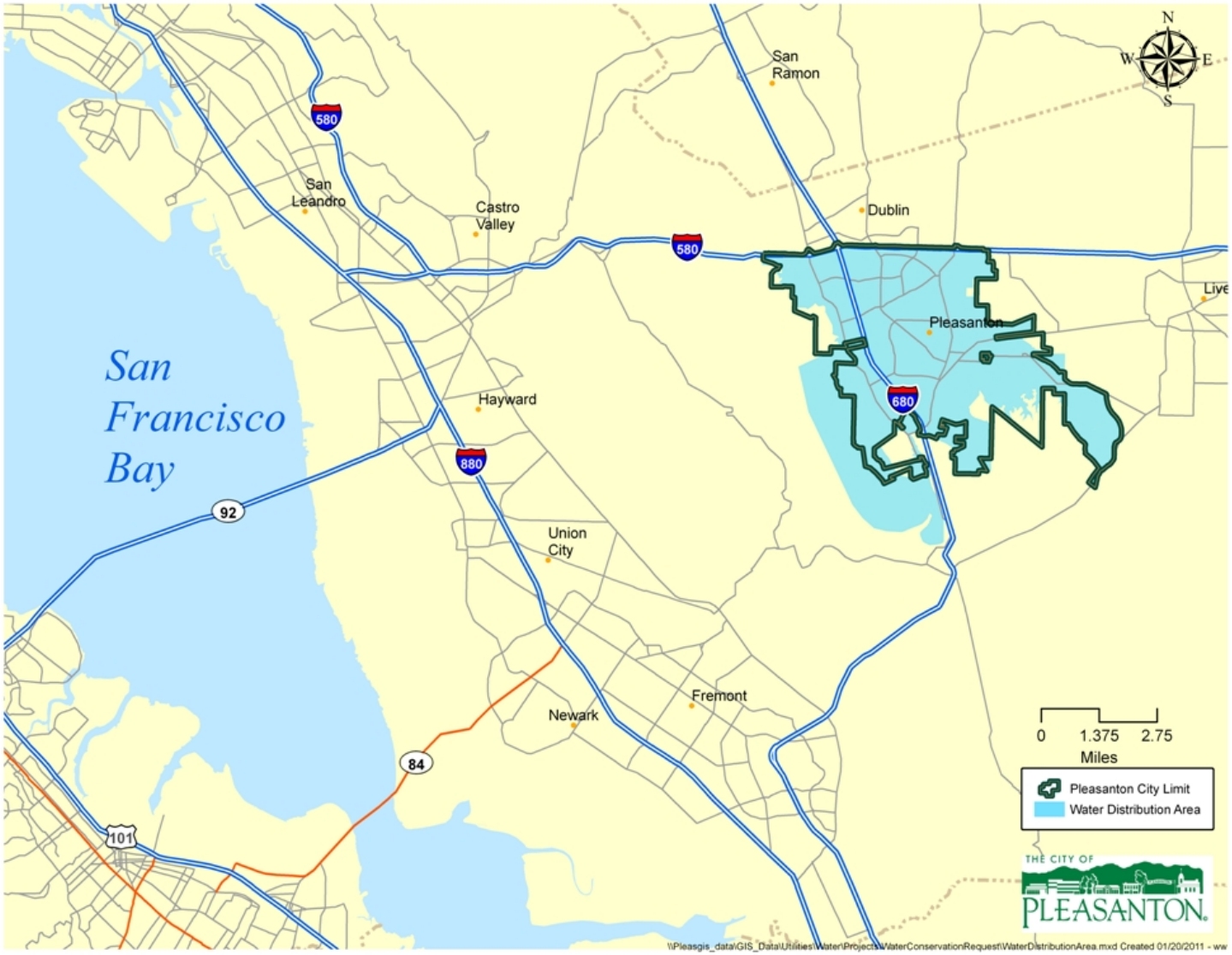
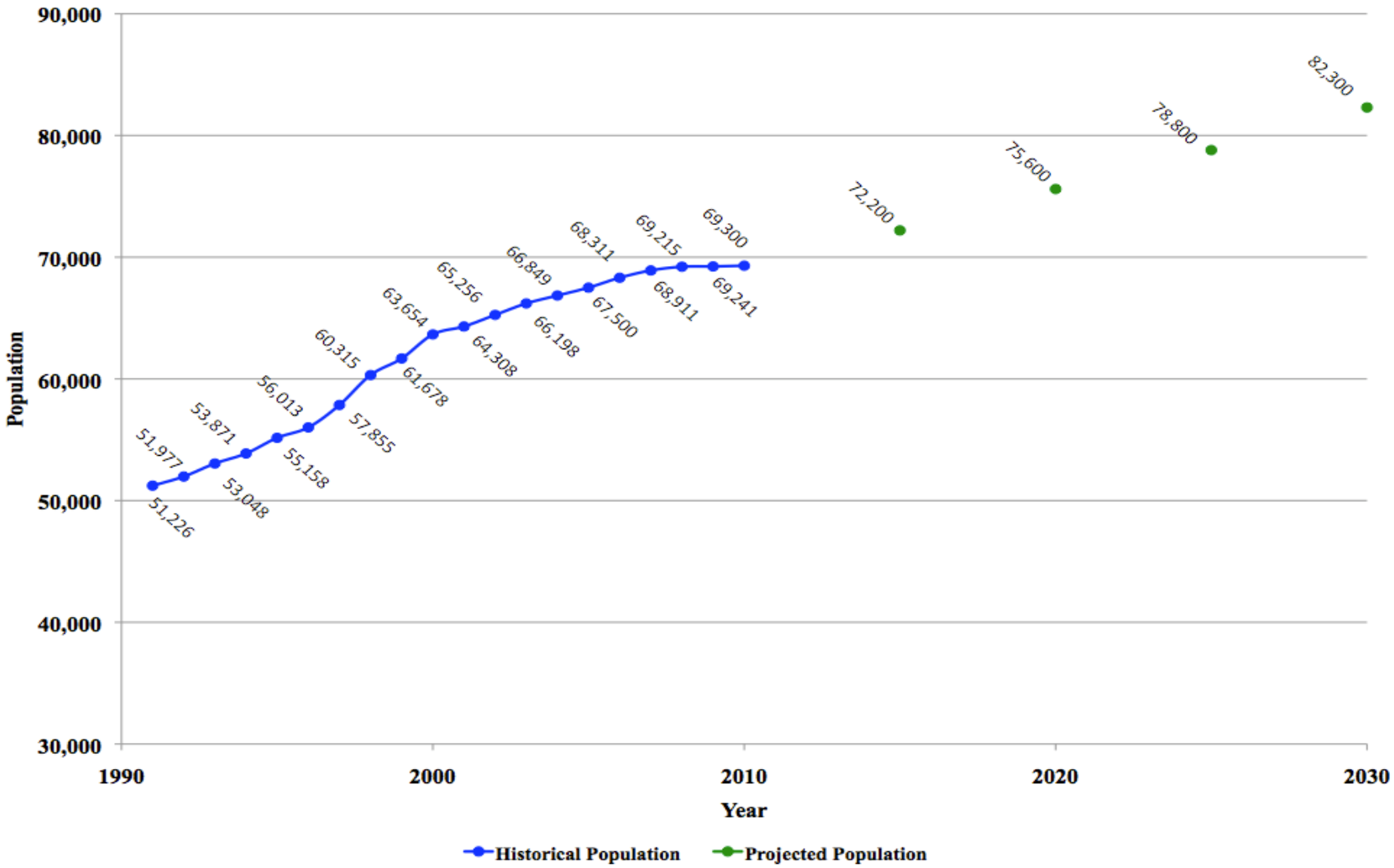


Figure 2-2. Historical and Projected Population within Pleasanton's Service Area[(a)]



[(a)] Source: Estimates 1991-1999: Department of Finance, *Report E-4 Historical City, County, and State Population Estimates, 1991-2000, with 1990 and 2000 Census Counts Official State Estimates*. Estimates 2000 and later: Association of Bay Area Governments, November 2009, *Building Momentum: Projections and Priorities 2009*. (See Section 3.2.3 for explanation of duel population sources)

The single-family residential sector is the largest water customer sector in Pleasanton (86.6% of all connections, see Section 3.1.1). The removal of the housing cap will result in an increase in the multi-family residential sector within the scope of this 2010 UWMP. The City of Pleasanton is not considered a disadvantaged community.

The population estimates in this document are for the urban water supplier, the City of Pleasanton. Table 2-2 shows the current and projected population estimates for Pleasanton. GIS analysis indicates that 77% of the City of Pleasanton's actual distribution area overlaps with City boundaries. However, the number of connections that fall within the distribution area outside of City boundaries are a small portion of the total number of connections. Hence, population estimates published by the Association of Bay Area Governments (ABAG) were used to base Pleasanton's population estimates from 2000 to 2030. ABAG uses estimates from the California Department of Finance to tabulate these estimates. Therefore, historical population estimates from 1991 to 1999 were taken from the California Department of Finance since ABAG does not supply these estimates within their publication, *Building Momentum: Projections and Priorities 2009.*

Table 2-2. Current and Projected Population within the City of Pleasanton's Service Area[(a)]

	Year				
	2010 (Current)	**2015**	**2020**	**2025**	**2030**
Pleasanton Population	69,300	72,200	75,600	78,800	82,300

[(a)] Source: Association of Bay Area Governments, November 2009, *Building Momentum: Projections and Priorities 2009.*

2.4 DESCRIPTION OF PLEASANTON'S PHYSICAL WATER SUPPLY SYSTEM

2.4.1 Water Supply Overview

The City of Pleasanton purchases approximately 80% of its water from Zone 7. The remaining 20% is produced from 3 groundwater wells that are owned and operated by the City of Pleasanton. The water from the wells is treated with chlorine, ammonia and fluoride at the well sites prior to entering into the water distribution system.

Zone 7 supplies both treated surface water and treated ground water to the City of Pleasanton. Water from Zone 7 enters the City of Pleasanton's water system at seven different turnout locations, as follows: Turnout 1 is located on Santa Rita Road near Stoneridge Drive, Turnout 2 is located on Hopyard Road near Valley Trails Drive, Turnout 3 is located at the east end of West Las Positas Blvd near Gulfstream Street, Turnout 4 is located on Hopyard Road at Stoneridge Drive, Turnout 5 is located on Bernal Avenue at Nevada Street, Turnout 6 is located on Machado Drive at Vineyard Avenue and Turnout 7 is located on Vineyard Avenue at Ruby Hills Blvd.

Turnouts 1, 2, 3, 4 and 5 are equipped with fluoridation facilities, which fluoridate the water provided by Zone 7 prior to entering the City of Pleasanton system. Turnouts 6 and 7 supply water directly to water pump stations that pump into the City of Pleasanton water system. Both of these pump stations are equipped with fluoridation facilities, which fluoridate the water prior to it entering the distribution system. All wells and turnouts are shown on Figure 2-3.

2.4.2 Water Distribution

The City of Pleasanton service area consists of all of Pleasanton as well as Pleasanton Ridge and Kilkare Canyon in Sunol. The distribution system currently consists of 306 miles of pipelines and approximately 22,000 water service connections. There are 14 pump stations, 22 water storage reservoirs and 1 hydropnuematic tank in the distribution system. There are 14 different pressure zones within the City of Pleasanton service area. All pump stations and storage reservoirs are shown on Figure 2-4.

2.4.3 Emergency Interties

City of Pleasanton currently has two existing pipeline interties with DSRSD for rapid emergency response. There are plans for a third intertie with the City of Livermore that will be installed with the Staples Ranch development located in east Pleasanton near I-580 at El Charro Road. These interties are strictly for emergency conditions, such as a major pipeline break, supply contamination or interruption of deliveries due to earthquake, flood, or other disaster. The locations of the existing interties are also shown on Figure 2-4.

Figure 2-3. City of Pleasanton Wells and Turnouts

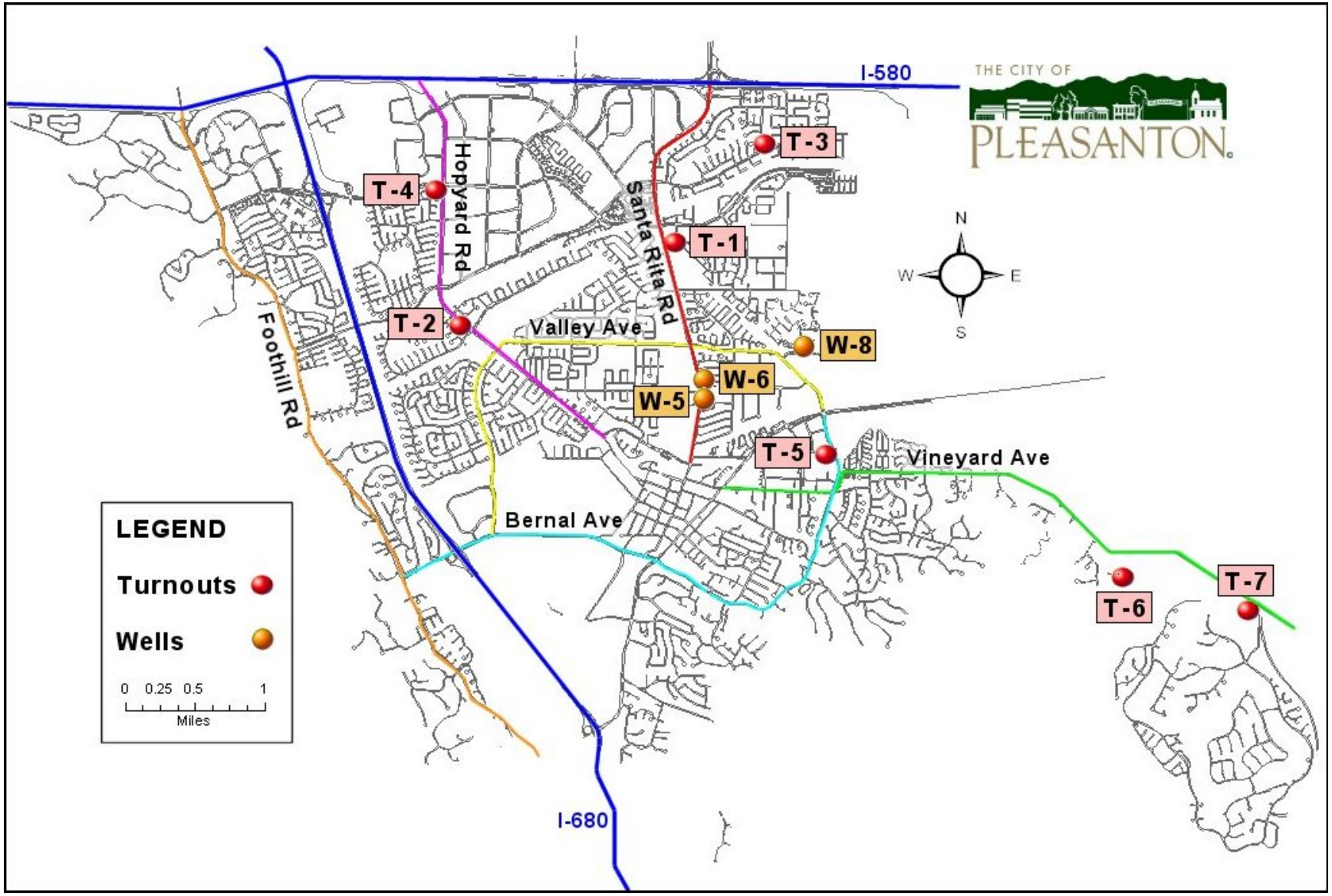
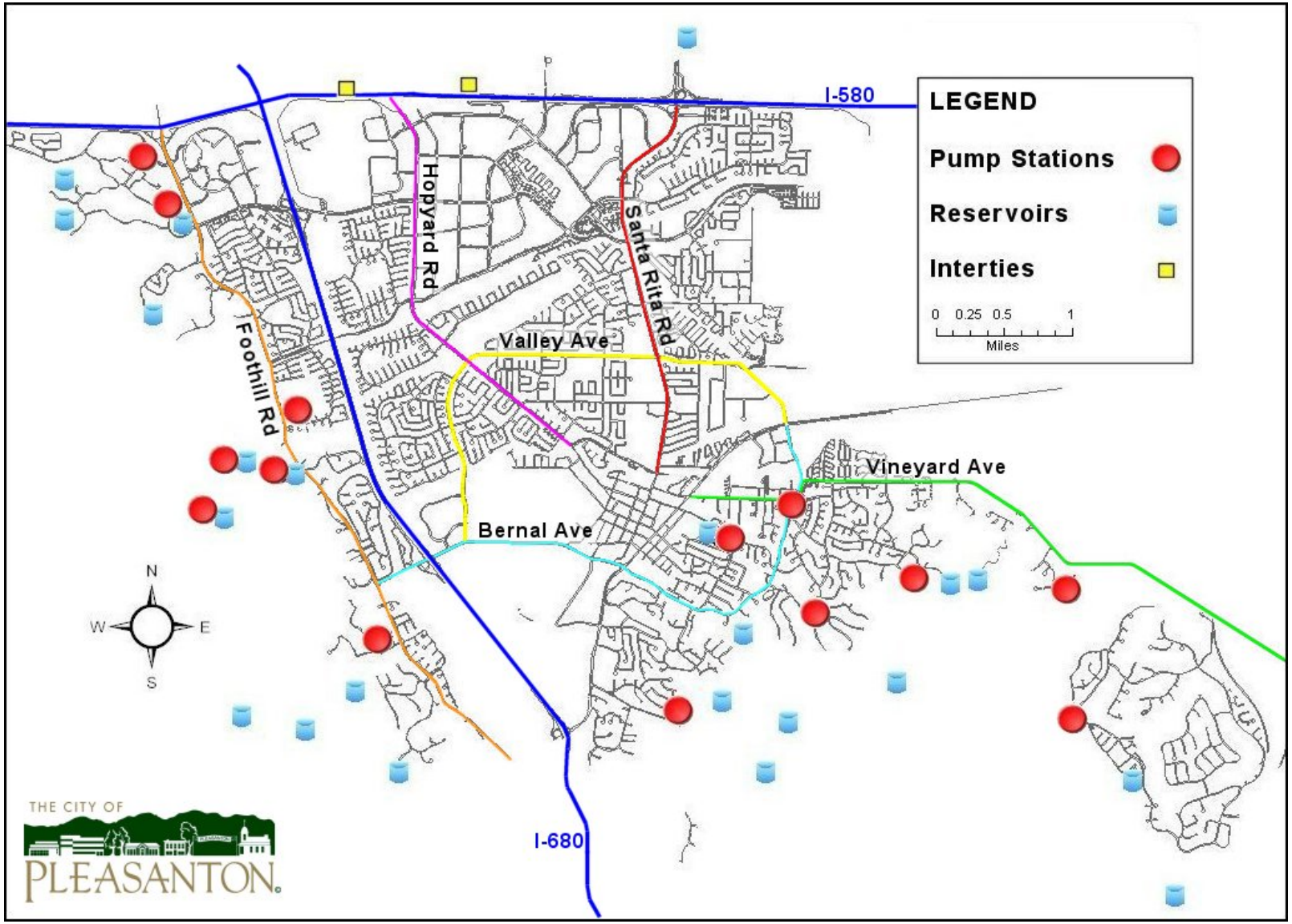


Figure 2-4. City of Pleasanton Pump Stations, Storage Reservoirs, and Emergency Interties



3. SYSTEM DEMANDS

This chapter describes the City of Pleasanton's past, current, and projected (to 2030) water system demands by category, including unaccounted-for water. Additionally, this chapter defines the City's baseline and compliance per capita water use to achieve the twenty percent reduction put forth under the Water Conservation Bill of 2009.

3.1 WATER DEMANDS: PAST, CURRENT (2010), AND PROJECTED

The City of Pleasanton does not service water to agricultural accounts, other agencies, or conduct saline water intrusion barriers, or groundwater recharge.

3.1.1 Pleasanton's Water Demand by Water Use Sector: Past and Current (2010)

Table 3-1 shows the City of Pleasanton's 2005 water demands by customer sector. Table 3-2 presents the City's current (2010) water demand by customer sector. Between this 5-year interval, the number of connections increased by 1 percent, with the majority of added connections falling into the single-family residential sector. Despite a small increase in the number of connections, overall consumption decreased by 1,449 AF, or 9 percent. Possible reasons for the decrease in consumption are customer conservation in response to the 2007 to 2009 drought, and the City's simultaneous request for a voluntary 20 percent reduction in water use, as well as the 2007 to 2010 economic downturn.

Table 3-1. 2005 Water Demand by Customer Sector[(a)]

Customer Sector	Number of Connections	Percent of Total Connections	Volume Consumed (Acre Feet)
Residential: Single-family	18,973	88%	9,035
Residential: Multi-family	220	1%	744
Commercial	1,222	6%	1,927
Institutional/Governmental	58	<0.1%	50
Irrigation	973	5%	4,678
Industrial	5	<0.1%	64
Total	**21,451**	**100%**	**16,498**

[(a)] Source: City of Pleasanton Utility Billing data for 2005 connection reports.

The City of Pleasanton currently supplies potable water to 21,664 residential, commercial, landscape irrigation, and industrial customers within the City of Pleasanton, Pleasanton Ridge, and unincorporated Alameda County along Kilkare Canyon Road just north of the town of Sunol. As shown in Table 3-2, the majority of Pleasanton's customers are primarily single-family residential connections, with 86.6 percent single-family residential connections. All connections are metered.

Table 3-2. Current (2010) Water Demand by Customer Sector[(a)]

Customer Sector	Number of Connections	Percent of Total Connections	Volume Consumed (Acre Feet)
Residential: Single-family	18,766	86.62%	8,326
Residential: Multi-family	311	1.44%	722
Residential: Lower Income	374	1.73%	120
Commercial	1,163	5.37%	1,759
Institutional/Governmental	58	0.27%	50
Irrigation (Landscape)	987	4.56%	4,015
Industrial	5	0.02%	57
Total	**21,664**	**100.00%**	**15,049**

[(a)] Source: City of Pleasanton Utility Billing data for 2010 connection summary.

3.1.2 Pleasanton's Water Demands by Water-Use Sector: Projected

The projected water deliveries by customer sector for the City of Pleasanton service area are summarized in Table 3-3. Compared to 2010 levels, the number of connections (labeled meters in the table below) is estimated to increase by 2,671 connections, or 12 percent; with water volume projected to increase by 1,579 AF, or 10 percent, by 2030.

Table 3-3. Projected Water Deliveries by Customer Sector

Customer Sector	2015		2020		2025		2030	
	# of meters	Volume (AF)	# of meters	Volume (AF)	# of meters	Volume (AF)	# of meters	Volume (AF)
Single-family	19,341	8,581	19,914	8,186	20,489	8,748	21,070	9,348
Multi-family	345	801	385	828	400	894	425	987
Lower Income	390	160	395	175	400	190	405	205
Commercial	1,185	1,792	1,200	1,815	1,250	1,891	1,300	1,966
Institutional/ Governmental	60	52	65	56	70	60	70	60
Irrigation (Landscape)	1,000	4,068	1,050	3,964	1,055	3,985	1,060	4,005
Industrial	5	57	5	57	5	57	5	57
Total	**22,326**	**15,511**	**23,014**	**15,081**	**23,669**	**15,824**	**24,335**	**16,628**

The City of Pleasanton provides lower-income water service to all residents that provide proof of concurrent enrollment in discount programs through the California Department of Economic Opportunity, Social Security Administration, or California Lifeline. In addition, the City Planning Department projects the addition of up to 2,500 residential units by 2020, of which, up to 15 percent (or 375 units) will be classified as lower-income.

Table 3-4. Projected Water Demand from Lower-Income Households

Low Income Water Demand	2015	2020	2025	2030
Single-family residential	115	115	115	115
Multi-family residential	45	65	75	90
Total	**160**	**175**	**190**	**205**

3.1.3 Additional Water Uses and Losses

For planning purposes in this UWMP, unaccounted-for water is the difference between total production (water purchased from Zone 7 and groundwater pumped from City of Pleasanton wells) and the sum of total customer consumption, system flushing, and known leak amounts. Table 3-5 details past, current, and projected water uses (other than customer consumption), and unaccounted-for water.

Distribution system flushing is an important component in the maintenance of water quality throughout the system. Within the past 5 years, the City of Pleasanton has optimized how the distribution system is flushed by using water-sampling data to specifically target areas in need of flushing, therefore reducing the amount of water used annually by system flushing. Additionally, in 2010 Pleasanton began tracking significant leaks for National Pollutant Discharge Elimination System permit reporting.

Table 3-5. Past, Current, and Projected Additional Water Uses and Losses (Acre-Feet)[(a)]

Water Use	2005	2010	2015	2020	2025	2030
Recycled Water	NA	NA	140	447	447	447
System Flushing	35	18	20	22	24	27
Known Leaks	NA	8	8	10	12	15
Unaccounted-for Water	1,527	1,056	1,003	953	906	860
Total	**1,562**	**1,082**	**1,171**	**1,432**	**1,388**	**1,349**

[(a)] System flushing, known leaks, and unaccounted-for water are all part of potable water demands.

3.1.4 Total Water Demand on City of Pleasanton's Water Supply System

Table 3-6 summarizes the City of Pleasanton's past, current, and projected total water use. The volumes reflect total customer water deliveries, as well as the additional water uses and losses detailed in Table 3-5.

Table 3-6. Past, Current, and Projected Total Potable Water Use (Acre-Feet)

Water Use	2005	2010	2015	2020	2025	2030
Total customer water deliveries	16,498	15,049	15,511	15,081	15,824	16,628
Additional water uses & losses	1,562	1,082	1,171	1,432	1,388	1,349
Total	**18,060**	**16,131**	**16,682**	**16,513**	**17,212**	**17,977**

3.2 BASELINE DAILY PER CAPITA WATER USE & TARGET CALCULATIONS

The baseline and target values outlined within the scope of this 2010 UWMP were developed on an individual effort by the City of Pleasanton.

3.2.1 Baseline Water Use

With no recycled water deliveries in 2008, the City of Pleasanton has defined a 10-year baseline period of water use to develop the City's target levels of per capita water use. The 10-year baseline period begins January 1, 1996 and ends December 31, 2005. Table 3-7 details Pleasanton's population served and the water supply serviced for each of the 10 base years. The average base daily per capita water use over this 10-year period is 244 gallons per capita per day (gpcd).

Table 3-7. City of Pleasanton 10-Year Base Daily Per Capita Water Use

Base Year[(a)]	Distribution System Population[(b)]	Gross Water Use (gallons per day)[(c)]	Annual Daily Per Capita Water Use (gpcd)
1996	56,013	4,994,432,000	244
1997	57,855	5,514,169,000	261
1998	60,315	4,995,518,000	226
1999	61,678	5,426,981,000	241
2000	63,645	5,523,311,000	238
2001	64,308	5,915,563,000	252
2002	65,256	5,934,772,000	249
2003	66,198	5,766,876,000	239
2004	66,849	6,143,034,000	252
2005	67,500	5,884,825,000	239
Base Daily Per Capita Water Use			**244**

[(a)] Base years are reported from the calendar year.
[(b)] Population data source: 1996 – 1999 taken from Department of Finance, Report E-4; 2000 – 2005 taken from Association of Bay Area Governments, November 2009, *Building Momentum: Projections and Priorities 2009.* (See Section 3.2.3 for details on value determinations)
[(c)] See Section 3.2.3 for details on gross water use determination

The five-year baseline period, used to confirm the City's target calculations begins January 1, 2004 and ends December 31, 2008. Table 3-8 details the Pleasanton population served and water supply serviced for each of the five base years. The average base daily per capita water use over the 5-year range is 244 gpcd.

Table 3-8. City of Pleasanton 5-Year Base Daily Per Capita Water Use

Base Year[(a)]	Distribution System Population[(b)]	Gross Water Use (gallons per day) [(c)]	Annual Daily Per Capita Water Use (gpcd)
2004	66,849	6,143,034,000	252
2005	67,500	5,884,825,000	239
2006	68,311	5,963,626,000	239
2007	68,911	6,229,289,000	248
2008	69,215	6,109,822,000	242
Base Daily Per Capita Water Use			**244**

[(a)] Base years are reported from the calendar year.
[(b)] Population data source: Association of Bay Area Governments, November 2009, *Building Momentum: Projections and Priorities 2009.* (See Section 3.2.3 for details on value determinations)
[(c)] See Section 3.2.3 for details on gross water use determination

3.2.2 Interim Target and Target Water Use

Method 1 of the four target method options was selected to determine Pleasanton's interim target and target water use for 2015 and 2020, respectively. This method was selected as the best-fit method for Pleasanton's service area. Under Method 1, the 2020 target is 80% of the base daily per capita water use. As defined by DWR, the interim water use target is determined by adding the base daily per capita water use to the 2020 water use target, then divide by two.

To confirm Pleasanton's target has met the minimum reduction established by statute, 95% of the 5-year base daily per capita water use was compared to the 2020 target. The 2020-target value is less than 95% of the 5-year base daily per capita water use; therefore the 2020 target meets the required minimum reduction. Pleasanton's target, interim target, and confirmation are as follows:

City of Pleasanton 2020 Target:	**195 gpcd**
City of Pleasanton 2015 Interim Target:	**220 gpcd**
10-Year Base Daily Per Capita Water Use:	**244 gpcd**
5-Year Base Daily Per Capita Water Use:	**244 gpcd**
2020 Target Confirmation (95% of 5-year base):	**232 gpcd**

3.2.3 Value Determinations

DWR outlines within the publication, *Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use,* the "Methodologies" necessary to follow in determining baseline values and target values as required by the Water Conservation Act of 2009. Details of the specific Methodologies used pertinent to the determination of the above City of Pleasanton values are discussed below.

3.2.3.1 Gross Water Use

Methodology 1 details the steps necessary to determine the gross water use values as seen above in Section 3.2.1, required in the generation of the base per capita per day values. Pleasanton currently does not deliver recycled water, does not place water into long-term storage, and has no water deliveries for agricultural use; therefore under the Water Code's definition of gross water use, Pleasanton's gross water use is the total calendar year groundwater pumped plus the total calendar year volume of water supplied by Zone 7. Additionally, Pleasanton does not deliver a significant amount of process water; therefore no process water deductions were made from the gross water use volume.

Pleasanton's distribution system boundary, as shown in Figure 3-1, has had no major changes during the base period (1996 – 2005). The boundary is further defined by10 points of metering; 7 metered turnouts from the regional wholesaler Zone 7, and 3 metered wells owned by the City of Pleasanton. The meters from the Zone 7 turnouts are calibrated on an annual basis, and the meters measuring pumped water from groundwater wells are also calibrated routinely. Therefore, the metered volumes require no further steps of correction.

3.2.3.2 Service Area Population

Methodology 2 details how to define the service area population. The City of Pleasanton is categorized as a "Category 2" water supplier (A Category 2 supplier is one whose actual distribution area overlaps with less than 95% of city boundaries, and has an electronic geographic information system map of their distribution area). Geographic information system (GIS) analysis indicates that less than 95% of the

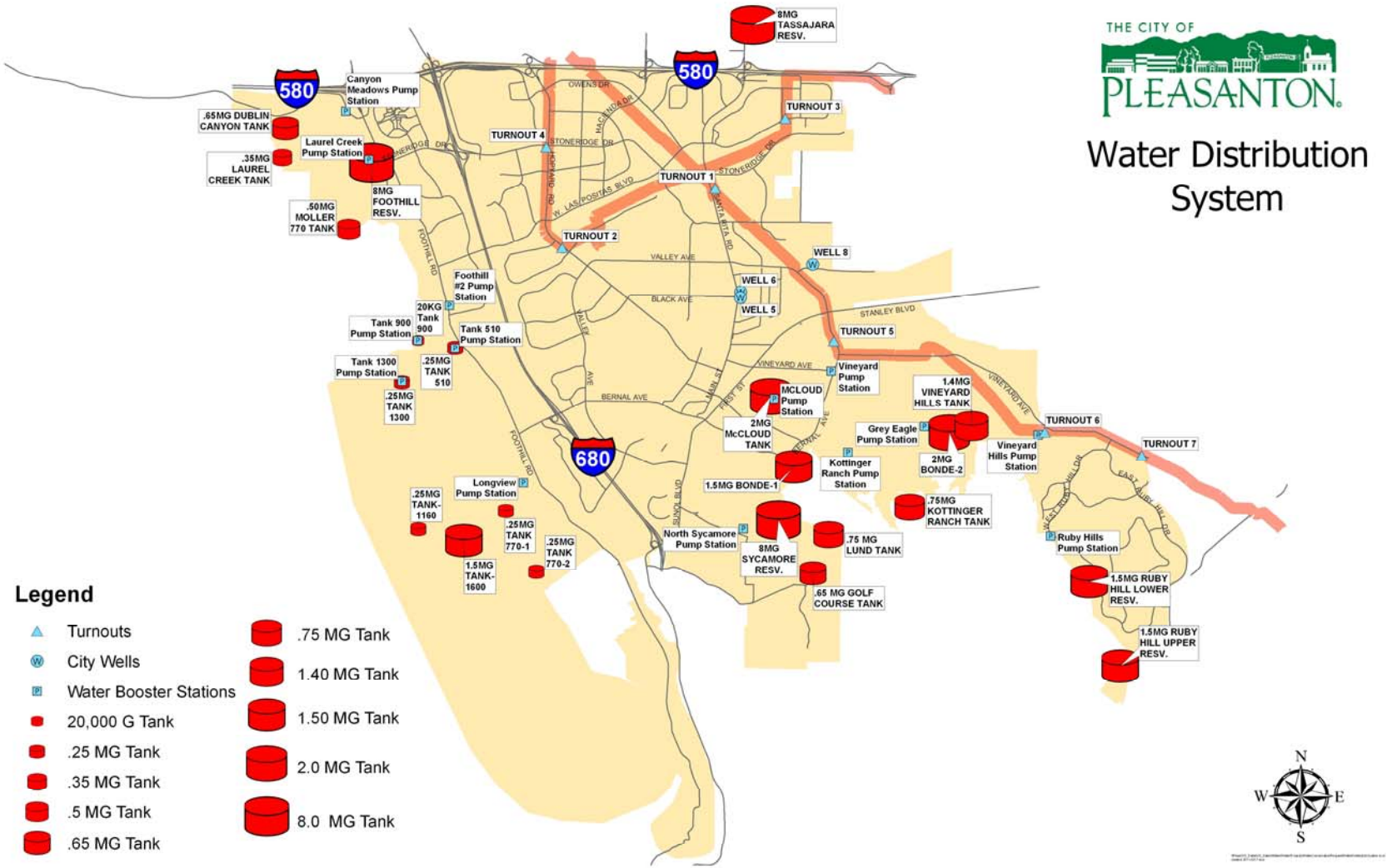
City's actual distribution area overlaps with the City's boundaries (actual: 77%). However, the actual number of connections and total water serviced within this unincorporated area is only 1% and 0.8%, respectively (2010 connections: 264 out of a total of 21,643; 2010 water supplied: 145 AF out of a total 16,131 AF).

Pleasanton is a member of the Association of Bay Area Governments (ABAG), which develops population estimates using information from the Department of Finance and the Census Bureau. With its membership in ABAG and limited water service within its unincorporated service area, the City of Pleasanton complies as a Category 2 water supplier able to use population data from ABAG or the Department of Finance in the determination of base daily per capita water use.

ABAG's most recent publication of population projections (at the time of this UWMP development), *Building Momentum: Projections and Priorities 2009* (November 2009), provides population estimates from 2000 to 2035 in five-year increments. However, calculation of the 10-year base daily per capita water use requires population estimates for years prior to 2000. Department of Finance (DOF) population estimates were used for the years needed prior to 2000 (1996 – 1999). Pleasanton's justification for using DOF as a second source of population estimates is a) ABAG develops population estimates using DOF data, and b) comparison of 2000 and 2005 DOF estimates to ABAG estimates vary by 0.2% and 0.5%, respectively. DOF estimates were not exclusively used, as they do not provide projected population estimates.

Lately, the City determined the population estimates for each year between the 5-year increments for the years 2000 – 2010 by using actual connection data for each year to determine the year-to-year proportion of connection change between the 5-year intervals. Those proportions were then applied to the population estimates (using years 2000, 2005, and 2010 as fixed points) to calculate the between interval-years population projections.

Figure 3-1. City of Pleasanton's Water Distribution System



3.3 WATER DEMAND PROJECTIONS

As discussed in detail in Section 5.1, Zone 7's current reliability policy with the City of Pleasanton covers 100% of M&I water demands over the next 20 years through average, single dry and multiple dry years (defined within the noted section). Demand projections are submitted to Zone 7 annually, projecting for the future 5 years of demand. Therefore, demand projections provided to Zone 7 cover the years 2011 through 2015. Table 3-9 shows the actual projected demands, with an estimate of expected conservation, and recycled water use deducted from the requested delivery amounts.

Table 3-9. Pleasanton Water Demand Projections Provided to Zone 7

	2011	2012	2013	2014	2015
Requested Deliveries	16,600	16,700	16,800	17,100	17,500
Estimated Water Conservation	450	484	514	581	678
Recycled Water Use	0	0	0	0	140
Actual Projected Demand[(a)]	16,150	16,216	16,286	16,519	16,682

[(a)] Actual Projected Demand includes Pleasanton's groundwater pumping quota of 3,500 AFA.

3.4 WATER USE REDUCTION PLAN

The City of Pleasanton is committed to achieving compliance with the legislative goals set fourth by the Water Conservation Bill of 2009 to help protect a future sustainable supply of this valuable resource. The City's plan for implementing potable water use reduction within the service area to meet Code compliance involves two main components: 1) the development of Pleasanton's Recycled Water System (see Section 4.6), and 2) expansion of Pleasanton's Water Conservation Program within each customer sector.

As shown by the most recent drought event, the community serviced by Pleasanton's distribution system, can respond to the request of voluntary water conservation. In 2008, in response to the governor's declaration of drought, Pleasanton began requesting its water customers reduce their water consumption by 20%. As shown in Section 3.1, Pleasanton customer water consumption between 2005 and 2010 decreased by 1,449 AF, or 9% (the economic downturn is likely responsible for a portion of the decrease in water use as well), and additional operational efficiency improvements brought the total decrease in water consumption to 1,929 AF, or 11%.

At present, Pleasanton's 2010 annual daily per capita water use is in compliance with the 2015 Interim Target (220 gpcd) at 207.8 gpcd. With implementation of Pleasanton's water use reduction plan, the percent change in annual daily per capita water use necessary to meet the 2020 Target are considered achievable, as shown in Table 3-10.

Table 3-10. Summary of Change in GPCD Necessary to Meet 2020 Target

Year	Volume Consumed/ Projected Demand (AF)	% Change from Previous Year	GPCD (1-year)
2005	18,060 (Actual)		239
2010	16,131 (Actual)	11% decrease	207.8
2015	16,682	3% increase	206
2020	16,513	1% decrease	195

3.4.1 Implementation of Pleasanton's Water Use Reduction Plan

As mentioned above, the City's implementation plan for achieving compliance with the Water Conservation Bill of 2009 include the development of Pleasanton's Recycled Water System and the expansion of the City's current Water Conservation Program. The development of Pleasanton's Recycled Water System will reduce potable water use by converting a portion of irrigation connections serviced currently by potable water, to recycled water. By 2020 Pleasanton's Recycled Water System is projected to service major commercial irrigation regions in Pleasanton, as well as numerous City parks. See Section 4.6 for a complete summary.

The second component, expansion of the City's Water Conservation Program, will be a collaborative effort including internal operations, program partnerships with Zone 7, City program development, and the community's continual cooperation. Details are discussed below.

Pleasanton Water Operations: The commitment to working towards achieving the City's 2020 Target begins with improving water use efficiency in City operations and City landscaping. As described in Section 6.1.3, the City routinely monitors for water loss from leaks or meter failures. On a bi-monthly basis, the City's billing software monitors for abnormal consumption rates, which results in the early detection of leaks and meter failures. All leaks and meter failures are promptly repaired.

Additionally, Section 3.1.3 noted the City's optimization of how the distribution system is maintained by distribution system flushing. Within the past 5 years, water-sampling data is used to specifically target areas in need of flushing, rather than flushing the entire system, therefore reducing the amount of water used annually by system flushing.

Lastly, the City has begun to reduce the turf-footprint on City property. Areas of turf removal are then re-landscaped with a deep level of mulch and where needed, climate-adapted plants. Approximately 159,000 square feet have already been converted to lower water-use landscape, and an estimated 75,000 square feet of turf removal is planned within the next twelve months.

Zone 7 Program Partnerships: Several upcoming regional programs facilitated by Zone 7 will offer various customer sectors additional methods to achieve greater water efficiency. (Current partnered regional water conservation programs run by Zone 7 are discussed in Section 6.) The programs Zone 7 plans to launch on July 1, 2011 are:

- Residential and commercial turf replacement program
- Residential and commercial rebate on spray irrigation replacement with drip irrigation
- Commercial and residential weather-based irrigation controller rebate
- Direct install high-efficiency toilets and urinals for commercial customers
- Direct install high-efficiency toilets for residential customers

City of Pleasanton Water Conservation Program Development: Pleasanton strives to meet the needs of its customers. As a direct response to customer inquiry for assistance, in 2010 the City launched its Controller Assistance Program (see Section 6.1.1). The aim of this program is to assist residents in the proper programing of their current irrigation controller and install at no charge rain sensors to help residential customers water their landscapes more efficiently.

Programs or actions that may be considered for implementation in the future include:

- A commercial turf replacement program, which would enhance the City's current Commercial Irrigation Equipment Rebate Program (Section 6.1.5)
- Updating City Ordinances to elicit greater water efficiency in landscaping and expand on water waste prohibitions.

Community cooperation is critical to achieving Pleasanton's 2020 Target. Continual public outreach is a vital component of Pleasanton's Water Conservation Program expansion. Educating all water customer sectors of water-efficient alternatives, both behavioral and technological, will help influence customer habits and decisions in the direction of greater water-efficiency. Water-efficient habits have been shown to decline over time, therefore it is necessary for Pleasanton to continue public outreach and education to maintain community awareness of the need to protect water as a way of life, rather than solely during drought events.

3.4.2 Economic Impacts

Pleasanton has made an effort to develop an implementation plan that does not place a disproportionate burden on any customer sector as shown in the variety of programs detailed in section 3.4.1 above. In many of the programs, there is an element of financial incentive to the consumer that ranges from rebates to no cost at all.

In addition, there is a commitment from Pleasanton to reduce potable water consumption by shifting that demand to a new recycled water program (detailed in Section 4.6). Pleasanton's water rate structure reflects this by having a portion of the rates in all sectors dedicated to funding a recycled water program.

By shifting demand from the potable drinking water supplies to a recycled water program, there are multiple immediate benefits:

- Unit cost to the customer is less than the cost of fully treated drinking water.
- Expensive regional connection fees for potable water are no longer required as recycled water is not subject to those fees.
- With increasing impact on regional water supplies, shifting demand to recycled water gives Pleasanton the ability to continue with a more reasonable opportunity for sustainable development.
- Access to federal and state grants to improve and expand our Pleasanton's recycled water facilities that are not available for potable drinking water supplies.

From the perspective of the revenue stream to the operating capital of the enterprise fund, the largest component cost of the potable drinking water delivered is in the steadily increasing wholesale purchase price. A shift to recycled water sources as a replacement has the added potential of significantly reducing that specific cost escalator.

4. SYSTEM SUPPLIES

The purpose of this chapter is to describe the sources of water available to the City of Pleasanton, and in turn distributed through Pleasanton's water supply system. The water sources include (1) wholesale water purchased from Zone 7 Water Agency (Zone 7), and (2) local groundwater. Zone 7 of the Alameda County Flood Control and Water Conservation District supplies the majority of Pleasanton's water, typically 80%. Zone 7 supplies wholesale, treated water to the Tri-Valley area; and also manages the underlying groundwater basin. Zone 7 distributes its water supplies to the City of Pleasanton, City of Livermore, Dublin San Ramon Services District (DSRSD), California Water Service Company (CWS), and some unincorporated and agricultural areas based on individual water delivery schedules. A summary of Zone 7's water supply origins is provided; for further detail see Zone 7's 2010 Urban Water Management Plan (available at www.zone7water.com). Additionally, this section details Pleasanton's future recycled water opportunities and future water projects.

4.1 WATER SUPPLY AGREEMENT WITH ZONE 7

Since the late 1960's the City of Pleasanton has been in contract with Zone 7 to receive the majority of the City's treated water supply. This arrangement is expected to continue indefinitely into the future. Currently, the contract between Zone 7 and the City of Pleasanton for a Municipal and Industrial Water Supply is in the process of being renewed. In the interim, the City of Pleasanton and Zone 7 follow an agreement that serves as the acting contract. This agreement ensures an equitable, reliable, and high quality water service for Pleasanton customers.

Some of the key provisions of the contract include the following:

- Water Supply: The agreement states that the City of Pleasanton shall purchase from Zone 7 all water required by the City for use within Pleasanton's service area. With the exception that the City may extract groundwater per the agreement provisions (detailed below).

- Water Quality: The agreement states that all treated water delivered by Zone 7 shall be of quality that complies with the Requirements for Drinking Water of the California Department of Health Services and the US Environmental Protection Agency or their successor regulatory agencies.

- Service Area: The agreement states that Pleasanton's service area also includes any future areas within the boundaries of Zone 7. Pleasanton may include future areas outside of the future area if it is found to be in the best interests of Zone 7.

- Groundwater Extraction: Under this agreement the City of Pleasanton shall not extract more than 3,500 acre-feet of groundwater pumping (Groundwater Pumping Quota; GPQ), from the Main Basin in any calendar year. The following exceptions apply: a) The City pays Zone 7 a recharge fee for recharging the Main Basin, b) the groundwater extracted is the City's accumulated carry-over of its GPQ from prior years

- Carryover of Pumping Quota: This agreement provides for a limited carryover of 700 AF of unused pumping quota from one year to another.

4.2 WATER SOURCES FOR THE CITY OF PLEASANTON

As noted above, the City of Pleasanton purchases approximately 80% of its water from Zone 7, and the remaining portion is pumped by the City from the Main Basin groundwater supply per agreement specified above with Zone 7. Prior to 2015, Pleasanton will begin the development and delivery of recycled water within the service area (details are outlined in Section 4.6). The City of Pleasanton's water supply sources are summarized in Table 4-1. Pleasanton's agreement with Zone 7 (as described in Section 5.1) specifies Zone 7 will supply 100% of Pleasanton's demand for the next twenty years.

Table 4-1. City of Pleasanton's Water Supply (Acre-Feet)

Water Supply Source	Year				
	2010 (Actual)	2015	2020	2025	2030
Zone 7 Water Agency[(a)]	12,672	13,310	14,222	14,983	15,743
Main Basin Groundwater (City pumped)	3,507	3,500	3,500	3,500	3,500
Recycled Water[(b)]	-	140	447	447	447
Total Water Supply	**16,179**	**16,950**	**18,169**	**18,930**	**19,690**

[(a)] Estimates for 2010-2030 were obtained from Zone 7's 2010 UWMP supply required for City of Pleasanton (Section 9.3.1) data. Estimates were corrected using City of Pleasanton's 2010 actual water use.

[(b)] Currently Pleasanton does not have recycled water service. Pleasanton will likely start providing recycled water by 2013. See recycled water details below.

4.2.1 Summary of Zone 7's Water Sources

Zone 7 uses a combination of water supplies and water storage facilities to meet its retailers' water demands. These include the following:

- Imported surface water from the State Water Project (SWP)
- Imported surface water transferred from Bryon Bethany Irrigation District (BBID)
- Local surface water runoff captured in Del Valle Reservoir
- Local groundwater extracted from the Main Basin
- Local storage in the Chain-of-Lakes
- Non-local groundwater storage in the Semitropic Water Storage District
- Non-local groundwater storage in the Cawelo Water District

Imported surface water constitutes over 80% of Zone 7's water source. This water is from the State Water Project, and from the Byron Bethany Irrigation District. Zone 7 entered into a 75-year agreement with the Department of Water Resources (DWR) in November of 1961 to receive water from the State Water Project (SWP). The SWP is the country's largest publicly built water storage and conveyance system, which serves over 25 million people throughout California. Water in the SWP originates from the Feather River watershed, and is subsequently captured in and released from Lake Oroville, then flows through the Sacramento-San Joaquin Delta. Zone 7's portion is conveyed via the South Bay Aqueduct (SBA) to Zone 7. Lake Del Valle is part of the SBA system and is used for storage of the SWP water, as well as local runoff. Zone 7 also uses SWP water to artificially recharge the local ground water basin.

Zone 7's current contract with DWR, which expires in 2036, is for the delivery of up to 80,619 acre-feet annually (AFA). However, the actual amount of water available to Zone 7 under the Table A allocation (the primary allocation agreement between DWR and its SWP contractors), varies from year to year due to hydrologic conditions, water demands of other contractors, SWP facility capacity, and regulatory requirements.

Zone 7 also has the option to carry over unused Table A water from one year to the next. This water is stored, when space is available, in the San Luis Reservoir. Zone 7 typically sets aside between 10,000 to 15,000 acre-feet of carryover water, when possible. The Yuba Accord allows Zone 7 access to additional water supply.

A summary of Zone 7's water supplies and available dry year storage are provided in Table 4-2 and Table 4-3, respectively. For further details see Zone 7 Water Agency's 2010 UWMP.

Table 4-2. Zone 7's Water Supply Sources Based on Median Yields[1, (a)]

Water Supply Source Median Yields (Acre-Feet)	Year				
	2010	**2015**	**2020**	**2025**	**2030**
State Water Project: Table A[(b)]	51,400	51,400	51,400	51,400	51,400
State Water Project: Yuba Accord	145	145	145	145	0[(c)]
Bryon Bethany Irrigation District	4,500	4,500	4,500	4,500	4,500
Arroyo del Valle	7,100	7,100	7,100	7,100	7,100
Total Water Supply	**63,145**	**63,145**	**63,145**	**63,145**	**63,000**

[(a)] The quantities listed are median quantities in normal years.
[(b)] Zone 7's contractual Table A amount is 80,619 AFA; the amount listed is the projected median yield after correcting for carry over in the amounts listed in the 2009 SWP Delivery Reliability Report.
[(c)] The Yuba Accord contract ends in 2025.

Table 4-3. Zone 7's Water Storage Options

Storage Option	Water in Storage through April 2010 (Acre-Feet)
Lake Del Valle	4,900
Main Basin	74,000
Semitropic	78,100
Cawello	5,000
Total Storage	**162,000**

4.3 GROUNDWATER SUPPLY

This section describes the Livermore Valley Groundwater Basin and Zone 7's Groundwater Management Plan that is used to manage the basin. The City of Pleasanton owns and operates three active groundwater wells from which the City pumps water from the Main Basin. Zone 7 has been actively managing the Groundwater Basin for over the past 40 years. The current Zone 7 Groundwater Management Plan[2] (GMP) was developed in accordance with Assembly Bill 3030 (AB 3030)[3]. Key elements of the GMP are covered below and a copy is provided on CD in Attachment A.

The City of Pleasanton, Dublin San Ramon Services District, the California Water Service Company, and the City of Livermore, and Zone 7 have made a mutual agreement to limit the combined extraction to approximately 7,200 AFA from the Main Basin. Zone 7 does not have a ground-water pumping quota,

[1] Zone 7, 2010. Draft 2010 Urban Water Management Plan.
[2] Jones & Stokes, 2005. Groundwater Management Plan for Livermore-Amador Valley Groundwater Basin.
[3] AB 3030 (Sections 10750-10756 of the California Water Code) provides a systematic procedure for the development of a groundwater management plan by existing agencies.

and only pumps groundwater it artificially recharges. Consequently, Zone 7 utilizes Main Basin as a storage facility and not as a long-term water supply.

4.3.1 Description of the Livermore Valley Groundwater Basin

As defined in DWR Bulletin 118 update 2006 (*California's Groundwater*), the Livermore Valley Groundwater Basin (DWR Basin 2-10) extends from the Pleasanton Ridge east to the Altamont Hills and from the Livermore Upland north to the Orinda Upland; an area that covers over 17,000 acres and has a storage capacity of more than 250,000 AF[4]. *This groundwater basin is not adjudicated, and DWR has not identified Basin 2-10 as either in overdraft or expected to be in overdraft.* Surface drainage features include Arroyo del Valle, Arroyo Mocho, and Arroyo Las Positas as principal streams. All streams converge on the west side of the basin to form Arroyo de la Laguna, which flow south and joins Alameda Creek in Sunol Valley and ultimately leads to the San Francisco Bay. Some geological structures restrict the lateral movement of groundwater, but the general groundwater gradient is to the west, then south towards Arroyo de la Laguna.

The entire floor of the Livermore Valley and portions of the upland areas on all sides of the valley overlie groundwater-bearing materials. The materials are mostly continental deposits from alluvial fans, outwash plains, and lakes. They include valley-fill materials, the Livermore Formation, and the Tassajara Formation. Under most conditions, the valley-fill and Livermore sediments yield adequate to large quantities of groundwater to all types of wells. With the largest supply wells being located in the Main Basin. Figure 4-1 shows well locations within the Main Basin. The Main Basin is composed of the Castle, Bernal, Amador, and Mocho II sub-basins.

4.3.2 Groundwater Supply, Storage, and Quality

In the early 1900's groundwater provided the majority of agricultural and domestic water demands of the Livermore Valley. This resource went through several periods of extended withdrawal and subsequent recovery. The Main Basin reached its historic low of 126,500 AF (52 percent of capacity) in the 1960's when approximately 110,000 AF of groundwater was extracted. Early reports found that the groundwater supply was not limitless, but was actually less than about 20,000 AFA. It was during the period of subsequent recovery from the Main Basin's historic low, that Zone 7 first conducted a program of groundwater replenishment by recharging imported surface water in its streams for storage in the Main Basin. In 1987, Zone 7 adopted a Groundwater Management Policy. Currently, Zone 7 manages the Main Basin so that under non-emergency conditions, including several multi-year droughts, groundwater elevations do not drop below historic low levels (52 percent of capacity). According to Zone 7's 2009 Annual Report for the Groundwater Management Program, the Main Basin contains high-yielding aquifers (with a storage capacity of over 250,000 AF), and good quality groundwater. See Figure 4-2 for key well hydrographs showing historical changes in the western portion of the Main Basin groundwater levels.

Long-term natural sustainable yield is defined as the average amount of water that can be pumped annually from the Main Groundwater Basin and replenished by natural recharge (percolation of rainfall, natural stream flow, and irrigation waters, and inflow of subsurface waters). In contrast, artificial recharge is the aquifer replenishment that occurs from artificially induced or enhanced stream flow. Zone 7 has determined the natural sustainable yield of the Main Basin to be about 13,400 AFA, which is 10-11% of the Main Basin's total estimated useable groundwater storage. This long-term natural sustainable yield is based on over a century of hydrologic records. As mentioned previously, the City of Pleasanton, Dublin

[4] Jones & Stokes, 2005. Groundwater Management Plan for Livermore-Amador Valley Groundwater Basin.

San Ramon Services, the California Water Service Company, and the City of Livermore, and Zone 7 have made a mutual agreement to limit the combined extraction to approximately 7,245 AFA from the Main Basin. Each Zone 7 retailer has an established Groundwater Pumping Quota (GPQ). Pleasanton's GPQ is 3,500 AFA, with the ability to carryover 700 AF of unused quota from one year to another. Table 4-4 shows the water yield pumped by Pleasanton for the past 5 years, along with water quality information directly pertaining to the groundwater supply pumped (system wide water quality is discussed in Section 5.3).

Table 4-4. 2005 - 2010 Pleasanton Groundwater Production[(a)] and Quality[(b)] from Main Basin[(c)]

Year	Pleasanton Groundwater Production (Acre-Feet)	% of Total Water Supply	Total Dissolved Solids (mg/L)		Hardness (mg/L)	
			Individual Sample Range	Annual Average	Individual Sample Range	Annual Average
2005	3,511	19%	410 - 500	460	280 - 354	326
2006	3,515	19%	416 - 558	492	270 - 390	340
2007	3,380	18%	430 - 520	467	307 - 442	366
2008	2,954	16%	484 - 614	562	278 - 415	357
2009	3,506	20%	400 - 590	500	290 - 430	367
2010	3,507	22%	482 - 623	563	309 - 474	408

[(a)] Source: City of Pleasanton Utility Division records.
[(b)] Source: City of Pleasanton Annual Water Quality Reports 2005 – 2010.
[(c)] All pumped groundwater is metered.

The Main Basin is characterized by relatively good quality groundwater that meets all state and federal drinking water standards. Groundwater is chloraminated to maintain consistent disinfectant residual in the distribution system and to preserve water quality. However, there has been a slow degradation of groundwater quality as evidenced by rising Total Dissolved Solids (TDS) and hardness levels over the last few decades. To address this problem, Zone 7 developed a Salt Management Plan (SMP)[5], which was approved by the Regional Water Quality Control Board in 2004. As part of this SMP, Zone 7 completed construction of a wellhead demineralization facility (Mocho Groundwater Demineralization Facility) in 2009. Employing a reverse osmosis membrane-based treatment system, this facility simultaneously allows for the removal and export of salts[6] from the Main Basin and the delivery to customers of treated water with reduced TDS and hardness levels.

Zone 7 is planning to install a second groundwater demineralization facility to remove additional salts from the Main Basin. The timing of this installation will be determined based on the performance of the Mocho Groundwater Demineralization Facility.

Zone 7 does not utilize the natural sustainable yield from the basin, but extracts groundwater that was previously artificially recharged from Zone 7's surface water supplies. On average Zone 7 recharges 9,200 AFA, and subsequently pumps an equivalent 9,200 AFA from the Main Basin. Groundwater is used by Zone 7 under the following conditions: to supplement surface water supply delivered through the South Bay Aqueduct (SBA), when the SBA is out of service, when Zone 7's surface water treatment plants are operating under reduced capacity, to reduce salt loading, or under emergency drought conditions when there may be insufficient surface water supply available.

[5] Zone 7 Water Agency, 2004. Salt Management Plan.
[6] The brine concentrate resulting from the treatment system is exported to the San Francisco Bay via a regional wastewater export pipeline.

4.3.3 City of Pleasanton System-Wide Water Quality

Water provided to Pleasanton by Zone 7 is a blend of groundwater and treated surface water. Water quality varies both in space and time. System-wide total dissolved solids (TDS) and hardness, which includes both treated surface water and groundwater pumped water, are shown in Table 4-5. Note that 2007 to 2009 were drought years, resulting in decreased surface water availability from the SWP; hence, Zone 7's use of groundwater increased during this time. The range shown on Table 4-5 corresponds to individual sample values of all sampling locations. A customer's location within the service area and their nearness to the particular wells pumping into the distribution system would determine the actual water quality they receive.

Table 4-5. System-Wide Water Quality[(a)] in City of Pleasanton's Service Area[(b)]

Year	Total Water Supply (Acre-Feet)	Total Dissolved Solids (mg/L)		Hardness (mg/L)	
		Individual Sample Range	Annual Average	Individual Sample Range	Annual Average
2005	18,045	96 - 775	346	96 - 476	188
2006	18,274	109 - 861	306	68 - 472	217
2007	19,150	189 - 618	361	80 - 472	204
2008	18,813	189 - 711	413	104 - 480	173
2009	17,461	187 - 868	435	64 - 684	246
2010	16,131	154 - 791	385	64 - 552	236

[(a)] System-wide water is a blend of groundwater from Pleasanton wells, Zone 7 wells, and treated SWP surface water purchased from Zone 7.
[(b)] Source: City of Pleasanton Utility Division records.

4.3.4 Projected Groundwater Use

Pleasanton's projections of future groundwater extraction will remain 3,500 AFA from the Main Basin under the scope of this UWMP, as shown in Table 4-6. There are currently no plans to change or expand Pleasanton's groundwater supply. However, as water conservation efforts increase to ensure Pleasanton reaches its 2020 water target (as discussed in Chapter 3), it is estimated that the percent of total water supplied from Pleasanton wells will slowly decrease to 17 percent by 2030 as water demand decreases from increased conservation efforts are offset with increased population.

Table 4-6. Projected Pleasanton Groundwater Pumping[(a)]

Basin	2015	2020	2025	2030
Main Basin	3,500	3,500	3,500	3,500
% of Total Water Supply	**20%**	**19%**	**17%**	**17%**

Figure 4-1. Map of Main Basin with Municipal Well Locations

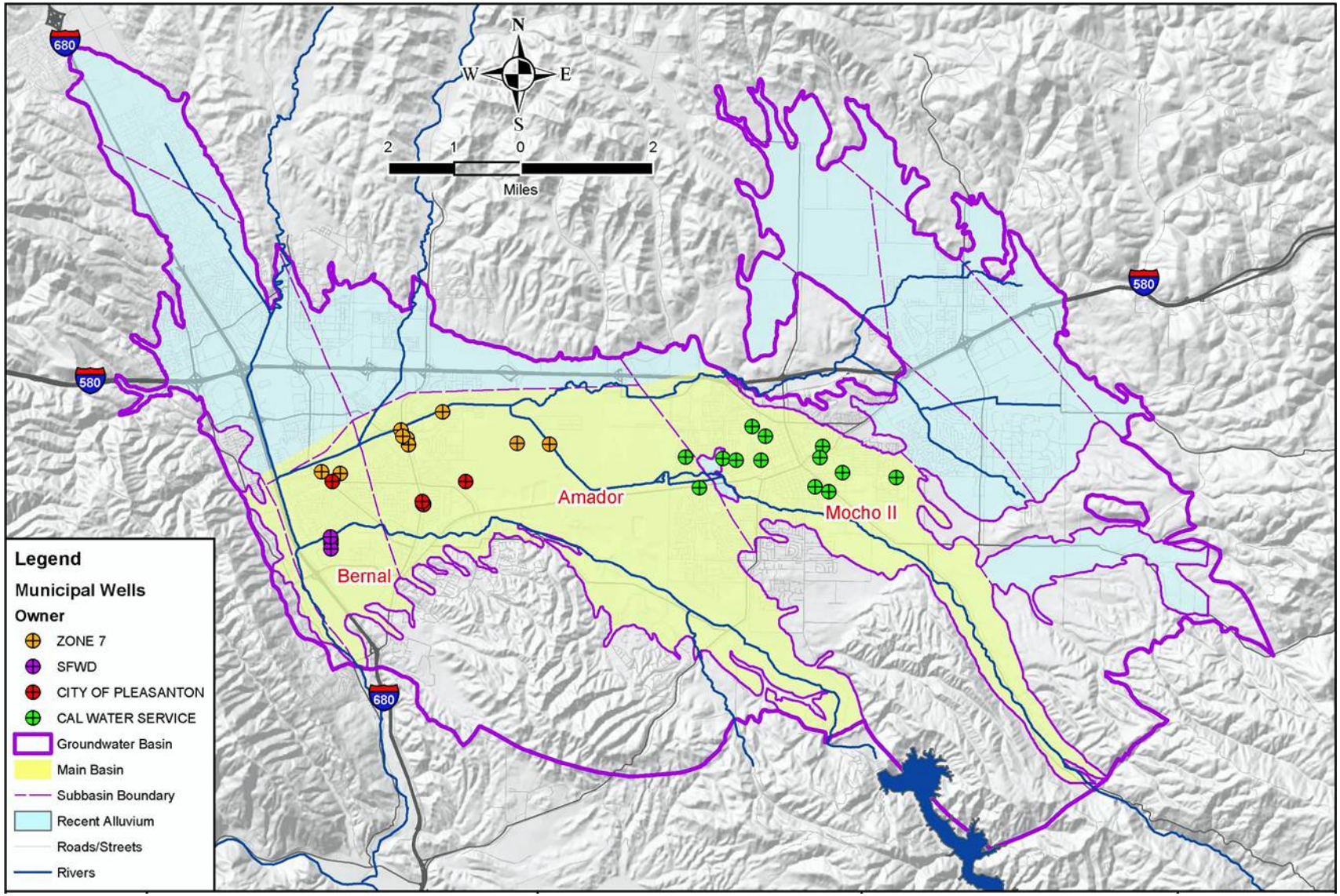
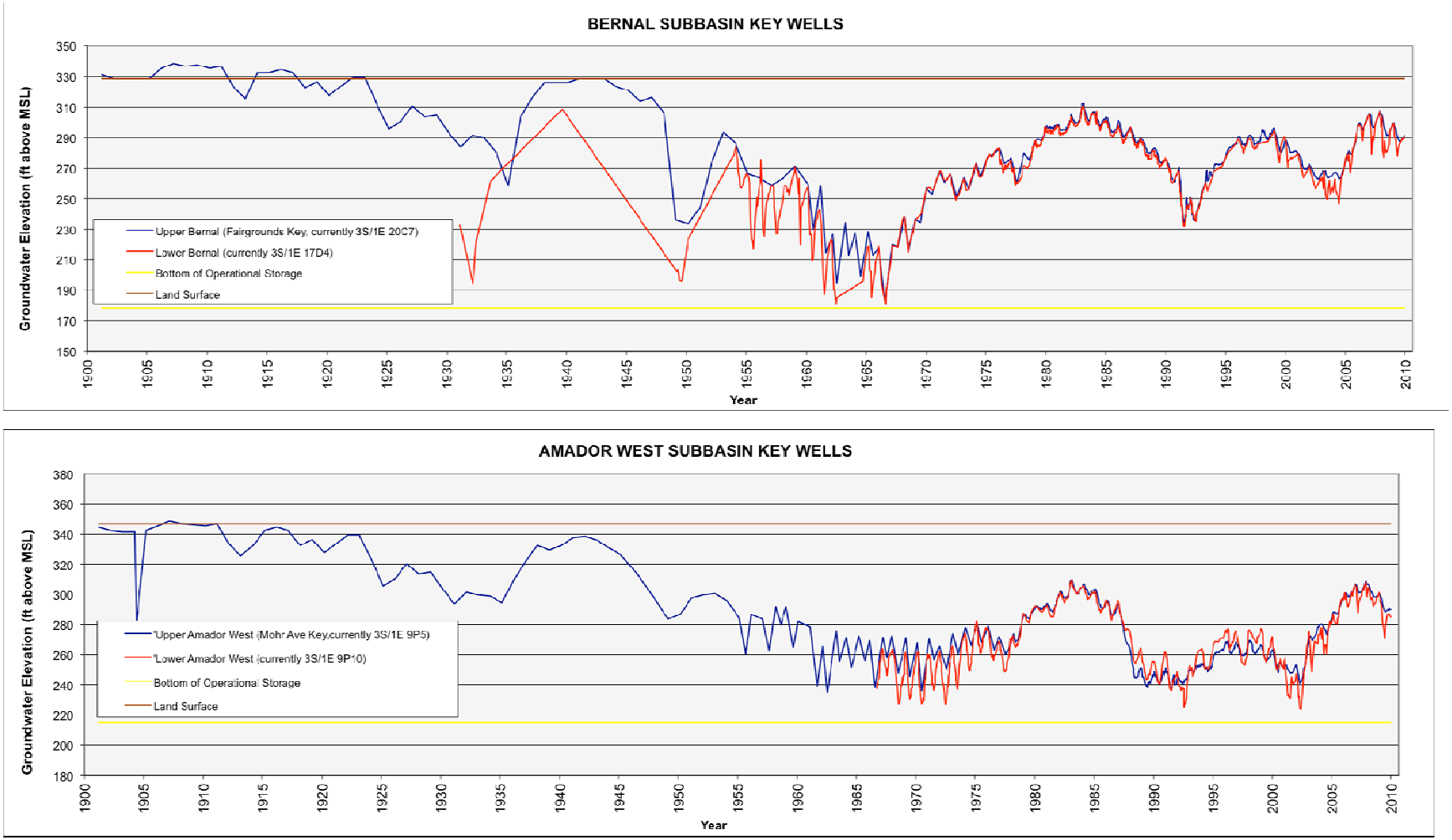


Figure 4-2. Western Portion of Main Basin Key Well Hydrographs[(a)]



[(a)] Source: Provided from Zone 7 records.

4.4 TRANSFER OPPORTUNITIES

Pleasanton currently does not have any potable water transfer agreements, nor does Pleasanton anticipate participating directly in any such transfer opportunities in the future. However, Zone 7 has entered into several long-term water transfer agreements that supplement its regular water supplies; other existing agreements also provide for additional storage capacity ("banking") outside of Zone 7's water service area. Furthermore, as part of its 2011 Water System Master Plan update, Zone 7 is evaluating the potential of meeting future water supply needs in the Livermore-Amador Valley in part through water transfer opportunities. Zone 7's existing transfer and storage agreements and potential water transfer opportunities are described below.

4.4.1 Historical Zone 7 Water Transfers

4.4.1.1 State Water Project Allocation

As discussed in Section 4.2.1, surface water imported from the SWP is by far Zone 7's largest water source, providing over 80% of Zone 7's long-term average water supply. Zone 7 first entered into a 75-year agreement with the Department of Water Resources (DWR), the operator of the SWP, in November 1961, as recorded in a document referred to as "Table A". As the SWP was expanded and as Zone 7 demands increased over the years, Zone 7's Table A amount was increased, reaching the amount of 46,000 acre-feet annually (AFA) by 1997.

In light of the 1987 to 1992 drought, Zone 7 completed a water system master plan in 1999. As a result of the effort, Zone 7 increased its supply from the SWP through a series of five permanent transfers. In December 1999, Zone 7 purchased 15,000 AFA and 7,000 AFA of Table A water from Lost Hills Water District and Berrenda Mesa Water District, respectively. In December 2000, Zone 7 purchased 10,000 AFA of Table A water from Belridge Water Storage District; Zone 7 acquired an additional 2,219 AFA from the same source in October 2003. Finally, Zone 7 purchased 400 AFA of water from the Tulare Lake Basin Water Storage District in 2003. Together, these transfers, when combined with its pre-1999 Table A amount, raised Zone 7's current Table A amount to 80,619 AFA.

4.4.1.2 Byron Bethany Irrigation District

Zone 7 entered into a water transfer demonstration project in 1994 with Byron Bethany Irrigation District (BBID), which provided a minimum supplemental water supply of 2,000 AFA. This was a five-year agreement with a potential to purchase up to 5,000 AFA. In 1998, Zone 7 and BBID agreed to convert the demonstration project into a long-term 15-year contract, renewable every five years up to a total of 30 years. Water purchased from the BBID is delivered to Zone 7 via the SBA. In August 2010, the contract was extended through 2030 with an option to extend through 2039 and beyond.

4.4.1.3 Yuba Accord

In 2008, Zone 7 entered into a contract with DWR to purchase additional water under the Lower Yuba River Accord (Yuba Accord). The contract, which expires in 2025, specifies four different conditions ("components") under which signatories can obtain water: component 1 is not available to Zone 7, components 2 and 3 are available during dry conditions, and component 4 is subject to Yuba County Water Agency determination of availability and may be unreliable. Consequently, components 2 and 3 water are primarily available under the Yuba Accord, and the associated amounts are relatively small: for

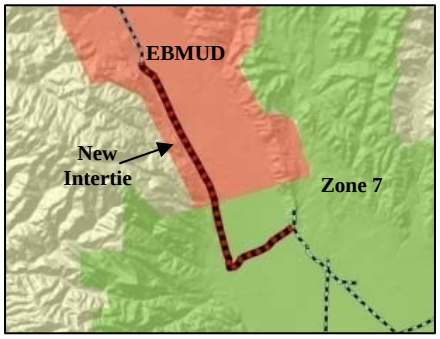
example, 159 AF in 2009 and approximately 1,000 AF in 2010. Zone 7 estimates a long-term average yield and median yield of 250 AFA and 145 AFA, respectively, for components 2 and 3.

4.4.2 Existing Zone 7 Storage Agreements

In addition to the above agreements for additional water sources, and its drought year storage in the local groundwater basin, Zone 7 has purchased dry year storage capacity in groundwater banking programs located in Kern County. Through an agreement with the Semitropic Water Storage District (Semitropic), Zone 7 has 78,000 AF of groundwater banking storage available to augment water supplies during drought conditions. During non-drought periods, Zone 7 can put up to 5,883 AFA into the Semitropic groundwater bank. Note that a 10% loss is associated with water put into Semitropic. During a drought year, Zone 7 has the ability to request up to 9,100 AF of pump back and any amount between 0 to 8,645 AF of exchange water; the availability of exchange water depends on projected SWP allocation. Pump back is water that is pumped out of the Semitropic aquifer and into the SWP system. Exchange water is water that is transferred between Zone 7 and Semitropic by adjusting the amounts of Table A water allocated between Zone 7 and Semitropic.

Similarly, Zone 7 has 120,000 AF of groundwater banking storage available with the Cawelo Water District (Cawelo). During non-drought periods, Zone 7 can store up to 5,000 AFA in the Cawelo bank.[7] During droughts, Zone 7 has the ability to request up to 10,000 AF of pump back from Cawelo.

4.4.3 Potential Zone 7 Water Transfer Opportunities



Zone 7 is reviewing intertie options with EBMUD.

Zone 7 is working with other water agencies in the San Francisco Bay Area to review the potential for purchasing long-term water transfers that could be wheeled to Zone 7 without using the Delta. Such water transfers would not only increase Zone 7's water supply but also diversify its water supply portfolio, thereby increasing overall system reliability.

The Bay Area Regional Desalination Project, as described in Section 4.5 below, could also potentially involve a long-term water transfer to Zone 7 of as much as 5,600 AFA, available under all hydrologic conditions, or only during normal/wet years. This water transfer would also likely involve wheeling through EBMUD's system via a new intertie.

4.5 DESALINATION WATER OPPORTUNITIES

Independently, the City of Pleasanton does not consider the development of a desalinated water system as a source of water within the planning horizon of this 2010 UWMP due to feasibility; this includes ocean water, brackish water, and groundwater desalination (as specified in Section 4.3, Zone 7 manages the groundwater basin). However, Zone 7 has been an official partner in the Bay Area Regional Desalination Project (BARDP) since June 2010. The BARDP is a joint effort amongst five Bay Area water agencies to evaluate the feasibility of a regional desalination facility. Zone 7 is evaluating the feasibility of receiving up to 5,600 AF from the BARDP under all hydrologic conditions, or only during normal/wet years. The source being considered is Suisun Bay.

[7] Zone 7 only gets storage credit for 50% of the water provided to Cawelo. Per the existing contract, Zone 7 can only send 10,000 AF in any given year to Cawelo; therefore, the maximum contractual credit is 5,000 AFA.

Zone 7 joined the BARDP in June 2010 to evaluate desalination opportunities.

Among other benefits, desalinated water offers the significant benefits of providing a drought-resistant supply to Zone 7 and diversifying Zone 7's water supply portfolio, thereby increasing system reliability. The most likely scenario is that water would be wheeled through EBMUD's distribution system; Zone 7 would receive treated water at a proposed intertie in the western part of its service area. As noted in the previous section, Zone 7's ability to receive water through the BARDP may require a water transfer agreement or new water right. The BARDP partners will be initiating the next phase of the project in mid-2011, which will include hydraulic modeling, modeling of impacts to the Delta, development of a green house gas reduction strategy, and public outreach.

4.6 RECYCLED WATER OPPORTUNITIES

At this time, the City of Pleasanton does not have a recycled water system. However, the City views the development and implementation of a recycled water program in the City as a desirable goal. The infrastructure for recycled water is scheduled for installation upon development of the new 124-acre Staples Ranch project, with 38 acres of irrigated landscape, located in east Pleasanton near I-580 at El Charro Road. Development of Staples Ranch has been approved by the City Council and is projected to begin in 2011. The use of recycled water in Pleasanton will be exclusively limited to irrigation meters (the City does not supply agricultural irrigation, and future recycled water supply will not be used for wildlife habitat enhancements, wetlands, industrial reuse, groundwater recharge, or indirect potable reuse). The projected irrigation demand for Staples Ranch is 140 AFA of recycled water once development is complete. Dublin San Ramon Services District (DSRSD) treats all of the City of Pleasanton's wastewater and produces recycled water; however, with Staples Ranch close proximity to the City of Livermore's recycled water treatment facility, recycled water for Staples Ranch could be provided through the Livermore Water Resources Division. DSRSD and East Bay Municipal Utility District (EBMUD) Joint Authority DSRSD-EBMUD Recycled Water Authority (DERWA) will likely supply recycled water to future phases of Pleasanton's recycled water system. Both the Livermore Water Resources Division and DERWA produce tertiary treated recycled water that meets the California Title 22 requirements for unrestricted reuse.

4.6.1 Phases of Recycled Water System Development

In 1998, Pleasanton investigated the engineering and economic feasibility of implementing a recycled water program through consultation with HydroScience Engineers to produce the City of Pleasanton Recycled Water Feasibility Study Report. It is Pleasanton's intent to bring recycled water to additional parts of its distribution area during the period covered by this 2010 UWMP. The projected phases of recycled water system development in Pleasanton are summarized below:

Phase 1: Phase 1 covers the installation of a recycled water infrastructure at Staples Ranch as described above. Development is projected for completion in 2013.

Phase 2: Phase 2 covers the pipelines required to service 51-acres of landscape irrigation demand to the Hacienda Business Park. Estimated to service between 50 to 75 existing potable water irrigation customers, with estimated annual average recycled water demand of 182 AFA. The City of Pleasanton is working to secure $20 million in order to complete phase 2 and 3. Phase 1 is expected to occur between 2013 and 2016. Funding will come from Federal Title 9 grant, surcharges on water rates (estimated to generate $500,000 - $600,000 per year), Proposition 84 funds, and if necessary Capital Improvement Program reserves or bonds.

Phase 3: Phase 3 will extend the recycled water infrastructure at Hacienda Business Park to neighboring Pleasanton Sports and Recreation Park and Pleasanton Tennis and Community Park, approximately 35-acres of irrigated landscape. Recycled water servicing the parks' irrigated demand will further reduce potable demand by an estimated 125 AFA upon completion of phase 3. Phase 3 is estimated to occur from 2015 to 2018. Funding secured for Phase 2 will also fund Phase 3.

Table 4-7 summarizes Pleasanton's potential future recycled water use. Figure 4-3 displays the locations of the each projected recycled water phase. Pleasanton's previous UWMP (2002) did not project recycled water use for 2010. Therefore a comparison of recycled water use estimates from the City's past UWMP cannot be included.

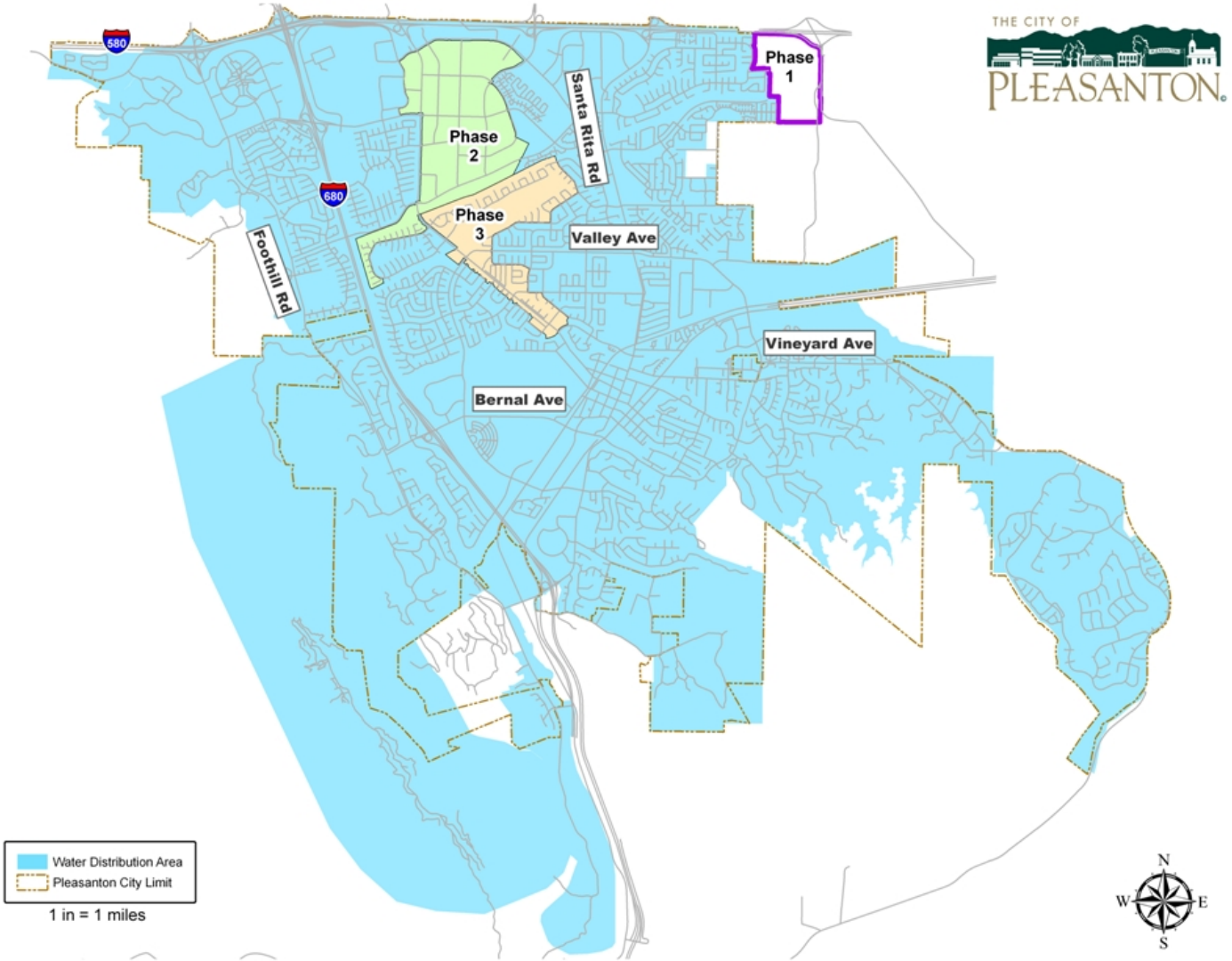
Table 4-7. Pleasanton's Potential Future Recycled Water Use (Acre-Feet)[(a)(b)]

Phase	Description	Feasibility	2015	2020	2025	2030
1	Staples Ranch	Approved	140	140	140	140
2	Hacienda Business Park	$12 million to be secured	-	182	182	182
3	Sports & Tennis Community Parks	$7 million to be secured	-	125	125	125
		Total	**140**	**447**	**447**	**447**

[(a)] Landscape irrigation is the exclusive user type for recycled water use under each phase.
[(b)] Availability of recycled water supply will not change under average, single-dry, and multiple-dry year conditions.

Although, agreements with the corresponding recycled water facilities are not final, the City of Pleasanton plans to offer recycled water to irrigation users within its recycled water distribution area at a lower cost than the potable water irrigation rate (approximately 10 to 20% less). This financial incentive will likely provide adequate stimulus to encourage the use of recycled water over potable water to all irrigation customers within the recycled water service area. Additionally, the connection fee to service new irrigation accounts will be set considerably lower for recycled water than potable water. All City irrigation meters (services strictly landscape irrigation) within the recycled water distribution area will be converted to recycled water.

Figure 4-3. Locations of Pleasanton Recycled Water Phases



4.6.2 Wastewater Collection and Disposal

As mentioned above, the wastewater generated within Pleasanton's service area is collected and treated by Dublin San Ramon Services District (DSRSD) at their Recycled Water Treatment Facilities (RWTF). RWTF treats all of Pleasanton's wastewater. Even though Pleasanton currently does not have the infrastructure to support recycled water, a portion of Pleasanton's wastewater is used by DERWA to service their recycled water customers. In 2010, Pleasanton generated 6,206 AF of wastewater, of which 44 AF was tertiary treated (using Filtration or Microfiltration, followed by Ultraviolet treatment) and subsequently used by DERWA. The remaining 6,162 AF received secondary treatment (treated by primary sedimentation, activated sludge secondary treatment, and chlorine disinfection) and was discharged to the San Francisco Bay via the Livermore Amador Valley Wastewater Management Agency pipeline (LAVWMA). Table 4-8 summarizes Pleasanton's 2005, 2009, and 2010 wastewater collection and non-recycled wastewater disposal.

Table 4-8. Pleasanton's Wastewater Collection, Treatment, and DERWA Recycled Water Use (Acre-Feet)[(a)]

Type of Wastewater	2005	2009	2010
Secondary treatment at RWTF - LAVWMA discharge	5,951	5,745	6,162
Tertiary treatment at RWTF - Recycled water used by DERWA	0	45	44

[(a)] Source for 2005/2009/2010 data provided by DSRSD.

4.6.3 Optimizing the Use of Recycled Water in Pleasanton

Optimizing the use of recycled water is an important part of a reliable long-term irrigation supply for the City of Pleasanton. The City has the political support from City Council and City Management for developing a robust recycled water program. City Council approved a recycled water surcharge fee in the 2010 water rate increase to help fund the program. Additionally, the City has applied for Federal grant funding through the Bay Area Recycled Water Coalition to supplement funding for the three-phase program. The City has made the commitment to price recycled water at 80 to 90 percent of potable water rates to help facilitate new and existing customer's entry into the program. The City is also negotiating currently with recycled water suppliers on both sides of the City in order to minimize the amount of dual distribution pipe necessary to get the program underway. Both recycled-water suppliers currently provide wastewater that meets California standards for recycled water in their own communities.

The major obstacle for existing customers is the cost of the connection fee and the cost to convert the existing system. This issue is of primary importance since the program's success relies on existing customers converting to recycled water. The City is currently working with Zone 7 and the Retailers to develop a program that provides incentives for connection fee credits for the existing potable water connection they already have.

The final obstacle is operations and training of City staff to operate the reclaimed system. The City currently has sufficient staff to develop and operate a recycled system. Furthermore, the City intends to convert as many of the city parks to recycled water as feasible to jump-start the program. There are 42 parks in the system total.

4.7 FUTURE WATER PROJECTS

4.7.1 Pleasanton's Future Water Projects

Pleasanton does not have any plans for major potable water supply projects. However, as described in Section 4.6 Pleasanton does plan to integrate recycled water into its water supply system. This will involve a large capital investment over the next ten years.

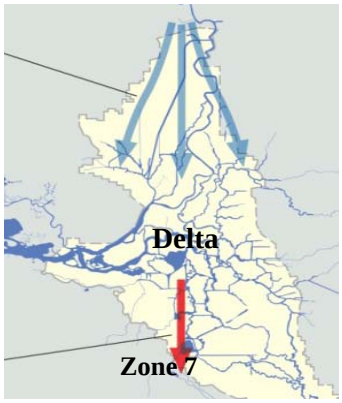
4.7.2 Zone 7's Future Water Projects

In November 2009, Zone 7 completed an evaluation of the ability of its existing water supplies and its existing facilities to meet water demands through build out of adopted general plans in the Livermore-Amador Valley. A revised analysis was also completed in July 2010.[8,9] Both analyses indicated that Zone 7's water supply is at risk and subject to a very uncertain future due to recent court rulings, biological opinions associated with the Sacramento-San Joaquin Delta (Delta), and climate change. To ensure that Zone 7 continues to meet water demands reliably in its service area through build out, Zone 7 plans to undertake a number of water supply projects and programs to augment its water supply, increase reliability, and reduce potable water demands over the next twenty years. The specific projects and programs to be implemented will be determined as part of the 2011 Water Supply Evaluation. Broadly, Zone 7's major efforts can be divided into long-term "Delta Fix", other major potential water supply projects (e.g., recycled water, desalinated water, and water transfers), and key water supply facility improvements, as presented below.

4.7.2.1 Long-Term "Delta Fix"

Zone 7 currently has a long-term contract with DWR for a maximum annual amount of 80,619 AF of Table A water from the SWP. As described previously, the SWP represents over 80% of Zone 7's supply and is therefore critical to the overall reliability of Zone 7's water supply system. Each year, DWR allocates a portion of this annual amount—up to 100%—depending on hydrologic conditions, DWR's operation of the SWP, and legal and environmental constraints.

From 2005 to 2009, DWR reduced the projected long-term average allocation of Table A water from approximately 76% to 60% due to projected impacts associated with pumping restrictions in the Delta and climate change. This decrease in reliability from the SWP has reduced Zone 7's sustainable water supplies by approximately 12,900 acre-feet (AF).[10]



Zone 7 is part of the BDCP and DHCCP, which are intended to develop solutions to increase

As a contractor of the SWP, Zone 7 is actively engaged with DWR and other water agencies, environmental groups, and regulators to develop the Bay Delta Conservation Plan (BDCP) and the Delta Habitat Conservation and Conveyance Plan (DHCCP). Notably, Zone 7's General Manager is a member of the DHCCP Executive Committee. The goal of the BDCP is to provide for both species/habitat protection and improved reliability of water supplies from the Delta. The purpose of the DHCCP is to develop alternatives for conveying SWP (and Central Valley Project) water across the Delta in an environmentally sound manner. The DHCCP will develop an Environmental Impact Report

[8] Zone 7 Water Agency, 2009. Interoffice Memo – Water Supply Update. November 18.
[9] Zone 7 Water Agency, 2010. Water System Master Plan Update to the Zone 7 Board of Directors. July 21.
[10] Reduction = 80,619 AF x (76% - 60%)

(EIR)/Environmental Impact Study (EIS), along with the preliminary design needed to support a decision and ultimately to construct alternative Delta Conveyance facilities that would result in increased reliability. Current plans indicate a goal of having a new Delta conveyance system in place by around 2025.

4.7.2.2 Other Major Potential Water Supply Projects

- Recycled Water

Zone 7 does not currently produce or distribute recycled water directly; however, two retailers in the Livermore-Amador Valley (City of Livermore [Livermore] and Dublin San Ramon Services District [DSRSD]) have developed significant recycled water systems, and, as noted above, Pleasanton is currently pursuing a recycled water program. Recycled water is, and will continue to be, an important component of the water supply portfolio for the Livermore-Amador Valley as it represents a reliable drought-resistant supply.

As part of the WSMP update and Zone 7's support for recycled water use, Zone 7 has been working closely with Pleasanton and the other retailers in reviewing the potential for increased recycled water use within the Livermore-Amador Valley. As part of this review, Zone 7 will also ensure that water quality goals for the Main Basin are achieved and additional mitigation is provided if necessary. Zone 7's Salt Management Plan will be updated to reflect any relevant changes.

- Long-Term or Permanent Water Transfers

Zone 7 is evaluating the potential for purchasing long-term water transfers that could be wheeled to Zone 7 without using the Delta, as previously described in Section 4.4.3.

- Desalination

Together with four other San Francisco Bay Area water agencies, Zone 7 is evaluating the feasibility of a regional desalination facility to augment water supplies. For more details, see Section 4.5.

4.7.2.3 Key Water Supply Facility Improvements

In addition to the procurement of new water supplies, Zone 7 is also in the process of improving its facilities to reduce system losses and increase capacity. Zone 7 plans to undertake an investigation to reduce its unaccounted-for water from approximately 4% to 2% of its total system demand. Key projects designed to increase system capacity include expansion of surface water treatment capacity, increased artificial recharge via the Chain of Lakes, and installation of additional groundwater wells, as described below.

Zone 7 is evaluating the potential for either building a new water treatment plant or expanding an existing water treatment plant.

- Expansion of Surface Water Treatment Capacity

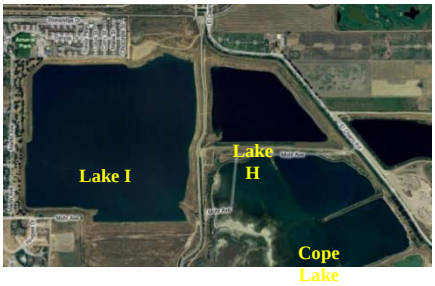
Between 2004 and 2007, Zone 7 completed design of a new water treatment plant, the Altamont Water Treatment Plant (AWTP). Based on a slower than anticipated growth

in M&I water demands and concerns over capital and energy costs, Zone 7 decided to conduct a peer review of the proposed AWTP site and treatment process before proceeding with construction. The peer review was completed in December 2009.[11] Based on the analysis completed, the only viable alternative to the original AWTP site was an expansion of Zone 7's existing Patterson Pass Water Treatment Plant (PPWTP). The analysis also indicated that economics alone would not necessarily determine whether expanding the PPWTP is better for Zone 7's long-term needs because the difference in costs between the two options is within the contingency estimates typically used for planning purposes for Zone 7's Capital Improvement Program (CIP).

Other factors that Zone 7 will evaluate, as part of the WSMP update, will likely drive the decision to either construct the proposed AWTP, expand the PPWTP, or neither. The major factors influencing this decision include anticipated M&I water demands in the Livermore-Amador Valley (including accounting for 20% conservation by 2020 and peak day demands), capacity available in the South Bay Aqueduct (SBA), and revision of existing policies and criteria.

- Increased Artificial Recharge via the Chain of Lakes

The Chain of Lakes refers to a series of ten mined out or active gravel quarry pits that have been or will be converted into surface water storage facilities and/or groundwater recharge basins once mining has been completed. The ten quarry pits or lakes are named Cope Lake, and Lakes A through I. Zone 7 currently owns only Cope Lake and Lake I, but expects to take ownership of Lake H sometime within the next five years. It is anticipated that the other seven lakes will not be dedicated to Zone 7 until after 2030.



Zone 7 is evaluating enhanced artificial recharge using Lakes H and I.

Once Zone 7 owns both Lakes H and I, Zone 7 will have the ability to direct surface water, with a new diversion structure, into Lake H. Water would then flow into Lake I through an existing conduit and then recharge into the Main Basin. This enhanced recharge will greatly improve the likelihood of having sufficient water in the local groundwater basin to meet projected water demands during drought conditions. The addition of surface water to the lakes will also help offset evaporative losses from the groundwater basin due to the existence of the gravel quarry pits, and help protect the groundwater basin from salt build-up.

- Additional Groundwater Wells

Zone 7 plans to construct several new municipal water supply wells to enhance its ability to optimize pumping from the groundwater basin and to meet demands during dry years. In addition, with the new wells, Zone 7 will be better able to manage salt loading in the Main Basin, delivered water quality blending, and peak-day demands.

[11] WQTS, 2009. Peer Review of the Altamont Water Treatment Plant Site and Treatment Process Report.

5. WATER SUPPLY RELIABILITY AND WATER SHORTAGE CONTINGENCY PLANNING

The purpose of this chapter is to discuss the reliability of the water supply of the City of Pleasanton (Pleasanton) and to present Pleasanton's contingency plan in case of shortages. The first section will focus on the reliability of the water supply from Zone 7 Water Agency (Zone 7)—the source for approximately 80% of Pleasanton's water supply—followed by discussions of the reliability of Pleasanton's groundwater pumping quota and future recycled water supply. Water quality issues that affect water supply reliability are then identified. To summarize the reliability of Pleasanton's water system, a comparison of demands versus supplies over the next twenty years is tabulated under various hydrologic conditions. Finally, Pleasanton's Water Shortage Contingency Plan is presented in Appendix G.

The quantity of supply available from different water supply sources can vary from one year to the next depending on hydrologic conditions. Historical data, where available, were therefore used to develop a projected yield for each water supply source under three conditions: (1) normal water year, (2) single dry year, and (3) multiple dry years. In accordance with the Department of Water Resources' (DWR's) 2010 Urban Water Management Plan (UWMP) Guidebook[12], each condition was defined as follows:

- *Normal[13] Water Year:* The year in the historical sequence most closely representing median runoff or allocation levels and patterns.
- *Single-Dry Year:* The year with the lowest annual runoff or allocation in the historical sequence.
- *Multiple-Dry Year:* The lowest average runoff or allocation for a consecutive 5-year period in the historical sequence.

5.1 RELIABILITY OF ZONE 7'S WATER SUPPLY

As described in Chapter 4, Zone 7's water supply system consists of a combination of water supplies and water storage facilities. The following sections will first describe Zone 7's reliability policy with regards to water provision to Pleasanton and its other customers, and then discuss the reliability of Zone 7's water supply resources under different hydrologic conditions.

5.1.1 Zone 7 Reliability Policy

On August 18, 2004, Zone 7 adopted the Reliability Policy for Municipal and Industrial (M&I) Water Supplies (Resolution 04-2662).[14] This policy guides the management of Zone 7's M&I water supplies as well as its capital improvement program (CIP) through two goals:

- Goal 1: Meet 100% of M&I water demands over the next 20 years through average, single dry, and multiple dry years.[15]
- Goal 2: Meet 75% of maximum day demands with a major facility out of service.

[12] Department of Water Resources, 2011. 2010 UWMP Guidebook.
[13] Also referred to as "average" in the 2010 UWMP Guidebook.
[14] A copy of Resolution 04-2662 is provided in Appendix H.
[15] Paraphrased – see Appendix G for actual text.

Zone 7's reliability policy will subsequently be reviewed based on the findings from the WSE. At this time, Pleasanton's 2010 UWMP has been developed based on Zone 7's 100% reliability policy.

5.1.2 Reliability of Zone 7 Water Supplies

The Zone 7 Water Agency 2010 Urban Water Management Plan (Zone 7 2010 UWMP) includes detailed information on the reliability of Zone 7's various water supply and storage options. The tables below summarize this information for all of Zone 7's water resources—both existing and planned—and present the amounts available to Pleasanton. As previously noted, Pleasanton is one of four retailers served by Zone 7; in addition, Zone 7 directly serves agricultural and institutional customers.

The basis of water year data for Zone 7's various water supply sources and storage options are presented in Table 5-1.

Table 5-1. Basis of Water Year Data for Zone 7's Water Supply Sources and Storage Options[a]

Water Source	Base Years		
	Normal Year	Single-Dry Year	Multiple-Dry Years
Arroyo del Valle	1932	1977	1987-1991
SWP – Table A	1942	1977	1988-1992
SWP – Carryover	1942	1977	1988-1992
SWP – Yuba Accord	1922-2003[b]	1977	1988-1992
BBID[c]	1942	1977	1988-1992
Storage:			
Main Basin[c]	1942	1977	1988-1992
Semitropic[c]	1942	1977	1988-1992
Cawelo[c]	1942	1977	1988-1992

[a] For more details, see Zone 2010 UWMP. Zone 7 used a five-year drought scenario in its analysis to be more conservative than the minimum three-year requirement.
[b] Based on the median yield between 1922 and 2003.
[c] Chosen to match those of the SWP.

Table 5-2 presents a summary of Zone 7's *total* water supply reliability based on hydrologic records and existing and planned supplies and storage options. These supplies represent the amounts of water available to all of Zone 7's customers (urban water retailers, direct retail customers, and untreated [agricultural] water customers). Given Zone 7's 100% reliability policy, Pleasanton's portion of Zone 7's supply reliability is equivalent to Pleasanton's demands from Zone 7. Based on demand projections in the Zone 7 2010 UWMP, Pleasanton's demands average 31% of Zone 7 customer demands from 2015 through 2030.

The reliability of Zone 7's water supply rests heavily on the reliability of the State Water Project (SWP). This is because the SWP provides over 80% of the water that Zone 7 supplies to its customers. The key factors that affect the reliability of the SWP include: hydrologic conditions, legal findings ("biological opinions") related to threatened/endangered species in the Delta, potential climate change impacts, vulnerability of infrastructure to natural disasters such as earthquakes, and levee failures. Plans are under development to address the reliability challenges of the SWP; these plans are described under "Delta Fix" in Section 4.7.2.1.

Table 5-2. Summary of Zone 7's *Total* Water Supply Reliability and Pleasanton's Estimated Reliability[a]

Water Source	Yields (Acre-Feet Annually)		
	Normal Year[b]	**Single-Dry Year[c]**	**Multiple-Dry Years[d]**
Existing Water Supplies			
Arroyo del Valle	7,100	0	150 - 4,400
SWP – Table A	51,400	8,000	15,700 - 47,800
SWP – Carryover	0	20,200	20,200 - 27,600
SWP – Yuba Accord	145	676	676
BBID	4,500	2,000	2,000
From storage:			
Main Basin	9,200	26,200	14,000
Semitropic	0	9,100	9,600 - 13,600
Cawelo	0	10,000	10,000
Planned New Water Supplies[e]	10,500	6,100	6,100
Zone 7 Total Reliability	82,845	82,276	78,426-126,176
As % of Normal Year:		*99%*	*95-152%*
Pleasanton Reliability[f]	13,200-14,500	13,200-14,500	13,200-14,500
As % of Normal Year:		*100%*	*100%*

[a] Rounded to the nearest 100 acre-feet.
[b] Based on median runoff or allocation levels and patterns.
[c] Based on the lowest annual runoff or allocation in the historical sequence.
[d] Based on the lowest runoff or allocation for a consecutive 5-year period in the historical sequence.
[e] See Section 4.7 for a discussion of Zone 7's potential projects and programs to acquire new water supplies.
[f] Based on Zone 7's 100% reliability policy, these values are equal to Pleasanton's demands from Zone 7 for 2015 through 2030 (the demands do not include Pleasanton's groundwater pumping quota).

5.2 RELIABILITY OF GROUNDWATER

As noted in Section 4.3, Pleasanton has a groundwater-pumping quota (GPQ) of 3,500 acre-feet annually (AFA) from the Main Basin, which comprises approximately 20% of its water supply. Pleasanton may also carry over any unused portion of its annual GPQ up to a total of 700 acre-feet. Groundwater pumping quotas for the Main Basin—which have been allocated to California Water Service Company, Dublin San Ramon Services District, and the City of Livermore in addition to Pleasanton—were determined based on the natural sustainable yield of the Main Basin (see Section 4.2.4). As such, Pleasanton's groundwater supply from its GPQ is considered reliable under all hydrologic conditions as summarized in Table 5-3 below.

Groundwater pumping quotas for the Main Basin total 7,245 AFA.

Table 5-3. Supply Reliability of Pleasanton's Groundwater Pumping Quota

Water Source	Yields (Acre-Feet Annually)		
	Normal Year	Single-Dry Year	Multiple-Dry Years
Main Basin	3,500	3,500	3,500
	As % of Normal Year:	*100%*	*100%*

5.3 RELIABILITY OF FUTURE RECYCLED WATER SUPPLY

The future development of a recycled water system, therefore recycled water supplies, within Pleasanton's service area will enhance Pleasanton's overall water reliability. Recycled water supplies are essentially 100 percent reliable during drought events, with the added benefit of reducing potable water demands within the service area. The current retailers that could potentially provide recycled water to the City of Pleasanton, DSRSD and the City of Livermore, are not maximizing the amount of recycled water that they can currently produce, even in a multiple dry year scenario. Additionally, they both have the capability to expand their treatment system to increase their capacity to supply Pleasanton the projected demands through all three phases of the recycled water plan (as described in Section 4.6.1)

Currently, there are no specific legal, environmental, water quality, or climatic factors that could interrupt a consistent level of recycled water use once the program begins within the scope of this 2010 UWMP. However, as previously noted, Zone 7 will continue to manage the groundwater basin to minimize any salt or nutrient loading impacts from recycled water.

5.4 WATER QUALITY ISSUES

5.4.1 Zone 7 Water Supply

5.4.1.1 State Water Project and BBID

Water supplies from the State Water Project (SWP) and the Byron Bethany Irrigation District (BBID)—which together make up approximately 90% of Zone 7's incoming supply—flow through the Sacramento-San Joaquin Delta (Delta) before they are conveyed to Zone 7's facilities. Water quality issues that affect the Delta are:

- *taste and odor (T&O)* – primarily a problem in the warmer months, when algal blooms may be present. It can affect supplies from the Delta and from Lake Del Valle. Algae produce geosmin and 2-methylisoborneol (MIB), which are key taste and odor-causing compounds in surface water supply. Zone 7 currently treats T&O using powdered activated carbon (PAC), which is of limited effectiveness under high levels of geosmin and MIB. High levels of T&O in surface water require a switch to groundwater supplies.
- *total and dissolved organic carbon (TOC/DOC*) – levels of organic carbon affect the amounts of coagulant and disinfectant chemicals used at Zone 7's water treatment plants (WTPs), and therefore result in higher costs. In addition, the formation of disinfectant byproducts is dependent upon the amount of TOC/DOC. TOC/DOC levels have historically not affected the amount of imported surface water supply available to Zone 7.

- *turbidity* – like TOC/DOC, turbidity affects the amounts of chemicals used at the WTPs, and Zone 7's ability to meet drinking water standards. Turbidity levels have historically not affected the amount of imported surface water supply available to Zone 7.
- *salinity or total dissolved solids (TDS)* – salinity is a water quality parameter that has significant impacts on SWP operations and the availability of water. To meet the salinity objectives in the Delta, water exports from the Delta may be restricted, reducing the amount of water supply available during certain times of the year.

Zone 7 and other SWP contractors are currently working with the Department of Water Resources and other key stakeholders in the development of a "Delta Fix" to address the challenges—including water quality issues—related to the transport of water through the Delta. The Delta Habitat Conservation and Conveyance Program (DHCCP), in conjunction with the Bay Delta Conservation Plan (BDCP), are expected to increase the reliability and quality of supplies from the Delta.

To protect water quality once the water traveling through the Delta reaches the South Bay Aqueduct (SBA), recipients of water from the SBA (Alameda County Water District, Santa Clara Valley Water District, and Zone 7; known collectively as the SBA Contractors) developed the SBA Watershed Protection Program Plan in 2008[16]. The SBA Watershed Protection Program Plan is designed to protect the SBA system, including Lake Del Valle and Bethany Reservoir, from identified potential contaminant sources (e.g., septic tanks) for urban water supply purposes, as well as agricultural, recreational, and environmental uses.

5.4.1.2 Arroyo del Valle

Runoff from the Arroyo del Valle watershed above Lake Del Valle is stored in Lake Del Valle, which is also used to store SWP imported surface water deliveries. In general, the water quality of Arroyo del Valle runoff is good, and does not affect the reliability of this water supply. As noted above, water collected from the local watershed is protected under the SBA Watershed Protection Program Plan. Taste and odor can sometimes be a problem for Lake Del Valle as noted above; under extreme conditions, a switch to groundwater supplies may be required.

5.4.1.3 Main Basin

The Main Basin is characterized by relatively good quality groundwater that meets all state and federal drinking water standards. Groundwater is chloraminated to maintain consistent disinfectant residual in the distribution system and to preserve delivered water quality. However, there has been a slow degradation of groundwater quality as evidenced by rising Total Dissolved Solids (TDS) and hardness levels over the last few decades. To address this problem, Zone 7 developed a Salt Management Plan (SMP)[17], which was approved by the Regional Water Quality Control Board in 2004. As part of this SMP, Zone 7 completed construction of a wellhead demineralization facility (Mocho Groundwater Demineralization Facility) in 2009. Employing a reverse osmosis membrane-based treatment system, this facility simultaneously allows for the removal and export of salts[18] from the Main Basin and the delivery to customers of treated water with reduced TDS and hardness levels.

[16] ESA, 2008. SBA Watershed Protection Program Plan.
[17] Zone 7 Water Agency, 2004. Salt Management Plan.
[18] The brine concentrate resulting from the treatment system is exported to the San Francisco Bay via a regional wastewater export pipeline.

Zone 7 is planning to install a second groundwater demineralization facility to remove additional salts from the Main Basin. The timing of this installation will be determined based on the performance of the Mocho Groundwater Demineralization Facility.

5.4.1.4 Non-Local Storage

The presence of elevated levels of arsenic in a portion of the Semitropic Water Storage District (Semitropic) groundwater bank is a water quality issue that needs to be addressed. During a drought, Zone 7 will take an additional amount of water from the SWP equal to the amount requested from Semitropic. Semitropic will then replace this water downstream on behalf of Zone 7 by pumping water into the California Aqueduct for use by contractors downstream of Semitropic; the water quality of this "pump-in" water will therefore have an effect on these contractors. Arsenic criteria were established for this pump-in by the DWR Facilitation Group to mitigate any impacts to the downstream contractors, and DWR, Semitropic, and the banking partners have been testing arsenic treatment options since 2008. While the presence of arsenic in the Semitropic groundwater bank is likely to increase the cost of this water storage option, it is not likely to affect its overall reliability.

5.4.2 Groundwater

Water quality issues related to the groundwater pumped from the Main Basin directly by Pleasanton are described in Section 5.4.1.3.

5.4.3 Recycled Water

All future recycled water supplies must meet California Title 22 requirements for water quality. There are no known or projected water quality issues in regards to recycled water from City of Livermore or DSRSD during the scope of this UWMP.

5.5 SUMMARY OF ISSUES AFFECTING SUPPLY RELIABILITY

Table 5-4 summarizes the various factors that could result in inconsistency of supply for the City of Pleasanton.

Table 5-4. Factors Resulting in Inconsistency of Supply*

Water Supply Sources	Legal	Environmental	Water Quality	Climatic	Notes
Zone 7 Water Agency					
Existing Water Supplies:					
Arroyo del Valle	x	x	x	x	This supply is subject to water rights permit and its legal stipulations. Environmental factors (e.g. habitat) are one of the considerations of water rights permits. Water quality is primarily an issue during storage in Lake Del Valle, where algal blooms can occur; however, the quality of in-stream flows may also have an impact. Climate change may have an impact on hydrologic conditions and the quality and timing of water availability.
SWP – Table A	x	x	x	x	Legal & environmental issues significantly affect the availability of this supply. The presence of endangered & threatened species in the Delta, have had significant impacts on supply reliability. Salt intrusion into the Delta is also an important factor that can affect water deliveries. In case of levee failures, high levels of organic carbon can impact supplies traveling through the Delta. Climate change may have an impact on hydrologic conditions & water availability; furthermore, sea level rise would affect operations of SWP facilities. Note that fish-related restrictions & potential climate change impacts have been incorporated into DWR's reliability estimates for the SWP, and therefore into this UWMP as well.
SWP – Carryover					
SWP – Yuba Accord					
BBID	x	x	x	x	A minimum amount of water supply is guaranteed under the BBID contract; however, the availability of water is potentially subject to new legal requirements related to environmental, water quality, or other issues. The availability of additional water in the future may also be affected by changing hydrologic conditions resulting from climate change.
From Storage:					
Main Basin	x	x	x	x	The availability of water from the Main Basin is primarily subject to the availability of excess water supplies from the various sources during normal/wet years, and is therefore also affected y the factors as described above. Water quality issues within the Main Basin, such as elevated salts, impact costs but are not likely to affect the overall reliability.
Semitropic	x	x	x	x	The availability of water from storage is subject to the availability of excess water supplies from various sources during normal/wet years, and is therefore also affected by the factors as described above. In addition, there continues to be legal
Cawelo					

					challenges to the Monterey Amendment to the SWP Contracts, which include the water banking programs in Kern County. Water quality issues within the groundwater basin, such as the presence of arsenic in the Semitropic groundwater bank, impact costs but are not likely to affect reliability.
Planned Supplies					In pursuing new water supply options, Zone 7 will mitigate legal, environmental, water quality, and climatic risks to the extent possible; the specific factors affecting the reliability of the future supplies are unknown at the time.
Pleasanton Groundwater					Pleasanton's groundwater pumping quota was determined based on the sustainability of the Main Basin; therefore, its reliability is not expected to be significantly affected by the factors listed here.

*Potential limitations on the supply arising from the factors listed in the table have not been quantified.

5.6 WATER SHORTAGE CONTINGENCY PLANNING

The City of Pleasanton developed its first Water Shortage Ordinance in 1991. In May of 2009, Pleasanton City Council approved the Tri-Valley Water Retailers Water Shortage Contingency Plan (Water Shortage Contingency Plan), which is a cooperative plan adopted together with the Retailers). The Water Shortage Contingency Plan acts as the standing plan, defining stages and levels of water rationing, along with expected water conservation measures under each stage. Areas not covered under this plan, namely water use prohibitions, are governed under the original Water Shortage Ordinance. Pleasanton's Water Shortage Contingency Plan and Ordinance go into effect upon resolution of the legislative bodies of the public members of the Retailers group, or direction from City Council, the Director of Emergency Services (City Manager), or the Director of Operations Services.

Recommendation for Plan activation may stem from the following three situations:

- A request from Zone 7 to the Retailers to reduce consumption, most likely including a specific reduction goal.
- As a result of the collective consideration of the Retailer staff that would also include a recommended reduction goal.
- A decision by one or more Retailers, which may or may not include a reduction goal.

A copy of the 1991 Water Shortage Ordinance, followed by the Tri-Valley Retailers Water Shortage Contingency Plan can be found in Appendix G.

5.6.1 Stages of Action

The Water Shortage Contingency Plan uses a staged scheme to plan for water shortages of increasing severity. Table 5-5 summarizes the four stages of reduction in water use, and the definition of implementation of each stage is discussed below. Stage 4 would be declared in the event a water use reduction of up to 50 percent were required.

Table 5-5. City of Pleasanton Water Shortage Contingency Plan Stages

Stage	Expected Reduction	Voluntary or Mandatory
1	Up to 20%	Voluntary
2	Up to 20%	Voluntary or Mandatory
3	Up to 35%	Mandatory
4	35% or more	Mandatory

5.6.1.1 Stage 1 – Minimal Reduction

Stage 1 of the Water Shortage Contingency Plan is considered appropriate for declaration under conditions where there is sufficient uncertainty concerning water supplies for the year or the next few years that it would be prudent for water customers to conserve local water supplies so the supplies may be used to meet future year water demand.

5.6.1.2 Stage 2 – Moderate Reduction

Stage 2 is considered appropriate for declaration under conditions where there are definable events that lead to a reasonable conclusion that in the current and/or upcoming water years, water supplies may not be adequate to meet all customer water demands.

5.6.1.3 Stage 3 – Severe Reduction

Stage 3 is considered appropriate for declaration under conditions where there are definable events that lead to a firm conclusion that in the current water year, water supplies will not be adequate to meet customers' water demand.

5.6.1.4 Stage 4 – Critical Reduction

Stage 4 is considered appropriate for declaration under conditions where a Stage 3 shortage had been in effect and the reduction goal is not being met or new definable events require increasing the reduction goal.

5.6.2 Catastrophic Water Supply Interruption

The City's Emergency Water Plan (revised May 2010) specifies City Council, the Director of Emergency Services (City Manager), or the Director of Operations Services has the power to proclaim a Local Water Emergency. As defined in the City's Water Shortage Contingency Plan, if there were a major failure of supply, storage or facility distribution, a declaration of mandatory water use restrictions would be

necessary in designated affected areas, (expected reduction would vary in response to the specific situation).

The City will also follow the lead of Zone 7 or the State of California, during a major catastrophe or drought period. When Zone 7 announces a curtailment in water delivers the City will assess the impact on the City supplies and decide which of the above stages is called for. The City will monitor the situation closely, both supply and demand, and carefully select the right stage to achieve the desired result, and move from one stage to the next if the situation worsens, and lessen rationing when it subsides. As mentioned in Section 2.4.3, Pleasanton has two emergency interties with DSRSD to provide supplies during an emergency.

5.6.2.1 Area-Wide Electrical Power Failure

If electrical power were not available for a prolonged period of time, the City of Pleasanton would continue to receive water from a number of sources. Pleasanton could receive treated water by gravity flow. The water turnouts are designed to flow by gravity from the treatment plant clear wells. Additionally, water from emergency interties with DSRSD could also supply water into the service area when necessary.

Pleasanton also has the capability to pump groundwater from emergency generators at its well sites.

5.6.2.2 Earthquake

Water system infrastructure, including pump stations, storage tanks, and pipelines, can be damaged during a strong earthquake. Pleasanton's facilities, as well as Zone 7's facilities, have been constructed in accordance with the applicable building codes to minimize potential damage during an earthquake. Additionally, approximately 85% of Pleasanton's water infrastructure has been earthquake reinforced and no area within the service area is solely dependent on non-earthquake reinforced infrastructure. If damage occurred as the result of a strong earthquake, there are multiple turnouts from Zone 7 supply system to ensure Pleasanton can continue to receive water supply from Zone 7 if damage occurred along a specific section affecting a turnout. Furthermore, the pipelines were built in looped arterial design, to ensure there is more than one route for water flow.

5.6.3 Water Use Prohibitions

During the times any water shortage stage is in effect, the following water uses are considered unlawful for any potable City of Pleasanton water customer, as defined by the City's Water Shortage Ordinance:

- Use of potable water between 10:00 a.m. and 4:00 p.m. to irrigate grass, lawns, groundcover, shrubbery, crops, vegetation, and trees; or the use of potable water in such a manner as to result in runoff for more than five minutes.

- Use of potable water to wash down sidewalks, walkways, driveways, parking lots, open ground or other hard surface areas by the direct application of water thereto (including street cleaning).

- Allowing potable water to escape from breaks within the customer's plumbing system for more than eight hours after the customer is notified or discovers the break.

- Use of potable water for any purpose in excess of the customer's allocation.

5.6.4 Consumption Reduction Methods

Water conservation measures to be implemented at each stage of water shortage declaration are outlined within the Water Shortage Contingency Plan. Table 5-6 shows the water conservation measures for each stage. The conservation measures are additive in that each stage includes all of the conservation measures of the previous stages.

Table 5-6. Expected Water Conservation Measures During Water Shortage Stages

Conservation Measure	Normal	Stage			
		1	2	3	4
Landscape Irrigation (SFR, MFR, CII)[a]					
Shut-off nozzles; no runoff, overspray; or saturation of landscape	X	X	X	X	X
Sprinklers 9 p.m. to 6 a.m.; train/educate regarding water conserving irrigation systems & dry climate plants		X			
Irrigate only on odd/even days (per odd/even address); turn off auto sprinklers when raining			X		
Hand water only on Saturday or Sunday				X	
No turf irrigation, hand water only on Saturday or Sunday					X
No irrigation					
Public Swimming Pools (SFR, MFR, CII)					
No restrictions [b]	X				
Must be leak proof			X		
Cover when not in use; equip with recirculation pump				X	
Drain and refill only for health or structural needs					X
Private Swimming Pools, Spas, Fountains, Ponds (SFR, MFR, CII)					
No restrictions	X				
Must be leak proof		X			
Cover when not in use; equip with recirculation pump			X		
Prohibit potable water use for ornamental ponds & fountains; drain and refill only for health or structural needs				X	
Prohibit draining and refilling and initial filling of swimming pools & spas					X
Private Pavement (SFR, MFR, CII)					
Use hose with shut-off nozzle	X				
Use broom and bucket		X	X		
Health need necessary to wash pavement				X	X
Private Exterior Washing of Autos, Boats, & Buildings (SFR, MFR, CII)					
No restrictions	X				
Use hose with shut-off nozzle & do so on permeable surface if possible		X			
Use bucket, no more than once a month; encourage use of commercial wash services that recycle water			X		
Only wash vehicles at commercial establishments that recycle				X	

water; use broom on buildings & pavement					
No washing with potable water					X
New or Additional Service (SFR, MFR, CII)					
Allowed	X	X	X		
Subject to SB610 definition				X	X
Water for Construction (CII)					
No restrictions	X				
Use recycled water if cost effective; otherwise potable water use OK		X	X		
Only recycled water (potable can be used for public health & safety projects)				X	X
Restaurants (CII)					
Offer rebates on low flow rinse nozzles; post water conservation messages on bathroom mirrors	X	X			
Require use of low flow rinse nozzles; require they serve water only on request			X	X	X
Laundromats (CII)					
No restrictions	X	X	X	X	
Turn off water if not efficient washing machines					X

[a] SFR = single-family residents; MFR = multi-family residents; CII = commercial industrial and institutional customers.
[b] Discrepancy compared to attached Water Shortage Contingency Plan reflects correction made to misprint within WSCP.

To encourage compliance under mandatory rationing, the City's Water Shortage Ordinance specifies three levels of financial penalties to be set by City Council for violations of the ordinance. This action would be implemented if a water emergency were declared requiring mandatory rationing.

5.6.5 Revenue and Expenditure Impacts

During periods of water shortage and reduced customer consumption, revenue is expected to decrease due to decreased demand for water. Some expenditures are also expected to decrease due to the decreased demand for water; however, expenditures for customer service activities are anticipated to increase as a result of implementing water conservation measures. To compensate for lost revenue and possible increase in expenditures, the City may need to raise water rates temporarily with the addition of a drought surcharge.

The City of Pleasanton's financial policies provide for long-term financial stability with the water utility. During the development of this UWMP, the water utility is sound financially for funding both the operation of the utility, and the repair and replacement of the water infrastructure. The City's policy is to maintain a minimum balance of $6,000,000 in each fund. This balance provides sufficient reserves to deal with any unforeseen catastrophic event. The following Table 5-7 presents the balances in the Water Enterprise funds as of June 30, 2010.

Table 5-7. City of Pleasanton's Water Enterprise Fund Balances; June 30, 2010

Water Enterprise Fund	Balance
Water Maintenance and Operation Fund	$7,246,459
Repair and Replacement Fund	$7,042,858
Total	$14,942,288

The City also has two additional funding sources that can be used in time of need by the Water Enterprise Fund. The first is the Economic Stability Fund, which is kept at a $5,000,000 balance. The second, Emergency Reserve Fund is $12,000,000 and can be used in cases of emergency situations. The City's General Fund would loan the Water Fund the necessary money needed and the Water Fund would pay that back over time.

The City implemented a water utility rate increase in September 2010, which included annual funding by ratepayers for the repair and replacement of the water system infrastructure. Currently, there is an annual transfer from the Water Operations and Maintenance Fund to the Repair and Replacement Fund of $1.6 million. Future rate studies will continue to recommend that annual transfers funded by the ratepayers be made in order to properly maintain the water system. A six-year projection of the revenues and expenditures for the Repair and Replacement Fund (Fund) indicates that the balance in the Fund will grow to $12.3 million by June 30, 2017. These reserves and Pleasanton's financial policies will provide the water system the needed funding both long term and in a catastrophic event, well into the future.

5.6.5.1 Zone 7 Drought Contingency Fund

In addition to the measures taken by the City of Pleasanton, Zone 7 has a Drought Contingency Fund. This fund acts to stabilize rates during drought situations to minimize impacts on water rates as a result of extended periods of water rationing.

5.7 DROUGHT PLANNING

Currently the City of Pleasanton's Water Shortage Contingency Plan and Water Shortage Ordinance together, act as the City's Drought Contingency Plan. The stages of action to be undertaken in response to water supply shortages and the water supply conditions applicable to each stage are described in Section 5.6.

5.7.1 Three-Year Minimum Water Supply

As described in Section 5.1.1, Zone 7's Water Reliability Policy (Goal 1) is to meet 100% of M&I water demands over the next 20 years through average, single dry, and multiple dry years. Therefore, it is not anticipated that Pleasanton will experience a water supply shortfall within the next three years. Water supply from Zone 7 is anticipated to meet Pleasanton's projected water demands for the next three years, and beyond. Additionally, Pleasanton is projected to maintain its pumping quota (3,500 AFY) on the groundwater wells for the next three years, regardless of climate patterns.

5.7.2 Mechanisms for Determining Actual Water Use Reductions

Meters at each Zone 7 turnout are read daily to provide Pleasanton with water consumption information. If stages of the Water Shortage Ordinance were declared during a drought, actual reductions in water use can be estimated by comparing monthly water use totals during the drought with their corresponding totals from previous years. This would allow for the monitoring of the water reduction progress and help determine if further reduction action are necessary.

5.8 SUPPLY AND DEMAND COMPARISONS

The tables below present a comparison of Pleasanton's projected water supplies and water demands from 2015 through 2030. The supplies include both existing and planned supplies. As specified in Section 5.1.1, Zone 7 maintains a 100% reliability policy for the next 20 years through average, single dry, and multiple dry years; therefore, the demand the City of Pleasanton provides to Zone 7 is equivalent to the supply provided.

Additionally, as noted in Section 5.1.2, Zone 7 plans to undertake programs and projects to augment its water supplies and to ensure a reliable water supply for the Livermore-Amador Valley; potential programs and projects are described in Section 4.7. In addition, Pleasanton is planning to implement recycled water projects as described further in Section 4.6.

Table 5-8. Normal Year – Supply and Demand Comparison

	2015	2020	2025	2030
POTABLE WATER				
Supplies	**16,682**	**16,513**	**17,212**	**17,977**
Demand	**16,682**	**16,513**	**17,212**	**17,977**
Difference (Supply - Demand)	0	0	0	0
Difference as % of Supply	0%	0%	0%	0%
Difference as % of Demand	0%	0%	0%	0%
RECYCLED WATER				
Supplies	**140**	**447**	**447**	**447**
Demand	**140**	**447**	**447**	**447**
Difference (Supply - Demand)	0	0	0	0
Difference as % of Supply	0%	0%	0%	0%
Difference as % of Demand	0%	0%	0%	0%

Table 5-9. Single Dry Year – Supply and Demand Comparison

	2015	2020	2025	2030
POTABLE WATER				
Supplies	**16,682**	**16,513**	**17,212**	**17,977**
Demand	**16,682**	**16,513**	**17,212**	**17,977**
Difference (Supply - Demand)	0	0	0	0
Difference as % of Supply	0%	0%	0%	0%
Difference as % of Demand	0%	0%	0%	0%
RECYCLED WATER				
Supplies	**140**	**447**	**447**	**447**
Demand	**140**	**447**	**447**	**447**
Difference (Supply - Demand)	0	0	0	0
Difference as % of Supply	0%	0%	0%	0%
Difference as % of Demand	0%	0%	0%	0%

Tables 5-10a-d. Multiple Dry Years – Supply and Demand Comparison

	2015	2016	2017	2018	2019
POTABLE WATER					
Supplies	**16,682**	**16,648**	**16,614**	**16,580**	**16,546**
Demand	**16,682**	**16,648**	**16,614**	**16,580**	**16,546**
Difference (Supply - Demand)	0	0	0	0	0
Difference as % of Supply	0%	0%	0%	0%	0%
Difference as % of Demand	0%	0%	0%	0%	0%
RECYCLED WATER					
Supplies	**140**	**140**	**140**	**140**	**140**
Demand	**140**	**140**	**140**	**140**	**140**
Difference (Supply - Demand)	0	0	0	0	0
Difference as % of Supply	0%	0%	0%	0%	0%
Difference as % of Demand	0%	0%	0%	0%	0%

	2020	2021	2022	2023	2024
POTABLE WATER					
Supplies	**16,513**	**16,653**	**16,793**	**16,933**	**17,073**
Demand	**16,513**	**16,653**	**16,793**	**16,933**	**17,073**
Difference (Supply - Demand)	0	0	0	0	0
Difference as % of Supply	0%	0%	0%	0%	0%
Difference as % of Demand	0%	0%	0%	0%	0%
RECYCLED WATER					
Supplies	**447**	**447**	**447**	**447**	**447**
Demand	**447**	**447**	**447**	**447**	**447**
Difference (Supply - Demand)	0	0	0	0	0
Difference as % of Supply	0%	0%	0%	0%	0%
Difference as % of Demand	0%	0%	0%	0%	0%

	2025	2026	2027	2028	2029
POTABLE WATER					
Supplies	**17,212**	**17,365**	**17,518**	**17,671**	**17,824**
Demand	**17,212**	**17,365**	**17,518**	**17,671**	**17,824**
Difference (Supply - Demand)	0	0	0	0	0
Difference as % of Supply	0%	0%	0%	0%	0%
Difference as % of Demand	0%	0%	0%	0%	0%
RECYCLED WATER					
Supplies	**447**	**447**	**447**	**447**	**447**
Demand	**447**	**447**	**447**	**447**	**447**
Difference (Supply - Demand)	0	0	0	0	0
Difference as % of Supply	0%	0%	0%	0%	0%
Difference as % of Demand	0%	0%	0%	0%	0%

	2030
POTABLE WATER	
Supplies	**17,977**
Demand	**17,977**
Difference (Supply - Demand)	0
Difference as % of Supply	0%
Difference as % of Demand	0%
RECYCLED WATER	
Supplies	**447**
Demand	**447**
Difference (Supply - Demand)	0
Difference as % of Supply	0%
Difference as % of Demand	0%

6. DEMAND MANAGEMENT MEASURES

The purpose of this chapter is to discuss the City of Pleasanton's water conservation or demand management programs. The City of Pleasanton views the conservation of water to be a vital component of ensuring the sustainability of this limited resource. In 2002 Pleasanton committed to making a good faith effort to implement the Demand Management Measures (DMM) as they were recommended within the City's 2002 Urban Water Management Plan. Recently, Pleasanton has expanded and personalized a number of the City's water conservation efforts to meet the needs of the Pleasanton community. A summary of the City's efforts is presented in Table 6-1. Each DMM category is discussed in more detail in the following sections.

Table 6-1. Urban Water Management Planning Act Demand Management Measures

DMM Number	Demand Management Measure Description	City of Pleasanton Conservation Program
1	Water survey programs for single-family and multi-family residential customers	• Survey offered to top 100 water users and upon request.
2	Residential Plumbing Retrofit	• Water conserving showerheads, aerators, toilet flappers, and dye tablets free to customers. • Ultra-Low Flow Toilet Rebate Program in place since 1994 (now HET Rebate). • High-Efficiency Washing Machine Rebate Program in place since 1998.
3	System Water Audits, Leak Detection and Repair	• High consumer consumption rates are automatically flagged in billing software • All system leaks are repaired immediately • Online pressure monitoring for leaks
4	Metering with Commodity Rates for all New Connections and Retrofit of Existing Connections	• Four-tier rate structure based on water consumption to encourage water conservation. • Residential and commercial water meters are replaced based on service age or register inaccuracy
5	Large Landscape Conservation Programs and Incentives	• Irrigation Equipment Rebate Program in place since 2000. • In cooperation with Zone 7, Large Landscape Surveys & Rebates are offered to high-use irrigation customers
6	High-Efficiency Washing Machine Rebate Programs	• High-Efficiency Washing Machine Rebate Program in place since 1998.
7	Public Information Programs	• Bill inserts or water conservation message • Table/booth representation at public events • Water Conservation Website (www.pleasantonwaterconservation.com)
8	School Education Programs	• On-going Water Science Schools Program offered by Zone 7 supported by Retailers.
9	Conservation Programs for Commercial, Industrial and Institutional Accounts	• Lavatory water conservation signage available • High-Efficiency Toilet Rebate available, implemented in 2010
10	Wholesale Agency Programs	• Not applicable
11	Conservation Pricing	• Four-tier rate structure to encourage water

		conservation
12	Water Conservation Coordinator	• Part time water conservation coordinator
13	Water Waste Prohibitions	• Pleasanton Municipal Code 9.30.150 establishes water regulations and restrictions
14	Residential Ultra-Low Flush Toilet Replacement Programs	• Ultra-Low Flush Toilet Program in place from 1994 to 2008. In 2008 the program was replaced by the High-Efficiency Toilet Rebate Program.

6.1 DESCRIPTION, IMPLEMENTATION, AND EVALUATION OF EFFECTIVENESS OF DEMAND MANAGEMENT MEASURES

6.1.1 DMM 1: Water Survey Programs for Single-Family and Multi-Family Residential Customers

Description:

The City of Pleasanton hires a consultant to facilitate its Residential Water Survey Program. The residential water survey involves an interior and exterior water use review. The surveyor assists the homeowner in identifying areas of water savings and potential leaks. Interior fixtures are checked for leaks, showerhead and aerator flow rates are checked, and the resident is informed of potential water-saving upgrades. Outside, the landscape and irrigation system are thoroughly checked and evaluated for appropriate watering schedule, leaks, irrigation spray uniformity, water runoff, as well as other changes that could facilitate greater water savings. Finally, the resident is provided with a report covering a recommended water schedule for each month of the year for the irrigation system, as well as an analysis of past water use to determine potential savings with the implementation of the recommendations provided by the survey.

The relatively high cost associated with providing such a program has limited the City's ability to offer this service to all customers. Instead, this program was offered to the City's top 75 water consuming single-family residents. Additionally, customers that contact City staff requesting additional assistance in finding ways to improve their household water efficiency, may also be offered this program if their water consumption is considered particularly high.

Pleasanton first offered a pilot residential water survey program in 1998. At that time approximately 20 audits were performed; budget plus staff time limitations concluded the water survey service at that time. The current residential water survey program, performed through consultant services, began in 2008. Between the program's inception in 2008 and December of 2010, Pleasanton completed 14 single-family residential surveys. At this time Pleasanton does not have a similar program for multi-family customers (see below for details on the multi-family survey portion of this DMM not being implemented).

In 2009, the City of Pleasanton received a federal grant for Energy and Sustainability improvements within the community. Part of the money ($50,000) was set aside to fund a new water conservation program and additional time for water conservation staff. The new program developed through this funding is entitled the Controller Assistance Program (CAP). This program addresses a frequently requested service queried by Pleasanton residents. The scope of service provided to residential customers under CAP includes: a City staff visit to evaluate landscape type(s) and proper irrigation controller setting to meet, but not exceed, the landscape water requirements to maintain health. Additionally, if consent is provided from the residential property owner, a rain sensor will be installed at no cost during time of visit if there is compatibility with the resident's irrigation controller.

The Controller Assistance Program is currently offered to residents that directly call the water department seeking further assistance on outdoor water-efficiency.

Schedule of Implementation:

- Single-Family Residential Water Survey Program: On-going; as requested by customer
- Controller Assistance Program: First home visit conducted on December 15, 2010. Open by request from customer

Evaluation of Effectiveness

- Single-Family Residential Water Survey Program:

Table 9-2 summarizes the water savings estimated from the Single-Family Residential Water Survey Program as performed in 2009. Water savings was determined by tracking the one-year difference in residents' water use to the residents' averaged 5-years (or under) pre-survey consumption. Not enough time has elapsed since the 2010 surveys were performed to generate estimates of water savings; hence these residents were not included in the table summary. With a one-year water savings of 6.3 AF over ten houses surveyed, the effect of water savings this program provides to Pleasanton's ability to further reduce demand appears minimal.

Table 6-2. Actual Water Saving from City's Residential Water Survey Program in 2009[(a)]

Program Summary	2009
Number of Single-Family Surveys	10
Number of Multi-Family Surveys	0
Program Expense	$2,340
Actual Water Savings (AF/Y)	6.3

[(a)] Data Source: City of Pleasanton Utility Billing Software used to determine actual water use.

- Controller Assistance Program:

Due to the CAP's recent inception during preparation of this UWMP, not enough time has elapsed to evaluate CAP participant's actual water savings. Water saving will be evaluated by comparing the participants averaged prior 5-years (or under) water consumption history pre-CAP visit, to one-year-out post-CAP visit water consumption. With outdoor irrigation estimated to contribute 50% of the average single-family residential total water consumption[19], the City of Pleasanton views the CAP program as a potentially more cost-effective way of educating residents on water-efficiency in Pleasanton's ability to further reduce demand, than what has been achieved through the Residential Water Survey Program detailed above.

Evaluation of DMM 1 Component Not Being Implemented

- Multi-family Residential Water Survey Program

Multi-family residential connections account for 1.4 percent (311 connections) of Pleasanton's total connections, and 5 percent (722 AF) of Pleasanton's total water consumption for 2010. The greater

[19] American Water Works Association Research Foundation, 1999. *Residential End Users of Water*.

majority of multi-family complexes with larger areas of irrigated landscape have designated irrigation meters (current planning code requires landscapes of 5,000 square feet or larger to install separate irrigation meter). These accounts potentially qualify for Pleasanton's Commercial Equipment Rebate Program, along with Pleasanton's joint program with Zone 7, the Large Landscape Audit Support Services Program (Section 6.1.5). Additionally, multi-family residents can also participate in the High-Efficiency Toilet Rebate Program (Section 6.1.14).

Extending the Residential Water Survey Program to help provide additional indoor water savings assistance to multi-family residents is a goal the City would like to implement within the future as the City's water conservation program expands. Economic factors limiting funds, such as the economic downturn between 2007 and 20010, have affected City funding for water conservation programs. This, together with the non-economic factors, the lack of multi-family customer demand for water conservation programs (low customer impact and social factors) and low water savings potential within this lower water-consuming sector (low environmental impact), has delayed the implementation of the multi-family water survey program. Therefore, limited financial resources and staff-time have largely focused on implementing and developing programs for other water sectors actively requesting demands or where high water-savings impacts can be more readily realized. Health and technological factors are not relevant factors effecting the consideration of implementation of this DMM component. Furthermore, the City of Pleasanton has the legal authority and ability to work with other agencies to implement this DMM component if a beneficial opportunity is developed in the future.

Future planned water supply projects, such as the development of a recycled water system as previously discussed, would likely increase water rates to help offset expansion costs. The funding availability for this project is discussed in Section 4.6. However, it is the City's intention to provide this service to multi-family customers within the next 5-year horizon, which would coincide with the City's recycled water program development.

Table 6-3 shows the cost benefit evaluation for the incorporation of a multi-family residential survey program. If selected, the City would proceed with a multi-family survey similar to the current single-family survey program. The water survey consultant would complete the same components covered in the indoor scope of work as the single-family survey for all participating complex units. Additionally, a review and survey of the outdoor irrigation system would be included. The City would target market (via direct phone call or contact) the program to the highest consuming multi-family complexes in the attempt to achieve maximum water savings.

The nature of indoor/outdoor survey programs do not lend to an easy estimation of water savings, due to uncertainty of survey recommendation implementation. For this analysis research presented in the California Urban Water Conservation Council's (CUWCC) publication *BMP Costs and Savings Study, March 2005*, was utilized to help generate an estimate of water savings. The one-year water savings formula used was: Water Savings = Survey Savings x Number of Surveys. The survey savings factor was adapted from the included Contra Costa County Water District (CCWD) case study of 32.2 gpd water savings from surveyed homes targeted for high water use.

Table 6-3. Cost Benefit Analysis of Multi-Family Residential Survey Program Implementation

Qualitative Analysis			
Costs		**Benefits**	
Program Participant:		• Increased community awareness in water efficiency	
• Property managers time		• Broader City water conservation program	
• Low-flow device installation		• Less Zone 7 purchased water	
Utility:		• Less DSRSD treated water	
• Contractor		• Water savings	
• Staff time (target sites, marketing, survey shadowing, administrative time)			
• Provided low-flow devices			
Quantitative Analysis[a]			
Costs (to Utility)		**Benefits**	
Consultant	$1,650	Estimated 1-Year Water Savings	1.1 AF
		Estimated 5-Year Water Savings[b]	14.7 AF
Staff Labor	$158	Less Zone 7 purchased water	$
Equipment	$254	Less DSRSD wastewater treatment	$
Total Costs	$2,062	Total $ Savings[c]	
1-Year Cost-effectiveness (total costs per AF water saved):			$1,875/AF water saved
5-Year Cost-effectiveness (total costs over 5-years per 5-year AF water saved):			$701/AF water saved

[a] Assumptions: Program would target approximately 1 percent of total multi-family connections per year (two multi-family complexes with 15 units each and irrigation included in survey); 3 hours of City staff time per multi-family complex surveyed; and all units provided with showerheads, kitchen and bathroom aerators, plus ½ units replacing toilet flappers.

[b] Water savings decay was incorporated into 5-year water savings estimate using persistence of water savings data from CUWCC *BMP Costs and Savings Study, March 2005.*

[c] City expenses incurred from purchasing Zone 7 water and fees from DSRSD wastewater treatment is transferred to the consuming customer. Therefore monetary savings is neutral from less water use by customer.

6.1.2 DMM 2: Residential Plumbing Retrofit

Description:

Homes built prior to 1992 may not have water-efficient indoor plumbing, such as low flow showerheads, low flush toilets or faucet aerators. The U.S. Energy Policy Act of 1992 required 1.6 gallons per flush toilets, 2.5 gallons per minute (gpm) showerheads, and 2.5 gpm faucets to be used after January 1994. To promote indoor water conservation, in 2002 Pleasanton piloted a free water efficient showerhead program to residential customers. The showerheads were not well received, likely due to poor esthetic appeal, and the program was discontinued.

In 2008, Pleasanton began running the current Free Indoor Device Program, with more esthetically appealing equipment, to help residents meet their water conservation goals. This program offers all Pleasanton water customers 2.0 gpm low flow showerheads (limit 3 per water account), 1.5 gpm kitchen aerators (limit 1 per water account), 1.0 gpm bathroom aerators (limit 3 per water account; recent addition to program), and toilet flappers (limit 3 per water account). Additionally, the City has been providing fee toilet dye strips for toilet leak detection for over the past ten years. These items are provided by request and offered by water staff to customers. A display at the City's Utility Billing Department counter displays the offer of this program. The program is also advertised during local events where a City water conservation table is presented.

Since the current program's inception, the City has provided approximately 310 water-efficient showerheads, 138 kitchen faucet aerators, 379 toilet flappers, and 12 bathroom aerators to Pleasanton residents.

The details of Pleasanton's High-Efficiency Clothes Washer Rebate Program and the Ultra-Low Flow Toilet Rebate Program (now converted into the High-Efficiency Toilet Rebate Program), for the purpose of additional water-efficient pluming retrofit, are discussed in DDM 6 and DDM 14, respectively.

Schedule of Implementation:

- Free Indoor Device Program: Ongoing; available upon customer request

Evaluation of Effectiveness

- Free Indoor Device Program

An evaluation of device expenditures and estimated water savings of the Free Indoor Device Program is detailed in Table 6-4. Through 2010, the Free Indoor Device Program has saved a total of approximately 14.4 AFA of potable water. The program provides residents with a helpful service, as well as education on higher indoor water efficiency. The City will continue offering this plumbing upgrade service to help further reduce water demand within the service area.

Table 6-4. City of Pleasanton's Free Indoor Device Program Summary[(a)]

Program Summary	Aug – Dec 2008	2009	2010
# 2.0 gpm showerheads	75	167	72
# 1.5 gpm kitchen aerators	25	82	32
# 1.0 gpm faucet aerators[(b)]	NA	NA	9
# Toilet flappers	78	216	88
Device Expenditures	$768	$2,989	$1,334
Estimated Water Savings (AF/Y)	3.0	8.1	3.3

[(a)] Estimates for showerheads and aerators were calculated using EPA WaterSense calculator, using the national average (2.6) as number of persons per household. Estimated water savings for toilet flapper replacement from conservative estimate of 30 gallons/day savings of toilet leak prevention from CUWCC range of 30-500 gal/day waste from a leaking toilet.
[(b)] Faucet aerators were added to program February of 2010.

6.1.3 DMM 3: System Water Audits, Leak Detection and Repair

Description:

All metered water service connections are read bi-monthly and analyzed by the City's billing software for abnormal consumption rates. This helps to catch leaks and meter failures at the earliest stage to minimize loss. Water station pressure and tank levels are monitored at all times on a computerized SCADA system to indicate any unusual activity that could indicate water loss. Finally, identified system leaks are immediately repaired by staff trained for all repair situations, available 24 hours a day.

Schedule of Implementation:

- Water System Audit: Ongoing
- Accounting of Unaccounted-for Water: Ongoing
- Leak Detection and Repair: Ongoing

Evaluation of Effectiveness

City of Pleasanton conducts an annual audit of production versus delivery to determine unaccounted-for water. This number is adjusted by estimates of identified leaks, routine flushing maintenance, and known emergency events. For calendar 2010, this loss was 1,056 acre-feet, or 6.5 percent. These losses can be mitigated in the future with continued analyses of customer metering accuracy, vigilance for indications of potential system leaks, and quick response to leaks that are identified.

6.1.4 DMM 4: Metering with Commodity Rates for all New Connections and Retrofit of Existing Connections

Description:

All connections within the City of Pleasanton service area are metered and all customer sectors are billed by volume of use. Pleasanton uses an inclining block rate structure with four tiers for single-family residential customers. CII, multi-family, and irrigation customers are charged equally per unit of water use. For detailed information on Pleasanton's water rate structure, see DMM 11.

Water meters are checked for accuracy as they are flagged for unusual consumption in the billing software. Meters that are stuck or do not meet accuracy specifications are immediately replaced. Billing accounts with meter failures are assessed an estimated consumption rate that reflects their average usage during the period. Also, as funding allows, meters are replaced within the system based on their service length with the oldest meters receiving replacement priority.

Schedule of Implementation:

- Billing at Commodity Rates: Ongoing (see DMM 11)
- Faulty Meter Replacement: Ongoing
- Scheduled Meter Replacement: Pending funding

Evaluation of Effectiveness

Faulty meters are replaced at an average of 150 – 200 meters per year. Scheduled meter replacement has been recently suspended pending the successful evaluation of new meter technology options such as encoded registers and remote reading capability. This is to ensure that new metering assets are compatible with the needs of the Utility with regards to future technological enhancements.

6.1.5 DMM 5: Large Landscape Conservation Programs and Incentives

Description:

The City has 984 designated irrigation meters, which consumed approximately 27 percent of the City's total consumption in 2010. The City first offered a large landscape program in 1997 (irrigation water budgets). This program is no longer in place.

The City's current program, the Commercial Irrigation Equipment Rebate Program (CIERP), began in 2002 and has provided a total of 31 rebates to irrigation customers since its inception. CIERP provides rebates to irrigation customers for the upgrade of irrigation hardware for water-efficient replacements. The rebate structure is directly dependent on the size of the irritation meter(s) being retrofitted with hardware upgrades, as follows: 5/8" - $60, ¾" - $90, 1" - $150, 1.5" - $500, 2" - $700, 3" - $1,600, 4" - $2,500, and 6" - $3,000. Pleasanton currently advertises this program through the City's water conservation website, and has sent out marketing via direct mail, (letters to each irrigation customer stipulating the total rebate available to them under this program).

Additionally, in cooperation with Zone 7, Pleasanton supports the Large Landscape Audit Support Services Program (LLASS). The LLASS program started in 2009. Through this program high-water consuming irrigation accounts receive free large landscape water audits. Pleasanton staff determines which irrigation customers' rank in the top 20 percent of irrigation water users and contacts potential participants to explain and offer the program. Subsequently, Zone 7 selects 5 - 10 of the submitted irrigation customers (dependent upon available funding) and contracts with an independent, certified water auditor to conduct the audit. The survey is conducted according to the State Model Efficient Landscape Ordinance guidelines, codified in Title 23 of California Code of Regulations (Section 490-492). A list of recommended improvements is provided to the customer and Zone 7 offers customers up to $5,000 in rebate incentive to implement the recommendations provided. As of the end of December 2010, twelve LLASS audits have been performed within Pleasanton's service area.

Schedule of Implementation:

- Commercial Irrigation Equipment Rebate Program: Ongoing, customers submit application to start rebate process

- Large Landscape Audit Support Services Program (*through Zone 7*): Ongoing, Pleasanton's Water Conservation Coordinator submits interested irrigation customers to Zone 7 in late winter. Audits are performed late winter through early summer.

Evaluation of Effectiveness

- Commercial Irrigation Equipment Rebate Program:

Estimates of water savings for the City's Commercial Irrigation Equipment Rebate Program were evaluated by comparing the average of 5 pre-rebate years of water consumption to the actual water use one year after installation with upgraded hardware supported through the rebate program. The reported program expense accounts for both rebate expenditures and staff time expense. Pleasanton plans to continue to support a commercial irrigation upgrade rebate program as a method of further reducing future water demand. Table 6-5 summarizes the program's 2006 2010 expenses and estimated water savings.

Table 6-5. Pleasanton's Commercial Irrigation Equipment Rebate Program Summary[a][b]

Year	Number Rebates Processed	Program Expense	Estimated Water Savings (AFA)
2006	2	$3,384	-5.9
2007	1	$879	1.6
2008	13	$15,082	46.9
2009	4	$4,109	24.2
2010	1	$1,123	NA[c]
Total	21	$24,577	66.8

[a] Data Source: City of Pleasanton Utility Billing Software to obtain water history information.
[b] No rebates were processed in 2005.
[c] Insufficient time since rebate was provided to determine water savings.

- Large Landscape Audit Support Services Program (*through Zone 7*):

The LLASS Program is implemented through Zone 7. Hence, only estimates of staff time have been used to quantify program expense in Table 6-6. Estimated water savings was calculated comparing the average 5-year pre-audit customer water consumption, to 2010 actual water use. With landscape irrigation accounting for 27 percent of Pleasanton's 2010 consumption, and the LLASS Program's 2009 water savings of 67.7 AF/Y (estimated expense of $9.41 per AF water savings over one year), the LLASS Program is currently considered an effective partnership with Zone 7 in helping to further reduce irrigation water demand in Pleasanton.

Table 6-6. Zone 7's Large Landscape Audit Support Services Program Summary[a]

Program Summary	2009	2010
Total number of Audits	8	4
Program Expense[b]	$634	$317
Estimated Water Savings (AF/Y)	67.4	NA[c]

[a] Data Source: City of Pleasanton Utility Billing Software to obtain water history information.
[b] Program expense incorporates only Pleasanton's water conservation coordinator staff time, since the program is implemented by Zone 7.
[c] Insufficient time since rebate was provided to determine water savings.

6.1.6 DMM 6: High-Efficiency Washing Machine Rebate Programs

Description:

Since 1998, Zone 7 has had a Residential Clothes Washer Rebate Program available to Livermore-Amador Valley water customers. The rebate is for the purchase of qualifying high-efficiency clothes washing machines. In 2008, Zone 7 partnered with Pacific Gas and Electric (PG&E) and other San Francisco Bay Area water agencies on a regional strategy to increase water and energy efficiency. Within the past five years, rebate amounts have ranged $50 to $125 for the water portion of the rebate, depending on the water efficiency level of the eligible clothes washer model (referred to as HEW Rebate Program). The current water portion of the rebate is $75. Since 2007, 3,270 HEW rebates totaling $357,825 have been issued to Pleasanton residents, for a total of 37.5 AFA of water saved (Table 6-7). The City of Pleasanton plans on continuing to support this program through Zone 7.

Schedule of Implementation:

- High-Efficiency Washing Machine Rebate Program: On-going; customers apply through PG&E.

Evaluation of Effectiveness:

High-efficiency washing machines use about 50 percent less water than conventional, top-loading models; using only 20 to 30 gallons of water per load compared to 40 to 45 gallons. The estimated annual savings for a typical household is about 5,100 gallons per year. The HEW program has been very successful in Pleasanton's service area, with customer participation increasing as financial incentive increased. Rebate amount is dependent upon washer efficiency tier purchased. Pleasanton plans to continue to support this program through Zone 7 as an effective regional program to further reduce future water demand in the Pleasanton service area. Table 6-7 provides a 2007 – 2010 summary of the HEW program.

Table 6-7. High-Efficiency Washing Machine Rebate Program Summary[(a)]

Year	Rebate Amount ($)	# HEW Rebates	Total Rebates Issued in dollars	Estimated Annual Water Savings (AFA)[(b)]
2007	50 or 100	578	$26,025	9
2008	90 or 125	815	$99,145	12.8
2009	90 or 125	1,001	$121,625	15.7
2010	90 or 125	876	$111,030	13.7
Total		**3,270**	**$357,825**	**37.5**

[(a)] Source: Data provided from Zone 7. Data prior to 2007 was grouped as a whole amongst all Retailers, not specifically identifying Pleasanton specific HEW rebates.
[(b)] Based on an estimated annual savings of 5,100 gallons/machine from the THELMA study.

6.1.7 DMM 7: Public Information Programs

Description:

The City of Pleasanton has been actively involved in providing the community with information and education on the value of water and water conservation for many years. This involvement is taken in the forms of participating at local events, such as green fairs, corporate fairs, school events and farmers markets, hosting and co-hosting water-wise workshops, and meeting with business leaders and corporate green councils to discuss and answer questions on water efficiency. Brochures, handouts, model displays, and general discussion are offered during events to the general public.

Pleasanton's Water Conservation Division has also taken the initiative to provide water conservation training to internal staff in the effort to ensure City staff that directly work with the public have the skills necessary to inform the public on matters of water conservation, and provide information on City programs that are available to the public to increase water-efficiency.

Additionally, Pleasanton is involved with and supports other organizations, such as Bay Friendly and Zone 7, in hosting and organizing water conservation information, such as Bay Friendly's Lose Your Grass the Bay Friendly Way campaign.

Beginning in early 2011, water customers are directed on their water bills to contact the water conservation coordinator for questions and information regarding water-efficiency. Customers can request their water history information, and upon roll out of the City's new online water bill pay interface, customers will be able to access their account billing and consumption history in real time on Pleasanton's Utility Management Solution (UMS) software. The service will allow for multiple payment options and the ability to make non-emergency service requests.

Schedule of Implementation:

- Representation at public events: Ongoing as requested
- One-on-one meetings: Ongoing as requested
- Workshop hosting: No particular schedule, generally occur in the spring

Evaluation of Effectiveness:

It is not possible to assess the quantitative water savings within the Pleasanton water service area generated from water conservation public information programs. The City provides water-efficiency information to all interested public participants, regardless of where they reside; therefore it is not known which residents are being impacted by the program efforts. Additionally, it is difficult to assess if attendees subsequently implement the actions and/or suggestions discussed during programs. Regardless of the lack of quantitative water-saving estimates, Pleasanton views these efforts as an important part of the City's overall water conservation program, and will continue to provide public information programs to help reduce future water demands within the region.

6.1.8 DMM 8: School Education Program

Description:

Zone 7 coordinates with the Retailers in providing water conservation and educational programs and materials to area schools. Zone 7 provides schools at no charge water education literature, facility tours, classroom presentations, and school assemblies. Zone 7 exclusively runs the school education program on behalf of Pleasanton in Pleasanton area schools.

Approximately 25 percent of programs focus exclusively on water conservation. The remaining programs focus on the following topics: water science, groundwater education, watershed protection, or water pollution. All non-water conservation topics begin and end with a general water conservation message. Programs are offered at the kindergarten through high school levels. Zone 7's classroom curricula meet state educational framework requirements in the areas of Life, Earth and Physical Sciences, Ecology and Biology, Earth and Life History, Shaping the Earth's Surface and Investigation and Experimentation.

Schedule of Implementation:

- School Programs: Ongoing; interested teachers/schools contact Zone 7

Evaluation of Effectiveness:

The water savings generated through student education in water conservation school programs is difficult to accurately assess. Students exposed to water conservation education are likely to reduce their water use through behavioral changes, such as turning off running faucets while brushing teeth or taking shorter

showers. Additionally, students may also educate their parents, to produce greater household water savings. Zone 7 assumes that these types of water-saving actions could potentially result in a water savings between 5 to 10 gallons per day per student. Table 6-8 details the number of water education programs and activities performed within Pleasanton's service area since from the 2005 – 2006 to the 2009 – 2010 school years.

Table 6-8. School Education Programs (Presentations, Assemblies, and Creek Walks) in Pleasanton[(a)]

Program Summary	School Year				
	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010
Number of Programs	65	41	63	108	101
Estimated Cost	$30,630	$34,530	$30,590	$43,000	$22,080

[(a)] Source: Data provided from Zone 7 (costs were estimated proportionally from the number of Pleasanton programs performed over total programs).

The City of Pleasanton views school water conservation programs to be an important part in making progress to further reduce future water demand within the region, and plans to continue to support these programs within the scope of this UWMP.

6.1.9 DMM 9: Conservation Programs for Commercial, Industrial, and Institutional Accounts

Description:

In 2010, CII customers represented 5.6 percent of total water connections and accounted for 12 percent of the City's total water consumption. Three programs are currently provided to CII customers:

In February of 2010 Pleasanton launched its Free Water Conservation Sign Program, which provides CII customers with an unlimited quantity of laboratory mirror signage to help remind bathroom patrons to be efficient with their water use. Interested customers simply request the number of signs they are interested in to water conservation staff, and the signs are sent to the customer. During the program's launch, the City directly contacted business associations and major commercial establishments, informing property managers and/or owners of the program and requested their participation. Details of the program continue to be listed on the City's water conservation website.

As detailed in Section 6.1.14, CII customers are provided with the High-Efficiency Toilet Rebate Program to assist in water-efficient toilet upgrades. See the noted section for details.

Lastly, in mid-2009 Zone 7 entered into contract with Ecoblue to provide the Retailer's CII customers the Ecoblue Cube Urinal Retrofit Program. The Ecoblue Cube utilizes bacteria to breakdown urine. Converting urinals to utilize this biotechnology can save a significant amount of water because the urinal unit becomes nearly water-use free after conversion, with only a few janitorial cleaning flushes required daily to maintain cleanliness. Through this program CII customers are provided with free urinal retrofit (for both manual or automatic flush control), starter kit (which includes box of fifty cubes and cleaning supplies), bathroom signage, and custodial training at time of installation, as well as 3 months, 6 months, and 1 year post installation. (Program does not include plumbing pipe changes that may be necessary depending on specific conversion situation). Zone 7 runs this program; City water conservation provides information to interested CII customers regarding the program.

Schedule of Implementation:

- Free Water Conservation Sign Program: Ongoing, by request from customer
- Commercial High-Efficiency Toilet Rebate Program: Ongoing, see Section 6.1.14
- Ecoblue Cube Urinal Retrofit Program: Ongoing, interested customers apply through Zone 7, (contract currently expires end of year 2011)

Evaluation of Effectiveness:

- Free Water Conservation Sign Program:

It is not possible to evaluate the water savings generated from the Free Water Conservation Sign Program since it is unknown how many patrons visited signed bathrooms and subsequently changed their water use behavior. In 2010, 539 signs were provided to a total of ten interested CII customers. The distributed signs expenditures were approximately $113 in material cost. Pleasanton plans to continue to offer this program as an additional marketing tool in educating the general public of the need to conserve water in the attempt to further reduce future area water demand.

- Ecoblue Cube Urinal Retrofit Program:

No CII customers within Pleasanton's service area have participated in this program through Zone 7. Pleasanton plans to continue to support Zone 7's efforts in providing this program while their contract is in place with Ecoblue.

6.1.10 DMM 10: Wholesale Agency Programs

This DMM applies only to wholesale water agencies and therefore is not applicable to the City of Pleasanton.

6.1.11 DMM 11: Conservation Pricing

Description:

The City of Pleasanton has billed single-family residential customers based on an inclining block rate structure since 1980. In an effort to encourage greater water efficiency, as well as adjust for inflation, Pleasanton revised its water pricing in August of 2010 (approved by City Council). The major efficiency-encouraging measures implemented by the revised water pricing were a) moving the single-family residential tiers from 3 to 4, and decreasing the units allowable per tier, b) changing the irrigation rate from a two-tier seasonal rate to a fixed rate, and c) the elimination of the 20 percent senior discount and 30 percent low income discount for billing periods where discounted customer's consumption exceeds 40 units. Pleasanton's previous rate structure is shown in Table 6-9. Pleasanton's current rate structure is shown in Table 6-10.

Table 6-9. City of Pleasanton's Rate Structure prior to 8/1/2010[(a)]

Customer Sector		Total per ccf Unit
Single-Family	0 – 30 ccf	$1.55
	30 – 75 ccf	$2.05
	Over 75 ccf	$2.25
Multi-Family	All Units	$1.55
Commercial	All Units	$1.63
Irrigation	All Units Oct – May	$1.30
	All Units Jun – Sept	$2.12

[(a)] The appropriate Pleasanton fixed meter charge is in addition to the water rates noted above.

Table 6-10. City of Pleasanton's Rate Structure Effective 1/1/2011[(a)]

Customer Sector		Zone 7 Water Cost	Distribution Charge	Recycled Water Surcharge	Capacity Expansion Surcharge	Total per ccf Unit
Single Family	**0 – 20 ccf**	$1.87				$1.87
	21 - 40 ccf	$1.87	$0.2322			$2.1022
	41 – 60 ccf	$1.87	$0.4341	$0.10		$2.4041
	Over 60 ccf	$1.87	$1.0095	$0.10	$0.13	$3.1095
Commercial & Multi Family		$1.87	$0.2423	$0.10		$2.2123
Irrigation		$1.87	$0.3735	$0.10		$2.3435

[(a)] The appropriate Pleasanton fixed meter charge is in addition to the water rates noted above.

Schedule of Implementation:

- Conservation Pricing: Ongoing

Evaluation of Effectiveness:

Pleasanton's water usage is down almost 15 percent from peak 2005 levels. The implementation of the new rate structure was concurrent with expanded water conservation program efforts, as well as increased consumer scrutiny of all living expenses as a result of the current economic downturn. As a result, it is difficult to directly attribute the rate change with the level of conservation. However, the sheer number of customers acknowledging attention to their consumption for the first time and requesting information on how to reduce water use suggests a significant impact. The City of Pleasanton will continue to utilize conservation pricing as a tool to reduce service area water use into the future.

6.1.12 DMM 12: Water Conservation Coordinator

Description:

Since the 1990s, the City of Pleasanton has staffed one to two temporary, 1000-hour, water conservation interns. This position devotes 100 percent of their time to water conservation. Duties performed by the coordinator are as follows:

- Coordination and oversight of conservation programs;
- Coordination of joint programs with Zone 7, the Retailers, and outside agencies;
- Communication of water conservation issues to management;
- Preparation and submittal of reports to various parties;
- Preparation and updates of water conservation plan.

Additional City staff are also responsible for participation of DMM program implementation. Utility Billing staff participate in providing general water conservation program information to customers requesting information, assistance in implementation of the High-Efficiency Toilet Rebate Program, as well as help distribute water-efficient devices under the Free Indoor Device Program (Section 6.1.2). The Utility Superintendent is responsible for coordination and implementation of: system water audits, leak detection, and repair (DMM 3); metering with commodity rates for all new connections and retrofit of existing connections (DMM 4); and participates in conservation pricing (DMM 11).

Implementation Schedule:

- Water Conservation Coordinator: On-going

Evaluation of Effectiveness:

The water savings generated from conservation programs developed and implemented by the water conservation coordinator can essentially be utilized in determining the effectiveness of this DMM. However, the nature of many of the programs and tasks implemented by this position do not lend to quantitative water saving estimates. A summary of the water conservation programs fully or partially implemented by the water conservation coordinator are listed in Table 6-11.

Table 6-11. DMM Programs Implemented by Water Conservation Coordinator Staff

Program	DMM
Residential Water Survey Program	1
Free Indoor Device Program	2
Commercial Irrigation Equipment Rebate Program	5
Large Landscape Audit Support Services Program	5
Public Information Programs	7
Free Water Conservation Sign Program	9

Pleasanton plans to continue implementing this DMM, and views the Water Conservation Coordinator position as an effective tool to further reduce the service area's future demand.

6.1.13 DMM 13: Water Waste Prohibitions

Description:

As discussed in Section 5.6, the City of Pleasanton's City Council approved Ordinance No. 1508 in 1991 to establish water conservation stages and prohibitions to prevent water waste. In May of 2009, Pleasanton City Council approved the Tri-Valley Water Retailers Water Shortage Contingency Plan, which updated the definitions of water shortage stages and levels of water rationing, along with expected

water conservation measures under each stage. Areas not covered under the 2009 plan, namely the water use prohibitions, are governed under the original Ordinance No. 1508.

During the times any water shortage stage is in effect, the following water uses are considered unlawful for any potable City of Pleasanton water customer, as defined by the City's Water Shortage Ordinance:

- Use of potable water between 10:00 a.m. and 4:00 p.m. to irrigate grass, lawns, groundcover, shrubbery, crops, vegetation, and trees; or the use of potable water in such a manner as to result in runoff for more than five minutes.

- Use of potable water to wash down sidewalks, walkways, driveways, parking lots, open ground or other hard surface areas by the direct application of water thereto (including street cleaning).

- Allowing potable water to escape from breaks within the customer's plumbing system for more than eight hours after the customer is notified or discovers the break.

- Use of potable water for any purpose in excess of the customer's allocation.

Implementation Schedule:

- Water waste prohibitions: Ongoing; mandatory compliance required under water shortage stage declaration.

Evaluation of Effectiveness:

Since the Water Shortage Ordinance passage, a mandatory declaration of water shortage has yet to be declared. Therefore an evaluation of water savings from this DMM cannot be estimated. Regardless, Pleasanton plans to continue to support the prohibition of certain water uses considered wasteful to encourage the reduction of future water demand within the service area.

6.1.14 DDM 14: Residential Ultra-Low Flush Toilet Replacement Programs

Description:

In 1994 Zone 7, and the Retailers, started the Ultra-Low Flush Toilet Rebate Program (ULFT). The initial program offered a $75 rebate per toilet to residential customers that replaced old toilets which used 3.5 gallons per flush (gpf) or higher, with new low-flush toilets (1.6 gallon per flush).

In July 2008, with the consideration of market saturation of Ultra-Low Flush Toilets, the retailers changed the rebate program to rebate qualifying high-efficiency toilets, 1.28 gallons gpf or less toilets, now called the High-Efficiency Toilet Rebate Program (HET Program). This program offers a rebate of up to $150 for the replacement of 3.5 gpf or faulty 1.6-gpf toilet, with an UNAR approved high-efficiency toilet. In 2010 the program was expanded to include multi-family residential and commercial customers. Single and multi-family customers are limited to 3 toilet rebates per account within five years, and commercial customers are limited to 4 toilet rebates within five years.

The program is marketed on the City's and Zone 7's water conservation websites, and was highlighted during local events and marketing in 2008 when the program transitioned into the HET Rebate Program.

Schedule of Implementation

- Commercial and Residential High-Efficiency Toilet Rebate Program: Ongoing; customers can apply electronically directly through Zone 7's website

Evaluation of Effectiveness

Each HET is estimated to save an average of 36 gallons per day per household (ULFT are estimated to save 30 gallons per day per household). The toilet rebate program has been quite successful in the City of Pleasanton's service area. Pleasanton plans on continuing to support this program through Zone 7 as an effective regional approach to further reducing water demand within Pleasanton's service area. A 2005 to 2010 summary of the ULFT/HET programs is provided in Table 6-12.

Table 6-12. Commercial and Residential High-Efficiency Toilet Rebate Program Summary[(a)]

Year	# Rebates	Total Rebates Issued in dollars	Estimated Annual Water Savings (AFA) [(b)]
2005	296	$21,674	9.9
2006	316	$23,518	10.6
2007	310	$23,246	10.4
2008[(c)]	379	$38,960	13.7
2009	461	$66,797	18.6
2010[(d)]	402	$57,848	16.2
Total	2,164	$232,043	79.4

[(a)] Source: Data provided from Zone 7.
[(b)] Based on an estimated savings of 30 gallons/day per ULFT and 36 gallons/day per high-efficiency toilet (HET) per household.
[(c)] July of 2008 program switch from rebating ULFT to HET.
[(d)] Incorporation of commercial customers into HET program began in 2010.

Appendix A: UWMP Act

California Water Code, Division 6, Part 2.6: Urban Water Management Planning

Chapter 1. General Declaration and Policy

10610. This part shall be known and may be cited as the "Urban Water Management Planning Act."

10610.2.

(a) The Legislature finds and declares all of the following:

(1) The waters of the state are a limited and renewable resource subject to ever-increasing demands.

(2) The conservation and efficient use of urban water supplies are of statewide concern; however, the planning for that use and the implementation of those plans can best be accomplished at the local level.

(3) A long-term, reliable supply of water is essential to protect the productivity of California's businesses and economic climate.

(4) As part of its long-range planning activities, every urban water supplier should make every effort 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 water years.

(5) Public health issues have been raised over a number of contaminants that have been identified in certain local and imported water supplies.

(6) Implementing effective water management strategies, including groundwater storage projects and recycled water projects, may require specific water quality and salinity targets for meeting groundwater basins water quality objectives and promoting beneficial use of recycled water.

(7) Water quality regulations are becoming an increasingly important factor in water agencies' selection of raw water sources, treatment alternatives, and modifications to existing treatment facilities.

(8) Changes in drinking water quality standards may also impact the usefulness of water supplies and may ultimately impact supply reliability.

(9) The quality of source supplies can have a significant impact on water management strategies and supply reliability.

(b) This part is intended to provide assistance to water agencies in carrying out their long-term resource planning responsibilities to ensure adequate water supplies to meet existing and future demands for water.

10610.4. The Legislature finds and declares that it is the policy of the state as follows:

(a) The management of urban water demands and efficient use of water shall be actively pursued to protect both the people of the state and their water resources.

(b) The management of urban water demands and efficient use of urban water supplies shall be a guiding criterion in public decisions.

(c) Urban water suppliers shall be required to develop water management plans to actively pursue the efficient use of available supplies.

Chapter 2. Definitions

10611. Unless the context otherwise requires, the definitions of this chapter govern the construction of this part.

10611.5. "Demand management" means those water conservation measures, programs, and incentives that prevent the waste of water and promote the reasonable and efficient use and reuse of available supplies.

10612. "Customer" means a purchaser of water from a water supplier who uses the water for municipal purposes, including residential, commercial, governmental, and industrial uses.

10613. "Efficient use" means those management measures that result in the most effective use of water so as to prevent its waste or unreasonable use or unreasonable method of use.

10614. "Person" means any individual, firm, association, organization, partnership, business, trust, corporation, company, public agency, or any agency of such an entity.

10615. "Plan" means an urban water management plan prepared pursuant to this part. A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses, reclamation and demand management activities. The components of the plan may vary according to an individual community or area's characteristics and its capabilities to efficiently use and conserve water. The plan shall address measures for residential, commercial, governmental, and industrial water demand management as set forth in Article 2 (commencing with Section 10630) of Chapter 3. In addition, a strategy and time schedule for implementation shall be included in the plan.

10616. "Public agency" means any board, commission, county, city and county, city, regional agency, district, or other public entity.

10616.5. "Recycled water" means the reclamation and reuse of wastewater for beneficial use.

10617. "Urban water supplier" means a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. An urban water supplier includes a supplier or contractor for water, regardless of the basis of right, which distributes or sells for ultimate resale to customers. This part applies only to water supplied from public water systems subject to Chapter 4 (commencing with Section 116275) of Part 12 of Division 104 of the Health and Safety Code.

Chapter 3. Urban Water Management Plans

Article 1. General Provisions

10620.

(a) Every urban water supplier shall prepare and adopt an urban water management plan in the manner set forth in Article 3 (commencing with Section 10640).

(b) Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.

(c) An urban water supplier indirectly providing water shall not include planning elements in its water management plan as provided in Article 2 (commencing with Section 10630) that would be applicable to urban water suppliers or public agencies directly providing water, or to their customers, without the consent of those suppliers or public agencies.

(d) (1) An urban water supplier may satisfy the requirements of this part by participation in areawide, regional, watershed, or basinwide urban water management planning where those plans will reduce preparation costs and contribute to the achievement of conservation and efficient water use.

(2) Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.

(e) The urban water supplier may prepare the plan with its own staff, by contract, or in cooperation with other governmental agencies.

(f) An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions.

10621.

(a) Each urban water supplier shall update its plan at least once every five years on or before December 31, in years ending in five and zero.

(b) Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days prior to the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision.

(c) The amendments to, or changes in, the plan shall be adopted and filed in the manner set forth in Article 3 (commencing with Section 10640).

Article 2. Contents of Plans

10630. It is the intention of the Legislature, in enacting this part, to permit levels of water management planning commensurate with the numbers of customers served and the volume of water supplied.

10631. A plan shall be adopted in accordance with this chapter that shall do all of the following:

(a) Describe the service area of the supplier, including current and projected population, climate, and other demographic factors affecting the supplier's water management planning. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available.

(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). 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:

(1) A copy of any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management.

(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 the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition.

(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 use records.

(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 reasonably available, including, but not limited to, historic use records.

(c) (1) Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following:
(A) An average water year. (B) A single dry water year. (C) Multiple dry water years.

(2) For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climatic factors, describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable.

(d) Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.

(e) (1) Quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, identifying the uses among water use sectors, including, but not necessarily limited to, all of the following uses: (A) Single-family residential. (B) Multifamily. (C) Commercial. (D) Industrial. (E) Institutional and governmental. (F) Landscape. (G) Sales to other agencies. (H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof. (I) Agricultural.

(2) The water use projections shall be in the same five-year increments described in subdivision (a).

(f) Provide a description of the supplier's water demand management measures. This description shall include all of the following:

(1) A description of each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement any proposed measures, including, but not limited to, all of the following: (A) Water survey programs for single-family residential and multifamily residential customers. (B) Residential plumbing retrofit. (C) System water audits, leak detection, and repair. (D) Metering with commodity rates for all new connections and retrofit of existing connections. (E) Large landscape conservation programs and incentives. (F) High-efficiency washing machine rebate programs. (G) Public information programs. (H) School education programs. (I) Conservation programs for commercial, industrial, and institutional accounts. (J) Wholesale agency programs. (K) Conservation pricing. (L) Water conservation coordinator. (M) Water waste prohibition. (N) Residential ultra-low-flush toilet replacement programs.

(2) A schedule of implementation for all water demand management measures proposed or described in the plan.

(3) A description of the methods, if any, that the supplier will use to evaluate the effectiveness of water demand management measures implemented or described under the plan.

(4) An estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the supplier's ability to further reduce demand.

(g) An evaluation of each water demand management measure listed in paragraph (1) of subdivision (f) that is not currently being implemented or scheduled for implementation. In the course of the evaluation, first consideration shall be given to water demand management measures, or combination of measures, that offer lower incremental costs than expanded or additional water supplies. This evaluation shall do all of the following:

(1) Take into account economic and noneconomic factors, including environmental, social, health, customer impact, and technological factors.

(2) Include a cost-benefit analysis, identifying total benefits and total costs.

(3) Include a description of funding available to implement any planned water supply project that would provide water at a higher unit cost.

(4) Include a description of the water supplier's legal authority to implement the measure and efforts to work with other relevant agencies to ensure the implementation of the measure and to share the cost of implementation.

(h) Include a description of all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs, other than the demand management programs identified pursuant to paragraph (1) of subdivision (f), that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in average, single-dry, and multiple-dry water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.

(i) Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.

(j) For purposes of this part, urban water suppliers that are members of the California Urban Water Conservation Council shall be deemed in compliance with the requirements of subdivisions (f) and (g) by complying with all the provisions of the "Memorandum of Understanding Regarding Urban Water

Conservation in California," dated December 10, 2008, as it may be amended, and by submitting the annual reports required by Section 6.2 of that memorandum.

(k) Urban water suppliers that rely upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (c). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (c).

10631.1.

(a) The water use projections required by Section 10631 shall include projected water use for single-family and multifamily residential housing needed for lower income households, as defined in Section 50079.5 of the Health and Safety Code, as identified in the housing element of any city, county, or city and county in the service area of the supplier.

(b) It is the intent of the Legislature that the identification of projected water use for single-family and multifamily residential housing for lower income households will assist a supplier in complying with the requirement under Section 65589.7 of the Government Code to grant a priority for the provision of service to housing units affordable to lower income households.

10631.5.

(a) (1) Beginning January 1, 2009, the terms of, and eligibility for, a water management grant or loan made to an urban water supplier and awarded or administered by the department, state board, or California Bay-Delta Authority or its successor agency shall be conditioned on the implementation of the water demand management measures described in Section 10631, as determined by the department pursuant to subdivision (b).

(2) For the purposes of this section, water management grants and loans include funding for programs and projects for surface water or groundwater storage, recycling, desalination, water conservation, water supply reliability, and water supply augmentation. This section does not apply to water management projects funded by the federal American Recovery and Reinvestment Act of 2009 (Public Law 111-5).

(3) Notwithstanding paragraph (1), the department shall determine that an urban water supplier is eligible for a water management grant or loan even though the supplier is not implementing all of the water demand management measures described in Section 10631, if the urban water supplier has submitted to the department for approval a schedule, financing plan, and budget, to be included in the grant or loan agreement, for implementation of the water demand management measures. The supplier may request grant or loan funds to implement the water demand management measures to the extent the request is consistent with the eligibility requirements applicable to the water management funds.

(4) (A) Notwithstanding paragraph (1), the department shall determine that an urban water supplier is eligible for a water management grant or loan even though the supplier is not implementing all of the water demand management measures described in Section 10631, if an urban water supplier submits to the department for approval documentation demonstrating that a water demand management measure is not locally cost effective. If the department determines that the documentation submitted by the urban water supplier fails to demonstrate that a water demand management measure is not locally cost effective, the department shall notify the urban water supplier and the agency administering the grant or loan program within 120 days that the documentation does not satisfy the requirements for an exemption, and include in that notification a detailed statement to support the determination. (B) For purposes of this paragraph, "not locally cost effective" means that the present value of the local benefits of implementing a water demand management measure is less than the present value of the local costs of implementing that measure.

(b) (1) The department, in consultation with the state board and the California Bay-Delta Authority or its successor agency, and after soliciting public comment regarding eligibility requirements, shall develop eligibility requirements to implement the requirement of paragraph (1) of subdivision (a). In establishing these eligibility requirements, the department shall do both of the following: (A) Consider the conservation measures described in the Memorandum of Understanding Regarding Urban Water

Conservation in California, and alternative conservation approaches that provide equal or greater water savings. (B) Recognize the different legal, technical, fiscal, and practical roles and responsibilities of wholesale water suppliers and retail water suppliers.

(2) (A) For the purposes of this section, the department shall determine whether an urban water supplier is implementing all of the water demand management measures described in Section 10631 based on either, or a combination, of the following: (i) Compliance on an individual basis. (ii) Compliance on a regional basis. Regional compliance shall require participation in a regional conservation program consisting of two or more urban water suppliers that achieves the level of conservation or water efficiency savings equivalent to the amount of conservation or savings achieved if each of the participating urban water suppliers implemented the water demand management measures. The urban water supplier administering the regional program shall provide participating urban water suppliers and the department with data to demonstrate that the regional program is consistent with this clause. The department shall review the data to determine whether the urban water suppliers in the regional program are meeting the eligibility requirements. (B) The department may require additional information for any determination pursuant to this section.

(3) The department shall not deny eligibility to an urban water supplier in compliance with the requirements of this section that is participating in a multiagency water project, or an integrated regional water management plan, developed pursuant to Section 75026 of the Public Resources Code, solely on the basis that one or more of the agencies participating in the project or plan is not implementing all of the water demand management measures described in Section 10631.

(c) In establishing guidelines pursuant to the specific funding authorization for any water management grant or loan program subject to this section, the agency administering the grant or loan program shall include in the guidelines the eligibility requirements developed by the department pursuant to subdivision (b).

(d) Upon receipt of a water management grant or loan application by an agency administering a grant and loan program subject to this section, the agency shall request an eligibility determination from the department with respect to the requirements of this section. The department shall respond to the request within 60 days of the request.

(e) The urban water supplier may submit to the department copies of its annual reports and other relevant documents to assist the department in determining whether the urban water supplier is implementing or scheduling the implementation of water demand management activities. In addition, for urban water suppliers that are signatories to the Memorandum of Understanding Regarding Urban Water Conservation in California and submit biennial reports to the California Urban Water Conservation Council in accordance with the memorandum, the department may use these reports to assist in tracking the implementation of water demand management measures.

(f) This section shall remain in effect only until July 1, 2016, and as of that date is repealed, unless a later enacted statute, that is enacted before July 1, 2016, deletes or extends that date.

10631.7. The department, in consultation with the California Urban Water Conservation Council, shall convene an independent technical panel to provide information and recommendations to the department and the Legislature on new demand management measures, technologies, and approaches. The panel shall consist of no more than seven members, who shall be selected by the department to reflect a balanced representation of experts. The panel shall have at least one, but no more than two, representatives from each of the following: retail water suppliers, environmental organizations, the business community, wholesale water suppliers, and academia. The panel shall be convened by January 1, 2009, and shall report to the Legislature no later than January 1, 2010, and every five years thereafter. The department shall review the panel report and include in the final report to the Legislature the department's recommendations and comments regarding the panel process and the panel's recommendations.

10632. The plan shall provide an urban water shortage contingency analysis that includes each of the following elements that are within the authority of the urban water supplier: (1) Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply, and an outline of specific water supply conditions that are applicable to each stage. (2) An estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply. (3) Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster. (4) Additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable

water for street cleaning. (5) Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply. (6) Penalties or charges for excessive use, where applicable. (7) An analysis of the impacts of each of the actions and conditions described in paragraphs (1) to (6), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments. (8) A draft water shortage contingency resolution or ordinance. (9) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.

10633. The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. The preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area, and shall include all of the following:

(a) A description of the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.

(b) A description of the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.

(c) A description of the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.

(d) A description and quantification of the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.

(e) The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision.

(f) A description of actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.

(g) A plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.

10634. The plan shall include information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments as described in subdivision (a) of Section 10631, and the manner in which water quality affects water management strategies and supply reliability.

Article 2.5. Water Service Reliability

10635.

(a) Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.

(b) The urban water supplier shall provide that portion of its urban water management plan prepared pursuant to this article to any city or county within which it provides water supplies no later than 60 days after the submission of its urban water management plan.

(c) Nothing in this article is intended to create a right or entitlement to water service or any specific level of water service.

(d) Nothing in this article is intended to change existing law concerning an urban water supplier's obligation to provide water service to its existing customers or to any potential future customers.

Article 3. Adoption and Implementation of Plans

10640. Every urban water supplier required to prepare a plan pursuant to this part shall prepare its plan pursuant to Article 2 (commencing with Section 10630). The supplier shall likewise periodically review the plan as required by Section 10621, and any amendments or changes required as a result of that review shall be adopted pursuant to this article.

10641. An urban water supplier required to prepare a plan may consult with, and obtain comments from, any public agency or state agency or any person who has special expertise with respect to water demand management methods and techniques.

10642. Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan. Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection and shall hold a public hearing thereon. Prior to the hearing, notice of the time and place of hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code. The urban water supplier shall provide notice of the time and place of hearing to any city or county within which the supplier provides water supplies. A privately owned water supplier shall provide an equivalent notice within its service area. After the hearing, the plan shall be adopted as prepared or as modified after the hearing.

10643. An urban water supplier shall implement its plan adopted pursuant to this chapter in accordance with the schedule set forth in its plan.

10644.

(a) An urban water supplier shall submit to the department, the California State Library, and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. Copies of amendments or changes to the plans shall be submitted to the department, the California State Library, and any city or county within which the supplier provides water supplies within 30 days after adoption.

(b) The department shall prepare and submit to the Legislature, on or before December 31, in the years ending in six and one, a report summarizing the status of the plans adopted pursuant to this part. The report prepared by the department shall identify the exemplary elements of the individual plans. The department shall provide a copy of the report to each urban water supplier that has submitted its plan to the department. The department shall also prepare reports and provide data for any legislative hearings designed to consider the effectiveness of plans submitted pursuant to this part.

(c) (1) For the purpose of identifying the exemplary elements of the individual plans, the department shall identify in the report those water demand management measures adopted and implemented by specific urban water suppliers, and identified pursuant to Section 10631, that achieve water savings significantly above the levels established by the department to meet the requirements of Section 10631.5.
(2) The department shall distribute to the panel convened pursuant to Section 10631.7 the results achieved by the implementation of those water demand management measures described in paragraph (1).
(3) The department shall make available to the public the standard the department will use to identify exemplary water demand management measures.

10645. Not later than 30 days after filing a copy of its plan with the department, the urban water supplier and the department shall make the plan available for public review during normal business hours.

Chapter 4. Miscellaneous Provisions

10650. Any actions or proceedings to attack, review, set aside, void, or annul the acts or decisions of an urban water supplier on the grounds of noncompliance with this part shall be commenced as follows:

(a) An action or proceeding alleging failure to adopt a plan shall be commenced within 18 months after that adoption is required by this part.
(b) Any action or proceeding alleging that a plan, or action taken pursuant to the plan, does not comply with this part shall be commenced within 90 days after filing of the plan or amendment thereto pursuant to Section 10644 or the taking of that action.

10651. In any action or proceeding to attack, review, set aside, void, or annul a plan, or an action taken pursuant to the plan by an urban water supplier on the grounds of noncompliance with this part, the inquiry shall extend only to whether there was a prejudicial abuse of discretion. Abuse of discretion is established if the supplier has not proceeded in a manner required by law or if the action by the water supplier is not supported by substantial evidence.

10652. The California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) does not apply to the preparation and adoption of plans pursuant to this part or to the implementation of actions taken pursuant to Section 10632. Nothing in this part shall be interpreted as exempting from the California Environmental Quality Act any project that would significantly affect water supplies for fish and wildlife, or any project for implementation of the plan, other than projects implementing Section 10632, or any project for expanded or additional water supplies.

10653. The adoption of a plan shall satisfy any requirements of state law, regulation, or order, including those of the State Water Resources Control Board and the Public Utilities Commission, for the preparation of water management plans or conservation plans; provided, that if the State Water Resources Control Board or the Public Utilities Commission requires additional information concerning water conservation to implement its existing authority, nothing in this part shall be deemed to limit the board or the commission in obtaining that information. The requirements of this part shall be satisfied by any urban water demand management plan prepared to meet federal laws or regulations after the effective date of this part, and which substantially meets the requirements of this part, or by any existing urban water management plan which includes the contents of a plan required under this part.

10654. An urban water supplier may recover in its rates the costs incurred in preparing its plan and implementing the reasonable water conservation measures included in the plan. Any best water management practice that is included in the plan that is identified in the "Memorandum of Understanding Regarding Urban Water Conservation in California" is deemed to be reasonable for the purposes of this section.

10655. If any provision of this part or the application thereof to any person or circumstances is held invalid, that invalidity shall not affect other provisions or applications of this part which can be given effect without the invalid provision or application thereof, and to this end the provisions of this part are severable.

10656. An urban water supplier that does not prepare, adopt, and submit its urban water management plan to the department in accordance with this part, is ineligible to receive funding pursuant to Division 24 (commencing with Section 78500) or Division 26 (commencing with Section 79000), or receive drought assistance from the state until the urban water management plan is submitted pursuant to this article.

Appendix B: Water Conservation Bill of 2009

California Water Code, Division 6, Part 2.55: Sustainable Water Use and Demand Reduction

Chapter 1. General Declarations and Policy

10608. The Legislature finds and declares all of the following:

(a) Water is a public resource that the California Constitution protects against waste and unreasonable use.

(b) Growing population, climate change, and the need to protect and grow California's economy while protecting and restoring our fish and wildlife habitats make it essential that the state manage its water resources as efficiently as possible.

(c) Diverse regional water supply portfolios will increase water supply reliability and reduce dependence on the Delta.

(d) Reduced water use through conservation provides significant energy and environmental benefits, and can help protect water quality, improve stream flows, and reduce greenhouse gas emissions.

(e) The success of state and local water conservation programs to increase efficiency of water use is best determined on the basis of measurable outcomes related to water use or efficiency.

(f) Improvements in technology and management practices offer the potential for increasing water efficiency in California over time, providing an essential water management tool to meet the need for water for urban, agricultural, and environmental uses.

(g) The Governor has called for a 20 percent per capita reduction in urban water use statewide by 2020.

(h) The factors used to formulate water use efficiency targets can vary significantly from location to location based on factors including weather, patterns of urban and suburban development, and past efforts to enhance water use efficiency.

(i) Per capita water use is a valid measure of a water provider's efforts to reduce urban water use within its service area. However, per capita water use is less useful for measuring relative water use efficiency between different water providers. Differences in weather, historical patterns of urban and suburban development, and density of housing in a particular location need to be considered when assessing per capita water use as a measure of efficiency.

10608.4. It is the intent of the Legislature, by the enactment of this part, to do all of the following:

(a) Require all water suppliers to increase the efficiency of use of this essential resource.

(b) Establish a framework to meet the state targets for urban water conservation identified in this part and called for by the Governor.

(c) Measure increased efficiency of urban water use on a per capita basis.

(d) Establish a method or methods for urban retail water suppliers to determine targets for achieving increased water use efficiency by the year 2020, in accordance with the Governor's goal of a 20-percent reduction.

(e) Establish consistent water use efficiency planning and implementation standards for urban water suppliers and agricultural water suppliers.

(f) Promote urban water conservation standards that are consistent with the California Urban Water Conservation Council's adopted best management practices and the requirements for demand management in Section 10631.

(g) Establish standards that recognize and provide credit to water suppliers that made substantial capital investments in urban water conservation since the drought of the early 1990s.
(h) Recognize and account for the investment of urban retail water suppliers in providing recycled water for beneficial uses.
(i) Require implementation of specified efficient water management practices for agricultural water suppliers.
(j) Support the economic productivity of California's agricultural, commercial, and industrial sectors.
(k) Advance regional water resources management.

10608.8.
(a) (1) Water use efficiency measures adopted and implemented pursuant to this part or Part 2.8 (commencing with Section 10800) are water conservation measures subject to the protections provided under Section 1011.
(2) Because an urban agency is not required to meet its urban water use target until 2020 pursuant to subdivision (b) of Section 10608.24, an urban retail water supplier's failure to meet those targets shall not establish a violation of law for purposes of any state administrative or judicial proceeding prior to January 1, 2021. Nothing in this paragraph limits the use of data reported to the department or the board in litigation or an administrative proceeding. This paragraph shall become inoperative on January 1, 2021.
(3) To the extent feasible, the department and the board shall provide for the use of water conservation reports required under this part to meet the requirements of Section 1011 for water conservation reporting.
(b) This part does not limit or otherwise affect the application of Chapter 3.5 (commencing with Section 11340), Chapter 4 (commencing with Section 11370), Chapter 4.5 (commencing with Section 11400), and Chapter 5 (commencing with Section 11500) of Part 1 of Division 3 of Title 2 of the Government Code.
(c) This part does not require a reduction in the total water used in the agricultural or urban sectors, because other factors, including, but not limited to, changes in agricultural economics or population growth may have greater effects on water use. This part does not limit the economic productivity of California's agricultural, commercial, or industrial sectors.
(d) The requirements of this part do not apply to an agricultural water supplier that is a party to the Quantification Settlement Agreement, as defined in subdivision (a) of Section 1 of Chapter 617 of the Statutes of 2002, during the period within which the Quantification Settlement Agreement remains in effect. After the expiration of the Quantification Settlement Agreement, to the extent conservation water projects implemented as part of the Quantification Settlement Agreement remain in effect, the conserved water created as part of those projects shall be credited against the obligations of the agricultural water supplier pursuant to this part.

Chapter 2. Definitions

10608.12. Unless the context otherwise requires, the following definitions govern the construction of this part:
(a) "Agricultural water supplier" means a water supplier, either publicly or privately owned, providing water to 10,000 or more irrigated acres, excluding recycled water. "Agricultural water supplier" includes a supplier or contractor for water, regardless of the basis of right, that distributes or sells water for ultimate resale to customers. "Agricultural water supplier" does not include the department.
(b) "Base daily per capita water use" means any of the following:
(1) The urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous 10-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.
(2) For an urban retail water supplier that meets at least 10 percent of its 2008 measured retail water demand through recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier, the urban retail water supplier may extend the calculation described in paragraph (1) up to an additional five years to a maximum of a continuous 15-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.
(3) For the purposes of Section 10608.22, the urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous five-year period ending no earlier than December 31, 2007, and no later than December 31, 2010.

(c) "Baseline commercial, industrial, and institutional water use" means an urban retail water supplier's base daily per capita water use for commercial, industrial, and institutional users.

(d) "Commercial water user" means a water user that provides or distributes a product or service.

(e) "Compliance daily per capita water use" means the gross water use during the final year of the reporting period, reported in gallons per capita per day.

(f) "Disadvantaged community" means a community with an annual median household income that is less than 80 percent of the statewide annual median household income.

(g) "Gross water use" means the total volume of water, whether treated or untreated, entering the distribution system of an urban retail water supplier, excluding all of the following:

(1) Recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier.

(2) The net volume of water that the urban retail water supplier places into long-term storage.

(3) The volume of water the urban retail water supplier conveys for use by another urban water supplier.

(4) The volume of water delivered for agricultural use, except as otherwise provided in subdivision (f) of Section 10608.24.

(h) "Industrial water user" means a water user that is primarily a manufacturer or processor of materials as defined by the North American Industry Classification System code sectors 31 to 33, inclusive, or an entity that is a water user primarily engaged in research and development.

(i) "Institutional water user" means a water user dedicated to public service. This type of user includes, among other users, higher education institutions, schools, courts, churches, hospitals, government facilities, and nonprofit research institutions.

(j) "Interim urban water use target" means the midpoint between the urban retail water supplier's base daily per capita water use and the urban retail water supplier's urban water use target for 2020.

(k) "Locally cost effective" means that the present value of the local benefits of implementing an agricultural efficiency water management practice is greater than or equal to the present value of the local cost of implementing that measure.

(l) "Process water" means water used for producing a product or product content or water used for research and development, including, but not limited to, continuous manufacturing processes, water used for testing and maintaining equipment used in producing a product or product content, and water used in combined heat and power facilities used in producing a product or product content. Process water does not mean incidental water uses not related to the production of a product or product content, including, but not limited to, water used for restrooms, landscaping, air conditioning, heating, kitchens, and laundry.

(m) "Recycled water" means recycled water, as defined in subdivision (n) of Section 13050, that is used to offset potable demand, including recycled water supplied for direct use and indirect potable reuse, that meets the following requirements, where applicable:

(1) For groundwater recharge, including recharge through spreading basins, water supplies that are all of the following: (A) Metered. (B) Developed through planned investment by the urban water supplier or a wastewater treatment agency. (C) Treated to a minimum tertiary level. (D) Delivered within the service area of an urban retail water supplier or its urban wholesale water supplier that helps an urban retail water supplier meet its urban water use target.

(2) For reservoir augmentation, water supplies that meet the criteria of paragraph (1) and are conveyed through a distribution system constructed specifically for recycled water.

(n) "Regional water resources management" means sources of supply resulting from watershed-based planning for sustainable local water reliability or any of the following alternative sources of water: (1) The capture and reuse of stormwater or rainwater.

(2) The use of recycled water.

(3) The desalination of brackish groundwater.

(4) The conjunctive use of surface water and groundwater in a manner that is consistent with the safe yield of the groundwater basin.

(o) "Reporting period" means the years for which an urban retail water supplier reports compliance with the urban water use targets.

(p) "Urban retail water supplier" means a water supplier, either publicly or privately owned, that directly provides potable municipal water to more than 3,000 end users or that supplies more than 3,000 acre-feet of potable water annually at retail for municipal purposes.

(q) "Urban water use target" means the urban retail water supplier' s targeted future daily per capita water use.

(r) "Urban wholesale water supplier," means a water supplier, either publicly or privately owned, that provides more than 3,000 acre-feet of water annually at wholesale for potable municipal purposes.

Chapter 3. Urban Retail Water Suppliers

10608.16.

(a) The state shall achieve a 20-percent reduction in urban per capita water use in California on or before December 31, 2020.

(b) The state shall make incremental progress towards the state target specified in subdivision (a) by reducing urban per capita water use by at least 10 percent on or before December 31, 2015.

10608.20.

(a) (a) (1) Each urban retail water supplier shall develop urban water use targets and an interim urban water use target by July 1, 2011. Urban retail water suppliers may elect to determine and report progress toward achieving these targets on an individual or regional basis, as provided in subdivision (a) of Section 10608.28, and may determine the targets on a fiscal year or calendar year basis.
(2) It is the intent of the Legislature that the urban water use targets described in paragraph (1) cumulatively result in a 20-percent reduction from the baseline daily per capita water use by December 31, 2020.

(b) An urban retail water supplier shall adopt one of the following methods for determining its urban water use target pursuant to subdivision (a):
(1) Eighty percent of the urban retail water supplier's baseline per capita daily water use.
(2) The per capita daily water use that is estimated using the sum of the following performance standards: (A) For indoor residential water use, 55 gallons per capita daily water use as a provisional standard. Upon completion of the department's 2016 report to the Legislature pursuant to Section 10608.42, this standard may be adjusted by the Legislature by statute. (B) For landscape irrigated through dedicated or residential meters or connections, water efficiency equivalent to the standards of the Model Water Efficient Landscape Ordinance set forth in Chapter 2.7 (commencing with Section 490) of Division 2 of Title 23 of the California Code of Regulations, as in effect the later of the year of the landscape's installation or 1992. An urban retail water supplier using the approach specified in this subparagraph shall use satellite imagery, site visits, or other best available technology to develop an accurate estimate of landscaped areas. (C) For commercial, industrial, and institutional uses, a 10-percent reduction in water use from the baseline commercial, industrial, and institutional water use by 2020.
(3) Ninety-five percent of the applicable state hydrologic region target, as set forth in the state's draft 20x2020 Water Conservation Plan (dated April 30, 2009). If the service area of an urban water supplier includes more than one hydrologic region, the supplier shall apportion its service area to each region based on population or area.
(4) A method that shall be identified and developed by the department, through a public process, and reported to the Legislature no later than December 31, 2010. The method developed by the department shall identify per capita targets that cumulatively result in a statewide 20-percent reduction in urban daily per capita water use by December 31, 2020. In developing urban daily per capita water use targets, the department shall do all of the following: (A) Consider climatic differences within the state. (B) Consider population density differences within the state. (C) Provide flexibility to communities and regions in meeting the targets. (D) Consider different levels of per capita water use according to plant water needs in different regions. (E) Consider different levels of commercial, industrial, and institutional water use in different regions of the state. (F) Avoid placing an undue hardship on communities that have implemented conservation measures or taken actions to keep per capita water use low.

(c) If the department adopts a regulation pursuant to paragraph (4) of subdivision (b) that results in a requirement that an urban retail water supplier achieve a reduction in daily per capita water use that is greater than 20 percent by December 31, 2020, an urban retail water supplier that adopted the method described in paragraph (4) of subdivision (b) may limit its urban water use target to a reduction of not more than 20 percent by December 31, 2020, by adopting the method described in paragraph (1) of subdivision (b).

(d) The department shall update the method described in paragraph (4) of subdivision (b) and report to the Legislature by December 31, 2014. An urban retail water supplier that adopted the method described in paragraph (4) of subdivision (b) may adopt a new urban daily per capita water use target pursuant to this updated method.

(e) An urban retail water supplier shall include in its urban water management plan due in 2010 pursuant to Part 2.6 (commencing with Section 10610) the baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.

(f) When calculating per capita values for the purposes of this chapter, an urban retail water supplier shall determine population using federal, state, and local population reports and projections.

(g) An urban retail water supplier may update its 2020 urban water use target in its 2015 urban water management plan required pursuant to Part 2.6 (commencing with Section 10610).

(h) (1) The department, through a public process and in consultation with the California Urban Water Conservation Council, shall develop technical methodologies and criteria for the consistent implementation of this part, including, but not limited to, both of the following: (A) Methodologies for calculating base daily per capita water use, baseline commercial, industrial, and institutional water use, compliance daily per capita water use, gross water use, service area population, indoor residential water use, and landscaped area water use. (B) Criteria for adjustments pursuant to subdivisions (d) and (e) of Section 10608.24.
(2) The department shall post the methodologies and criteria developed pursuant to this subdivision on its Internet Web site, and make written copies available, by October 1, 2010. An urban retail water supplier shall use the methods developed by the department in compliance with this part.

(i) (i) (1) The department shall adopt regulations for implementation of the provisions relating to process water in accordance with subdivision (l) of Section 10608.12, subdivision (e) of Section 10608.24, and subdivision (d) of Section 10608.26.
(2) The initial adoption of a regulation authorized by this subdivision is deemed to address an emergency, for purposes of Sections 11346.1 and 11349.6 of the Government Code, and the department is hereby exempted for that purpose from the requirements of subdivision (b) of Section 11346.1 of the Government Code. After the initial adoption of an emergency regulation pursuant to this subdivision, the department shall not request approval from the Office of Administrative Law to readopt the regulation as an emergency regulation pursuant to Section 11346.1 of the Government Code.

(j) (1) An urban retail water supplier is granted an extension to July 1, 2011, for adoption of an urban water management plan pursuant to Part 2.6 (commencing with Section 10610) due in 2010 to allow the use of technical methodologies developed by the department pursuant to paragraph (4) of subdivision (b) and subdivision (h). An urban retail water supplier that adopts an urban water management plan due in 2010 that does not use the methodologies developed by the department pursuant to subdivision (h) shall amend the plan by July 1, 2011, to comply with this part. (2) An urban wholesale water supplier whose urban water management plan prepared pursuant to Part 2.6 (commencing with Section 10610) was due and not submitted in 2010 is granted an extension to July 1, 2011, to permit coordination between an urban wholesale water supplier and urban retail water suppliers.

10608.22. Notwithstanding the method adopted by an urban retail water supplier pursuant to Section 10608.20, an urban retail water supplier's per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use as defined in paragraph (3) of subdivision (b) of Section 10608.12. This section does not apply to an urban retail water supplier with a base daily per capita water use at or below 100 gallons per capita per day.

10608.24.

(a) Each urban retail water supplier shall meet its interim urban water use target by December 31, 2015.

(b) Each urban retail water supplier shall meet its urban water use target by December 31, 2020.

(c) An urban retail water supplier's compliance daily per capita water use shall be the measure of progress toward achievement of its urban water use target.

(d) (1) When determining compliance daily per capita water use, an urban retail water supplier may consider the following factors: (A) Differences in evapotranspiration and rainfall in the baseline period compared to the compliance reporting period. (B) Substantial changes to commercial or industrial water use resulting from increased business output and economic development that have occurred during the reporting period. (C) Substantial changes to institutional water use resulting from

fire suppression services or other extraordinary events, or from new or expanded operations, that have occurred during the reporting period.

(2) If the urban retail water supplier elects to adjust its estimate of compliance daily per capita water use due to one or more of the factors described in paragraph (1), it shall provide the basis for, and data supporting, the adjustment in the report required by Section 10608.40.

(e) When developing the urban water use target pursuant to Section 10608.20, an urban retail water supplier that has a substantial percentage of industrial water use in its service area may exclude process water from the calculation of gross water use to avoid a disproportionate burden on another customer sector.

(f) (1) An urban retail water supplier that includes agricultural water use in an urban water management plan pursuant to Part 2.6 (commencing with Section 10610) may include the agricultural water use in determining gross water use. An urban retail water supplier that includes agricultural water use in determining gross water use and develops its urban water use target pursuant to paragraph (2) of subdivision (b) of Section 10608.20 shall use a water efficient standard for agricultural irrigation of 100 percent of reference evapotranspiration multiplied by the crop coefficient for irrigated acres.

(2) An urban retail water supplier, that is also an agricultural water supplier, is not subject to the requirements of Chapter 4 (commencing with Section 10608.48), if the agricultural water use is incorporated into its urban water use target pursuant to paragraph (1).

10608.26.

(a) In complying with this part, an urban retail water supplier shall conduct at least one public hearing to accomplish all of the following:

(1) Allow community input regarding the urban retail water supplier's implementation plan for complying with this part.

(2) Consider the economic impacts of the urban retail water supplier's implementation plan for complying with this part.

(3) Adopt a method, pursuant to subdivision (b) of Section 10608.20, for determining its urban water use target.

(b) In complying with this part, an urban retail water supplier may meet its urban water use target through efficiency improvements in any combination among its customer sectors. An urban retail water supplier shall avoid placing a disproportionate burden on any customer sector.

(c) For an urban retail water supplier that supplies water to a United States Department of Defense military installation, the urban retail water supplier's implementation plan for complying with this part shall consider the conservation of that military installation under federal Executive Order 13514.

(d) (1) Any ordinance or resolution adopted by an urban retail water supplier after the effective date of this section shall not require existing customers as of the effective date of this section, to undertake changes in product formulation, operations, or equipment that would reduce process water use, but may provide technical assistance and financial incentives to those customers to implement efficiency measures for process water. This section shall not limit an ordinance or resolution adopted pursuant to a declaration of drought emergency by an urban retail water supplier.

(2) This part shall not be construed or enforced so as to interfere with the requirements of Chapter 4 (commencing with Section 113980) to Chapter 13 (commencing with Section 114380), inclusive, of Part 7 of Division 104 of the Health and Safety Code, or any requirement or standard for the protection of public health, public safety, or worker safety established by federal, state, or local government or recommended by recognized standard setting organizations or trade associations.

10608.28.

(a) An urban retail water supplier may meet its urban water use target within its retail service area, or through mutual agreement, by any of the following:

(1) Through an urban wholesale water supplier.

(2) Through a regional agency authorized to plan and implement water conservation, including, but not limited to, an agency established under the Bay Area Water Supply and Conservation Agency Act (Division 31 (commencing with Section 81300)).

(3) Through a regional water management group as defined in Section 10537.

(4) By an integrated regional water management funding area.

(5) By hydrologic region.

(6) Through other appropriate geographic scales for which computation methods have been developed by the department.

(b) A regional water management group, with the written consent of its member agencies, may undertake any or all planning, reporting, and implementation functions under this chapter for the member agencies that consent to those activities. Any data or reports shall provide information both for the regional water management group and separately for each consenting urban retail water supplier and urban wholesale water supplier.

10608.32. All costs incurred pursuant to this part by a water utility regulated by the Public Utilities Commission may be recoverable in rates subject to review and approval by the Public Utilities Commission, and may be recorded in a memorandum account and reviewed for reasonableness by the Public Utilities Commission.

10608.36. Urban wholesale water suppliers shall include in the urban water management plans required pursuant to Part 2.6 (commencing with Section 10610) an assessment of their present and proposed future measures, programs, and policies to help achieve the water use reductions required by this part.

10608.40. Urban water retail suppliers shall report to the department on their progress in meeting their urban water use targets as part of their urban water management plans submitted pursuant to Section 10631. The data shall be reported using a standardized form developed pursuant to Section 10608.52.

10608.42. The department shall review the 2015 urban water management plans and report to the Legislature by December 31, 2016, on progress towards achieving a 20-percent reduction in urban water use by December 31, 2020. The report shall include recommendations on changes to water efficiency standards or urban water use targets in order to achieve the 20-percent reduction and to reflect updated efficiency information and technology changes.

10608.43. The department, in conjunction with the California Urban Water Conservation Council, by April 1, 2010, shall convene a representative task force consisting of academic experts, urban retail water suppliers, environmental organizations, commercial water users, industrial water users, and institutional water users to develop alternative best management practices for commercial, industrial, and institutional users and an assessment of the potential statewide water use efficiency improvement in the commercial, industrial, and institutional sectors that would result from implementation of these best management practices. The taskforce, in conjunction with the department, shall submit a report to the Legislature by April 1, 2012, that shall include a review of multiple sectors within commercial, industrial, and institutional users and that shall recommend water use efficiency standards for commercial, industrial, and institutional users among various sectors of water use. The report shall include, but not be limited to, the following:

(a) Appropriate metrics for evaluating commercial, industrial, and institutional water use.

(b) Evaluation of water demands for manufacturing processes, goods, and cooling.

(c) Evaluation of public infrastructure necessary for delivery of recycled water to the commercial, industrial, and institutional sectors.

(d) Evaluation of institutional and economic barriers to increased recycled water use within the commercial, industrial, and institutional sectors.

(e) Identification of technical feasibility and cost of the best management practices to achieve more efficient water use statewide in the commercial, industrial, and institutional sectors that is consistent with the public interest and reflects past investments in water use efficiency.

10608.44. Each state agency shall reduce water use at facilities it operates to support urban retail water suppliers in meeting the target identified in Section 10608.16.

Appendix C: 2010 UWMP Checklist of Required Elements

Urban Water Management Plan checklist, organized by subject

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
PLAN PREPARATION				
4	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	10620(d)(2)		Page 1-1, Section 1.2.1 & Appendix D (D-1)
6	Notify, at least 60 days prior to the public hearing on the plan required by Section 10642, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. Any city or county receiving the notice may be consulted and provide comments.	10621(b)		Page 1-1, Section 1.2.1 & Appendix D (D-1)
7	Provide supporting documentation that the UWMP or any amendments to, or changes in, have been adopted as described in Section 10640 et seq.	10621(c)		Appendix F
54	Provide supporting documentation that the urban water management plan has been or will be provided to any city or county within which it provides water, no later than 60 days after the submission of this urban water management plan.	10635(b)		Page 1-1, Section 1.2.1
55	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan.	10642		Page 1-2, Table 1.1, Section 1.2.2 & Appendix D (D-2)
56	Provide supporting documentation that the urban water supplier made the plan available for public inspection and held a public hearing about the plan. For public agencies, the hearing notice is to be provided pursuant to Section 6066 of the Government Code. The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water. Privately-owned water suppliers shall provide an equivalent notice within its service area.	10642		Page 1-2, Section 1.2.2 & Appendix D
57	Provide supporting documentation that the plan has been adopted as prepared or modified.	10642		Appendix F

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
58	Provide supporting documentation as to how the water supplier plans to implement its plan.	10643		Page 1-3, Section 1.3
59	Provide supporting documentation that, in addition to submittal to DWR, the urban water supplier has submitted this UWMP to the California State Library and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. This also includes amendments or changes.	10644(a)		Page 1-3, Section 1.3
60	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the urban water supplier has or will make the plan available for public review during normal business hours	10645		Page 1-3, Section 1.3
SYSTEM DESCRIPTION				
8	Describe the water supplier service area.	10631(a)		Page 2-1, Section 2.1 & 2.2 Figure 2-1 (p. 2-3)
9	Describe the climate and other demographic factors of the service area of the supplier	10631(a)		Page 2-2, Section 2.2.2 & 2.3
10	Indicate the current population of the service area	10631(a)	Provide the most recent population data possible. Use the method described in "Baseline Daily Per Capita Water Use." See Section M.	Page 2-2, Section 2.3 (Table 2-2) & Figure 2-2 (p. 2-4)
11	Provide population projections for 2015, 2020, 2025, and 2030, based on data from State, regional, or local service area population projections.	10631(a)	2035 and 2040 can also be provided to support consistency with Water Supply Assessments and Written Verification of Water Supply documents.	Page 2-5 of Section 2.3 (Table 2-2)
12	Describe other demographic factors affecting the supplier's water management planning.	10631(a)		Pages 2-2 – 2-5, Section 2.3
SYSTEM DEMANDS				
1	Provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.	10608.20(e)		Pages 3-3 – 3-6, All of Section 3.2, & Figure 3-1 (p. 3-7)

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
2	*Wholesalers:* Include an assessment of present and proposed future measures, programs, and policies to help achieve the water use reductions. *Retailers:* Conduct at least one public hearing that includes general discussion of the urban retail water supplier's implementation plan for complying with the Water Conservation Bill of 2009.	10608.36 10608.26(a)	Retailers and wholesalers have slightly different requirements	Pages 3-8 – 3-10, Section 3.4 & Appendix D
3	Report progress in meeting urban water use targets using the standardized form.	10608.40	Standardized form not yet available	Not Applicable
25	Quantify past, current, and projected water use, identifying the uses among water use sectors, for the following: (A) single-family residential, (B) multifamily, (C) commercial, (D) industrial, (E) institutional and governmental, (F) landscape, (G) sales to other agencies, (H) saline water intrusion barriers, groundwater recharge, conjunctive use, and (I) agriculture.	10631(e)(1)	Consider 'past' to be 2005, present to be 2010, and projected to be 2015, 2020, 2025, and 2030. Provide numbers for each category for each of these years.	Pages 3-1 – 3-1, Section 3.1 (3.1.1 & 3.1.2)
33	Provide documentation that either the retail agency provided the wholesale agency with water use projections for at least 20 years, if the UWMP agency is a retail agency, OR, if a wholesale agency, it provided its urban retail customers with future planned and existing water source available to it from the wholesale agency during the required water-year types	10631(k)	Average year, single dry year, multiple dry years for 2015, 2020, 2025, and 2030.	Page 3-8, Section 3.3
34	Include projected water use for single-family and multifamily residential housing needed for lower income households, as identified in the housing element of any city, county, or city and county in the service area of the supplier.	10631.1(a)		Page 3-2, Section 3.1.2
SYSTEM SUPPLIES				
13	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, and 2030.	10631(b)	The 'existing' water sources should be for the same year as the "current population" in line 10. 2035 and 2040 can also be provided.	Pages 4-1 – 4-3, Sections 4.1 – all of Section 4.2
14	Indicate whether groundwater is an existing or planned source of water available to the supplier. If yes, then complete 15 through 21 of the UWMP Checklist. If no, then indicate "not applicable" in lines 15 through 21 under the UWMP location column.	10631(b)	Source classifications are: surface water, groundwater, recycled water, storm water, desalinated sea water, desalinated brackish groundwater, and other.	Page 4-3, Section 4.3

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
15	Indicate whether a groundwater management plan been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	10631(b)(1)		Page 4-3, Section 4.3 & Attachment A
16	Describe the groundwater basin.	10631(b)(2)		Page 4-4, Section 4.3.1 (Figure 4-1 & 4-2)
17	Indicate whether the groundwater basin is adjudicated? Include a copy of the court order or decree.	10631(b)(2)		Page 4-4, Section 4.3.1
18	Describe the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. If the basin is not adjudicated, indicate “not applicable” in the UWMP location column.	10631(b)(2)		Not applicable
19	For groundwater basins that are not adjudicated, provide information as to whether DWR has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition. If the basin is adjudicated, indicate “not applicable” in the UWMP location column.	10631(b)(2)		Page 4-4, Section 4.3.1
20	Provide a detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years	10631(b)(3)		Pages 4-4 – 4-6, Section 4.3.2 (Table 4-4)
21	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	10631(b)(4)	Provide projections for 2015, 2020, 2025, and 2030.	Page 4-6, Section 4.3.4
24	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	10631(d)		Page 4-9, All of Section 4.4
30	Include a detailed description of all water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and multiple-dry years, excluding demand management programs addressed in (f)(1). Include specific projects, describe water supply impacts, and provide a timeline for each project.	10631(h)		Pages 4-11 – 4-13, All of Section 4.6; Page 4-15, Section 4.7.1
31	Describe desalinated water project opportunities for long-term supply, including, but not limited to, ocean water, brackish water, and groundwater.	10631(i)		Page 4-10 – 4-11, Section 4.5

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
44	Provide information on recycled water and its potential for use as a water source in the service area of the urban water supplier. Coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.	10633		Pages 4-11 – 4-13, All of Section 4.6
45	Describe the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.	10633(a)		Page 4-14, Section 4.6.2
46	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	10633(b)		Page 4-14, Section 4.6.2
47	Describe the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.	10633(c)		Page 4-14, Section 4.6.2
48	Describe and quantify the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.	10633(d)		Page 4-11 – 4-12, Section 4.6 (including Section 4.6.1)
49	The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected.	10633(e)		Page 4-12, Table 4-7
50	Describe the actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.	10633(f)		Page 4-12 of Section 4.6.1 (last paragraph)
51	Provide a plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.	10633(g)		Page 4-17, Section 4.6.3
WATER SHORTAGE RELIABILITY AND WATER SHORTAGE CONTINGENCY PLANNING [b]				
5	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	10620(f)		Page 5-1, Section 5.1.1 & Appendix G
22	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage and provide data for (A) an average water year, (B) a single dry water year, and (C) multiple dry water years.	10631(c)(1)		Page 5-2 – 5-3, Section 5.1.2 (Table 5-1 & 5-2)

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
23	For any water source that may not be available at a consistent level of use - given specific legal, environmental, water quality, or climatic factors - describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable.	10631(c)(2)		Page 5-2, Sec. 5.1.2; Page 5-4, Sec. 5.3; Pages 5-4 – 5-6, All of Sec. 5.4; Pages 5-6 – 5-7, Sec. 5.5 (Table 5-4)
35	Provide an urban water shortage contingency analysis that specifies stages of action, including up to a 50-percent water supply reduction, and an outline of specific water supply conditions at each stage	10632(a)		Pages 5-8 – 5-9, Section 5.6
36	Provide an estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply.	10632(b)		Page 5-13, Section 5.7.1 & Page 3-8, Sec. 3.3
37	Identify actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.	10632(c)		Pages 5-9 – 5-10, Section 5.6.2
38	Identify additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.	10632(d)		Page 5-10, Section 5.6.3
39	Specify consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.	10632(e)		Pages 5-10 - 5-12, Section 5.6.4
40	Indicated penalties or charges for excessive use, where applicable.	10632(f)		Pages 5-10 - 5-12, Section 5.6.4
41	Provide an analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.	10632(g)		Page 5-12 – 5-13 Section 5.6.5
42	Provide a draft water shortage contingency resolution or ordinance.	10632(h)		Appendix F

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
43	Indicate a mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.	10632(i)		Page 5-13, Section 5.7.2
52	Provide information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments, and the manner in which water quality affects water management strategies and supply reliability	10634	For years 2010, 2015, 2020, 2025, and 2030	Pages 5-4 – 5-6, All of Section 5.4
53	Assess the water supply reliability during normal, dry, and multiple dry water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. Base the assessment on the information compiled under Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.	10635(a)		Pages 5-13 - 5-16 Section 5.8
DEMAND MANAGEMENT MEASURES				

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
26	Describe how each water demand management measures is being implemented or scheduled for implementation. Use the list provided.	10631(f)(1)	Discuss each DMM, even if it is not currently or planned for implementation. Provide any appropriate schedules.	p. 6-1 -6-2, Sec 6.1.1; p. 6-5 – 6-6, Sec 6.1.2; p. 6-6 – 6-7, Sec 6.1.3; p. 6-7, Sec 6.1.4; p. 6-8, Sec 6.1.5; p. 6-9 – 6-10, Sec 6.1.6; p. 6-10 – 6-11, Sec 6.1.7; p. 6-11, Sec 6.1.8; p. 6-12 – 6-13, Sec 6.1.9; p. 6-13 – 6-14, Sec 6.1.11; p. 6-14 -6-15, Sec 6.1.12; p. 6-15 – 6-16, Sec 6.1.13; p. 6-16 – 6-17, Sec 6.1.14

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
27	Describe the methods the supplier uses to evaluate the effectiveness of DMMs implemented or described in the UWMP.	10631(f)(3)		p. 6-3, Sec 6.1.1; p. 6-6, Sec 6.1.2; p. 6-7, Sec 6.1.3; p. 6-7, Sec 6.1.4; p. 6-8 – 6-9, Sec 6.1.5; p. 6-10, Sec 6.1.6; p. 6-11, Sec 6.1.7; p. 6-11 -6-12, Sec 6.1.8; p. 6-13, Sec 6.1.9; p. 6-14, Sec 6.1.11; p. 6-15, Sec 6.1.12; p. 6-16, Sec 6.1.13; p. 6-17, Sec 6.1.14

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
28	Provide an estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the ability to further reduce demand.	10631(f)(4)		p. 6-3, Sec 6.1.1 (Table 6-2); p. 6-6, Sec 6.1.2 (Table 6-4); p. 6-8 – 6-9, Sec 6.1.5, (Table 6-5 & 6-6) p. 6-10, Sec 6.1.6 (Table 6-7); p. 6-12, Sec 6.1.8; p. 6-13, Sec 6.1.9; p. 6-14, Sec 6.1.11; p. 6-15, Sec 6.1.12; p. 6-17, Sec 6.1.14 (Table 6-12)
29	Evaluate each water demand management measure that is not currently being implemented or scheduled for implementation. The evaluation should include economic and non-economic factors, cost-benefit analysis, available funding, and the water suppliers' legal authority to implement the work.	10631(g)	See 10631(g) for additional wording.	Pages 6-3 – 6-5, Under Section 6.1.1
32	Include the annual reports submitted to meet the Section 6.2 requirements, if a member of the CUWCC and signer of the December 10, 2008 MOU.	10631(j)	Signers of the MOU that submit the annual reports are deemed compliant with Items 28 and 29.	Not Applicable

a The UWMP Requirement descriptions are general summaries of what is provided in the legislation. Urban water suppliers should review the exact legislative wording prior to submitting its UWMP.

b The Subject classification is provided for clarification only. It is aligned with the organization presented in Part I of this guidebook. A water supplier is free to address the UWMP Requirement anywhere with its UWMP, but is urged to provide clarification to DWR to facilitate review.

Appendix D: Outreach Documentation

- **Notice sent to Alameda County through member agency Zone 7 Water Agency, San Francisco Public Utilities Commission, and the Retailers**
- **Press Release**
- **Notice of Public Hearing**

[Notice sent to Alameda County through member agency Zone 7 Water Agency, San Francisco Public Utilities Commission, and the Retailers; Mailed March 2011]:

Urban Water Master Plan Update

In accordance with the California Urban Water Management Planning Act (UWMP Act) and the Water Conservation Bill of 2009, the City of Pleasanton is preparing its 2010 Urban Water Management Plan (UWMP). The City's UWMP is a guide used to ensure adequate water supplies are available to meet existing and future water demand.
This notice is to inform and encourage your agency to participate in the preparation of the City of Pleasanton's 2010 UWMP.

The UWMP will report, describe, and evaluate the City of Pleasanton's water deliveries and uses, water supply sources, demand management measures, and the City of Pleasanton's plan to achieve a reduction of potable water use by 20% by 2020.

A draft of the City's 2010 UWMP is expected to be released for public review in April. The statues of the 2010 UWMP will be posted on the City of Pleasanton's website @ www.ci.pleassanton.ca.us. A subsequent letter will notify your agency of the date and time the City will host a public hearing to provide opportunity for comments on the draft.

Questions or comments regarding the City of Pleasanton's UWMP should be sent to: rdicandia@ci.pleasanton.ca.us

[Public Press Release]:

THE CITY OF PLEASANTON

PRESS RELEASE

FOR IMMEDIATE RELEASE
April 14, 2011

Contact: Rita Di Candia
(925) 931-5513
rdicandia@ci.pleasanton.ca.us

City of Pleasanton Urban Water Master Plan Update

Pleasanton, CA---The City of Pleasanton is currently revising its 2010 Urban Water Management Plan (UWMP) in accordance with the California Urban Water Management Planning Act (UWMP Act) and the Water Conservation Bill of 2009. Pleasanton's UWMP is a guide used to ensure that adequate water supplies are available to meet existing and future water demand.

The 2010 UWMP will report, describe, and evaluate the City's water deliveries and uses, identify water supply sources and management measures, and provide a blueprint to achieve a reduction of potable water use of 20% by 2020.

The public is encouraged to participate in the development of this document and can learn more about the process by visiting *http://www.water.ca.gov/urbanwatermanagement/*. The City's 2002 UWMP can also be viewed at *www.pleasantonwaterconservation.com* along with a draft of the 2010 UWMP that will be released later this month.

Questions or comments regarding the City of Pleasanton's UWMP should be sent to:
Rita Di Candia at *rdicandia@ci.pleasanton.ca.us* or (925) 931-5513.

About the City of Pleasanton

The City of Pleasanton is a vibrant Northern California community of 70,000 residents situated at the crossroads of Interstates 580 and 680, in close proximity to the San Francisco and San Jose metropolitan areas. The city's location has historical significance as a major trading route of early Native Americans and later along the route of the First Transcontinental Railroad. Pleasanton is a major suburb identified by the U.S. Census as one of the wealthiest middle-sized cities in the nation and, in 2010, was included on

Money Magazine's list of the '100 Best Small Cities to Live in America.' Among Pleasanton's many attractions are an excellent school system, a highly educated workforce, 1,200 acres of parkland and recreational open space, a nationally recognized business park, a regional retail shopping mall, and a historic downtown district. For more information, please visit www.ci.pleasanton.ca.us.

-PLEASANTON-

[Public Hearing Notification]:

Appendix E: Comments and Responses

No official comments were received during the public comment period.

Appendix F: Adoption of 2010 City of Pleasanton UWMP

Appendix G: City of Pleasanton's Water Shortage Contingency Plan

[1991 City of Pleasanton Water Shortage Ordinance]:

Chapter 9.30 WATER CONSERVATION PLAN

9.30.010 Declaration of emergency.

It is hereby found and declared that a water shortage and emergency exists within the water service area of the city, as total projected customer water use from May through September (the peak summer period of this and any future year), may exceed the projected water supply for the same period. It is necessary to regulate and prohibit certain water uses as provided in this chapter in order to address adequately this water shortage and emergency. (Ord. 1508 § 1, 1991)

9.30.020 Declaration of purpose.

The purpose of this chapter is to provide both voluntary and mandatory water conservation stages to minimize the effect of a shortage of water on the city's customers and, by means of this chapter, to adopt provisions that will significantly reduce the consumption of water over an extended period of time, thereby extending the available water required for the city's customers while reducing the hardship to the greatest extent possible on or to the city and on or to the general public. (Ord. 1508 § 1, 1991)

9.30.030 Application of chapter.

The provisions of this chapter shall apply to all customers, as defined herein, regardless of whether any customer using water shall have a contract for water service with the city. Notwithstanding other municipal code provisions inconsistent with this chapter, the provisions of this chapter shall supersede and prevail for the duration of the emergency and until termination of this chapter. (Ord. 1508 § 1, 1991)

9.30.040 Definitions.

A. "Allocation" means the amount of water used by a customer during the comparable summer billing period in 1990, as reduced by the percentage established in Stage II through Stage VI herein; provided, however, that for residential customers, the allocation shall never exceed the "ceiling" as established in the various stages.

B. "Ceiling" means twice the amount of the "floor".

C. "City" means the city of Pleasanton.

D. "Customer" means a person, firm, partnership, association, corporation and all other institutions and businesses receiving water from the water distribution system of the city.

E. "Director" means the operations services director of the city.

F. “Floor” means the average summer water use during 1990 for each residential customer classification, as reduced by the percentage established in Stage II through Stage VI herein. For example, the average summer water use during 1990 for single-family residential customers was 703 GPD; in Stage II, the average (703 GPD) would be reduced by 25 percent to yield a “floor” of 525 GPD.

G. “Excess Use” means the difference between a customer’s actual consumption of water for the billing period and the customer’s allocation.

H. “GPD” means gallons per day.

I. “Summer” means the months of May through September, inclusive. (Ord. 2000 § 1, 2009; Ord. 1508 § 1, 1991)

9.30.050 Creation of classes.

The following classes of customers or uses are hereby created:

A. “Single-family residential” consists of water service to land improved with structures designed to serve as a residence for a single-family.

B. “Multiple-family residential—apartments” consists of water service to land improved with structures designed to serve as apartments.

C. “Multiple-family residential—townhouses/ condominiums” consists of water service to land improved with structures designed to serve as townhouses or condominiums.

D. “Nonresidential” consists of water service to land improved with structures designed to serve water for other than residential uses. Commercial (including restaurants), recreational, charitable, educational and cultural uses are included in this class.

E. “Irrigation” consists of water service which is separately metered and is used exclusively to water turf and other landscaping areas. (Ord. 1508 § 1, 1991)

9.30.060 Reduction in water use.

A. The following stages of reduction in water use depend on the total amount of water supplied to the city by Zone 7 and the amount of water the city is able to pump out of the groundwater basin from its own wells. These stages are based upon the following information concerning city customers:

1. Summer use for single-family residential customers is approximately 5,650 cubic feet bimonthly or 703 GPD.

2. Summer use for multiple-family residential—apartment customers is approximately 1,300 cubic feet bimonthly or 162 GPD per apartment unit.

3. Summer use for multiple-family residential—townhouse/condominium customers is 18.7 hundred cubic feet bimonthly or 233 GPD per townhouse/ condominium unit.

B. Based upon these uses and the proposed reductions in deliveries from Zone 7, the director is empowered to impose and enforce reductions in each of the following stages of this section when it is determined, through engineering analysis, that the available daily water demand exceeds, or is expected to exceed, the daily water supply from all of the city's sources.

(Ord. 1560 § 1, 1992; Ord. 1508 § 1, 1991)

9.30.140 Excess use penalties.

A. In order to achieve compliance with this chapter, the city council shall impose penalties for violations of this chapter. Dollar amounts of these penalties shall be established by separate city council resolution.

B. Level one penalties.

1. Any residential customer who uses water in excess of the customer's allocation, but which use does not exceed the floor as established in the particular stage, shall be subject to level one penalties.

C. Level two penalties.

1. Any residential customer who uses water in excess of the customer's allocation, which use exceeds the floor, but which use does not exceed the ceiling, shall be subject to level two penalties for all excess use.

2. Any nonresidential customer who uses water in excess of the customer's allocation shall be subject to level two penalties for all excess use.

D. Level three penalties.

1. Any residential customer who uses water in excess of the ceiling amount, as established in the particular stage, shall be subject to level three penalties for all excess use.

2. Any irrigation customer who uses water which exceeds the customer's allocation shall be subject to level three penalties for all excess use. (Ord. 1508 § 1, 1991)

9.30.150 Prohibition of certain water uses.

During the time this chapter is in effect:

A. It is unlawful for any customer to use water obtained from the water system of the city of Pleasanton through fraud, including misrepresentation made to obtain a particular allocation.

B. It is unlawful for any customer to waste water. As used herein, the term "waste" means:

1. Use of potable water between 10:00 a.m. and 4:00 p.m. to irrigate grass, lawns, ground-cover, shrubbery, crops, vegetation, and trees or the use of potable water in such a manner as to result in runoff for more than five minutes;

2. Use of potable water to wash down sidewalks, walkways, driveways, parking lots, open ground or other hard surface areas by the direct application of water thereto;

3. Allowing potable water to escape from breaks within the customer's plumbing system for more than eight hours after the customer is notified or discovers the break;

4. Use of potable water for any purpose in excess of the customer's allocation. (Ord. 1508 § 1, 1991)

9.30.160 Adjustments.

A. Any customer who believes that the application of the provisions of this chapter results in unfair treatment or causes undue hardship may seek an adjustment in the customer's allocation.

B. Such customer shall request the adjustment in writing and shall state with specificity the reasons why the adjustment is warranted.

C. The director and The finance director shall consider all requests and make a recommendation on the request to the city manager. In formulating a recommendation, the director and finance director shall give particular consideration to the following:

1. The reduction would cause conditions threatening to health, sanitation, fire protection or safety of the customer, the customer's dependents or the general public.

2. The reduction would cause unfair economic hardship including, but not limited to, loss of employment, loss of production, or loss of jobs or be unfair or result in the unnecessary loss of a business.

3. Medical requirements of the customer.

4. Household size of the residential customer.

The city manager's decision as to the request shall be final. (Ord. 1508 § 1, 1991)

9.30.170 Notification to customers.

When the director determines that it is necessary to move from one stage of conservation to another, customers will be notified by publication in the newspaper and/or by mail. The failure

of any customer to receive actual notice shall not invalidate any action taken by the director as to a particular customer nor reduce the amount of the penalties provided herein. (Ord. 1508 § 1, 1991)

9.30.180 Calculation of allowable water use for new customers.

Where the current customer has no billing history, or only a partial billing history, the city shall determine the customer's allocation, based upon the allocation for similar customers. (Ord. 1508 § 1, 1991)

9.30.190 Severability.

If any provision of this chapter is held to be unconstitutional, it is the intent of the city council that such portion of such chapter be severable from the remainder and that the remainder be given full force and effect. (Ord. 1508 § 1, 1991)

[Tri-Valley Water Retailers Water Shortage Contingency Plan]:

TRI-VALLEY WATER RETAILERS
WATER SHORTAGE CONTINGENCY PLAN

This Water Shortage Contingency Plan ("Plan") was developed to provide a common and uniform basis among the Tri-Valley Water Retailers ("Retailers) for requesting and/or requiring cutbacks in potable water consumption due to cutbacks and/or restrictions in potable water supplies. The purpose of the Plan is to guide the Retailers in preparing ordinances and/or regulations that allow for consistent requirements and implementation when activated within the Zone 7 service area.

ACTIVATION

Activation of the Plan shall be made by resolution of the legislative bodies of the public members of the Retailers or by management direction of the California Water Service Company. The intent of the Plan is that the Tri-Valley Water Retailers staff would meet before making a consistent recommendation as to which Stage of the Plan should be activated in response to local or statewide water supply conditions, as well as to set the appropriate water consumption reduction goal.

A recommendation for activation may stem from:

1) A request from Zone 7 to the Retailers to reduce consumption, most likely including a specific reduction goal;
2) As the result of the collective consideration of the Retailer staff that would also include a recommended reduction goal; or
3) A decision by one or more Retailers which may or may not include a reduction goal.

FORMAT

Each stage in the plan is organized in the following manner:

- **Definition**: This is the condition of the water supply that would normally trigger this element of the Plan.

- **Message**: This is an example of the message that might be

the specific situation.

Stage 1 - Minimal Reduction:

- **Definition:** There is sufficient uncertainty concerning water supplies for this year or in the next few years that it would be prudent to conserve local water supplies so that these supplies may be used to meet water demands in future years.
- **Message**: We think we can deliver all the water our customers want, but request their help to conserve water to be sure local and imported supplies are adequate to meet future years' water demands - please conserve.
- **Type:** Voluntary
- **Expected Reduction:** Up to 20%

Stage 2 - Moderate Reduction:

- **Definition:** There are definable events that lead to a reasonable conclusion that in the current and/or upcoming water years, water supplies may not be adequate to meet all customer water demands.
- **Message**: We may not be able to deliver all the water our customers want and we need customers' help to conserve water.
- **Type:** Voluntary or Mandatory
- **Expected Reduction:** up to 20%

Stage 3 - Severe Reduction:

- **Definition:** There are definable events that lead to a firm conclusion that in the current water year, water supplies will not be adequate to meet customers' water demands.

facility.

- **Message**: A very serious problem has occurred and we are unable to deliver sufficient water for human consumption, sanitation and/or fire protection.
- **Type:** Mandatory in designated areas.
- **Expected Reduction**: Varies by area in response to specific situation.

CONSERVATION

Included below is a list of conservation measures that the Retailers may implement under the Normal Supply condition, and during each stage of conservation to achieve the reduction goal desired. While retailers are not expected to implement identical conservation measures, adopting similar measures will help to maintain a general balance of water conserving impacts and measures across the Tri-Valley.

Water Conservation Measures Expected Of Our Customers

The Plan includes the recommended conservation measures to be implemented at each stage. The conservation measures within each stage are additive in that each stage includes all of the conservation measures of the previous stages. For example, Stage 1 includes all activities listed under Normal as well as Stage 1; Stage 2 includes all activities listed under Normal, Stage 1 and Stage 2; and so on. Also, in an emergency, agencies have the authority to implement any or all of the measures detailed in this plan.

Conservation Measure	Normal	Stage			
		1	2	3	4
Landscape Irrigation (SFR, MFR, CII)*					
Shut-off nozzles; no runoff, over spray, or saturation of landscape	X	X	X	X	X
Sprinklers 9 p.m. to 6 a.m.; train/educate regarding water conserving irrigation systems and dry climate plants		X			

Water

A cooperative effort of
the City of Livermore, the City of Pleasanton,
Dublin San Ramon Services District,
and the California Water Service Company

Conservation Measure	Normal	Stage			
		1	2	3	4
encourage use of commercial wash services that recycle water					
Only wash vehicles at commercial establishments that recycle water; use broom on buildings, pavement				X	
No washing with potable water					X
New or Additional Service (SFR, MFR, CII)					
Allowed	X	X	X		
Subject to SB610 definition				X	X
Water for Construction (CII)					
No restrictions	X				
Use recycled water if cost effective; otherwise potable water use OK		X	X		
Only recycled water (potable can be used for public health and safety projects)				X	X
*SFR, single family residents; MFR, multi family residents, CII, commercial industrial and institutional customers					
Restaurants (CII)					
Offer rebates on low flow rinse nozzles; post water conservation messages on bathroom mirrors	X	X			
Require use of low flow rinse nozzles; require they serve water only on request			X	X	X
Laundromats (CII)					
No restrictions	X	X	X	X	
Turn off water if no efficient washing machines					X

Appendix H: Zone 7's Resolution 04-2662

ZONE 7
ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

BOARD OF DIRECTORS

RESOLUTION NO 04-2662

INTRODUCED BY DIRECTOR MARCHAND
SECONDED BY DIRECTOR CONCANNON

Reliability Policy for Municipal & Industrial Water Supplies

WHEREAS, the Zone 7 Board of Directors desires to maintain a highly reliable Municipal and Industrial (M&I) water supply system so that existing and future M&I water demands can be met during varying hydrologic conditions; and

WHEREAS, the Board has an obligation to communicate to its M&l customers and municipalities within its service area the ability of the Zone's water supply system to meet projected water demands.

WHEREAS, the Board on May 15, 2002 adopted Resolution No. 02-2382 setting forth its Reliability Policy for Municipal & Industrial Water Supplies; and

WHEREAS, the Zone's current water supply policy includes a provision for a valley-wide groundwater production capability to meet 75% of valley-wide M&I demand in the event of an outage of the South Bay Aqueduct; and

WHEREAS, the Board desires to revise the Reliability Policy to include all Zone 7 water supply facilities and to clarify demand levels for planning purposes;

NOW, THEREFORE, BE IT RESOLVED that the Board hereby rescinds Resolution No. 02-2382 adopting the May 15, 2002 Reliability Policy for Municipal & Industrial Water Supplies; and

BE IT FURTHER RESOLVED that the Board hereby adopts the following policy goals regarding reliability[1] to guide the management of the Zone's M&I water supplies as well as its Capital Improvement Program (CIP)[2]:

GOAL 1. Meet 100% of its treated water customers water supply needs in accordance with Zone 7's most current Contracts for M&I Water Supply, including existing and projected demands for the next 20 years as specified in Zone 7's Urban Water Management Plan, (UWMP), which will be coordinated with Zone 7's M&I water Contractors. Zone 7 will endeavor to meet this goal during an average water year[3], a single dry water year[4], and multiple dry water years[5], and

GOAL 2: Provide sufficient treated water production capacity and infrastructure to meet at least 75% of the maximum daily M&I contractual demands should any one of Zone 7's major supply, production or transmission facilities experience an extended unplanned outage.

BE IT FURTHER RESOLVED that to ensure that this Board policy is carried out effectively, the Zone 7 General Manager will provide a water supply status report to the Board every five years with the Zone 7 Urban Water Management Plan that specifies how these goals can be, or are being, achieved.

If the General Manager finds that the goals might not be met, then the Board will hold a public hearing within two months of the General Manager's finding to consider remedial actions that will bring the Zone into substantial compliance with the stated reliability goals. Remedial actions may include, but are not limited to, voluntary conservation or mandatory rationing to reduce water demands, acquisition of additional water supplies, and/or a moratorium on new water connections. After reviewing staff analyses and information gathered at the public hearing, the Board shall, as expeditiously as is feasible, take any additional actions that are necessary to meet the reliability goals during the following five-year period; and

BE IT FURTHER RESOLVED that the Zone 7 General Manager shall prepare an Annual Review of the Sustainable Water Supply Report which includes the following information:

(1) An estimate of the current annual average water demand for M&I water as well as a five-year projection based on the same information used to prepare the UWMP and CIP;

(2) A summary of available water supplies[6] to Zone 7 at the beginning of the calendar year;

(3) A comparison of current water demands with the available water supplies; and

(4) A discussion of water conservation requirements and other long-term water supply programs needed to meet Zone 7 M&I water demands for a single dry water year and multiple dry years, as specified in the Zone's UWMP.

A summary of this review will be provided to M & I customers.

Definitions

[1]**Reliability**—the ability of a water supply system to provide water during varying hydrologic conditions without the need for reductions in water use.

[2]**Capital Improvement Program (CIP)**—the CIP is the Zone's formal program for developing surface and ground water supplies, along with associated infrastructure, including import water conveyance facilities, surface water treatment plants, groundwater wells, and M&I water transmission system to meet projected water demands.

[3]**Average water year**—the statistical average quantity of water from all of the water supplies available to Zone 7 on a contractual or legal basis (e.g., surface water runoff to Del Valle reservoir), based on the historical hydrologic records available to Zone 7.

[4]**Single dry water year**—for the purposes of meeting the requirements of the UWMP, the Zone 7 staff will identify and justify the selection of a calendar year from the historic record that represents the lowest yield from all normally contracted or legally available supplies.

[5]**Multiple dry water years**—for the purposes of meeting the requirements of the UWMP, the Zone 7 staff will identify and justify the selection of three or more consecutive dry years from the historic record that represent the lowest yields from all normally contracted or legally available supplies.

[6]**Available water supplies** consist solely of (1) water supplies that the Zone 7 has contracted for (e.g., listed under Schedule A of the State Water Contract, dry-year water options, special contracts with other water districts, etc.) and (2) water actually stored in surface and subsurface reservoirs.

ADOPTED BY THE FOLLOWING VOTE:

AYES: DIRECTORS CONCANNON, GRECI, KOHNEN, MARCHAND, QUIGLEY

NOES: NONE

ABSENT: DIRECTORS KALTHOFF, STEVENS

ABSTAIN: NONE

I certify that the foregoing is a correct copy of a resolution Adopted by the Board of Directors of Zone 7 of Alameda County Flood Control and Water Conservation District on

August 18, 2004

By Vice President, Board of Directors

Attachment A: Zone 7's 2005 Groundwater Management Plan [CD]

http://www.zone7water.com/index.php?option=com_content&task=view&id=79&Itemid=350