

# ORANGE VALE WATER COMPANY



## 2010 Water Management Plan

June 2011



# Orange Vale Water Company

## 2010 Urban Water Management Plan



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**J. CROWLEY GROUP**  
**WATER RESOURCES PLANNING AND POLICY**

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# 1 Plan Preparation

The Urban Water Management Act (Act) became part of the California Water Code with the passage of Assembly Bill 797 during the 1983-1984 regular session of the California Legislature. The California Water Code requires every urban water supplier 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 to adopt and submit an Urban Water Management Plan (UWMP) every five years to the California Department of Water Resources (DWR). The specific planning requirements are in the California Water Code Division 6, Part 2.6 Urban Water Management Planning.

The core requirements for the UWMP include:

- A description of the water service area.
- A description of the existing and planned supply sources.
- Estimates of past, present, and projected water use.
- A description of opportunities for water transfers or exchanges.
- A description of water conservation Demand Management Measures (DMMs) already in place and planned, and other conservation measures.
- A description of the Water Shortage Contingency Plan.
- Recycled water opportunities.

The Delta Legislation passed in late 2009 resulted in a sweeping change for water management within the state. Although the majority of the legislation addresses new governance structures aimed at improving the health and management of the Delta, some elements also address demand management by water agencies throughout the state. In particular, SB 7X 7 Water Conservation, requires the state to achieve a 20 percent reduction in urban per capita water use by December 31, 2020, known as 20x2020. 20x2020 requirements are now incorporated into the 2010 UWMP requirements. In summary, the UWMP must include the baseline demand analysis, water use target analysis use for 2015 and 2020, and present a compliance plan to achieve the target demand reductions in the UWMP.

The Orange Vale Water Company (OVWC) 2010 UWMP presents each required element per the Department of Water Resources (DWR) 2010 Urban Water Management Plan Guidelines. With the passage of SB 7X 7, DWR was tasked with developing the 20x2020 methodologies and guidelines to include in the 2010 UWMP. The legislation also provided an extra six months for agencies to complete the UWMP to incorporate all the new requirements. Therefore, the 2010 UWMP must be approved by an agency by June 30, 2011, and submitted to the DWR by August 1, 2011.

## **1.1 Coordination**

OVWC is part of the San Juan Water District Family, and routinely coordinates water resources with the other members of the San Juan Family. OVWC is also a member of the Regional Water Authority (RWA), and the Sacramento Groundwater Authority (SGA) and regularly coordinates water resources planning issues.

The UWMP requires specific coordination efforts as well. The agency must send a notice to all county and city governments within its service area of its intent to develop and adopt a 2010 UWMP. This notice must be sent at least 60 days prior to the public hearing to discuss the UWMP. A notice was sent to Sacramento County informing them of OVWC's UWMP process as presented in Attachment A.

A public review process was included in the UWMP development. OVWC held a public review of the UWMP to discuss the plan and receive comments from the public. The meeting was conducted at the May 03, 2011 Board Meeting. Public notice of the meeting was provided two weeks prior to the hearing, as is included in Attachment B.

The UWMP was approved at the June 07, 2011 Board meeting. The adoption resolution is provided in Attachment C. Within 60 days of submittal to the DWR, OVWC will also submit a copy of the UWMP to Sacramento County. Within 30 days of submittal to the DWR, OVWC will also submit a copy of the UWMP to California State Library, and make a copy of the UWMP available for public viewing at the Company's office during normal business hours located at 9031 Central Avenue, Orange Vale, CA 95662. Table 1-1 summarizes the coordination for OVWC's 2010 UWMP development process.

## **1.2 Implementation**

The 2005 UWMP presented the Company's plans for investigating additional supplies and continued implementation of the conservation program. The Company drilled a new well to improve overall supply reliability and enhance the SJWD and RWA conjunctive use strategy. However, the new well exceeds water quality standards for perchlorate. The Company is investigating alternative to mitigate the water quality issues or postpone any further efforts for now.

The company continues to implement and expand its conservation program. The Company is a member of the California Urban Water Conservation Council (CUWCC) and submits bi-annual reports on its progress. The Company is ahead of schedule for many of the best management practices (BMP) implementation requirements, as shown in the Conservation Program section of this UWMP. The Company continues to evaluate new BMP opportunities and adds programs for those that provide additional benefit.

Implementation of the 2010 UWMP will be tracked through a variety of methods. Supply reliability issues will mostly be tracked through the SJWD Family supply strategies. Progress and results of the conservation program will continue to be submitted to CUWCC, as well as to the DWR through the AB1420 compliance requirements. Compliance with the 20x2020 water demand targets will be tracked through the Company's customer billing database and supply production numbers. As a mutual

company, the Company is also required to submit bi-annual reports to the California Department of Corporations.

**Table 1-1. Coordination With Appropriate Agencies (DWR Table 1)**

Agency	Participated in Developing Plan	Commented on Draft	Attended Public Hearing	Contacted for Assistance	Sent Copy of Draft	Sent Notice of Intention to Adopt	Not Involved/ No Info.
San Juan Water District	X						
Citrus Heights Water District	X						
City of Folsom	X						
Fair Oaks Water District	X						
RWA				X		X	
SGA				X		X	
County of Sacramento				X			

## 2 System Description

OVWC is located in the northeast portion of Sacramento County, California, approximately 23 miles northeast of downtown Sacramento. Orange Vale Water Company was formed in 1896 and is the second oldest mutual water company in the state. The Company is part of the San Juan Water District Family, comprised of five retail agencies that all obtain surface water through the wholesaler, San Juan Water District. Figure 2-1 illustrates the service areas for each of the agencies, Orange Vale Water Company, Citrus Heights Water District, Fair Oaks Water District, City of Folsom, and San Juan Water District.

### 2.1 Service Area Description

In 1896, OVWC was incorporated as a general corporation for the purpose of delivering agricultural water to its landowners (shareholders) and members in an area of 3,078 acres. Land within the service area began experiencing gradual residential and commercial development in the 1950s. In 1994, OVWC adopted the California Non-Profit Mutual Benefit Corporation Law, and its shareholders became members. In 2010, there were 5,265 single/multiple family residential customers of the total 5,531 connections.

The entire service area is within the unincorporated boundary of Sacramento County. OVWC serves a unique mix of residential customers. Many of the original parcels were large 10-acre or larger parcels used for farming. Over time, these parcels have been split and subdivided. However, many parcels are still large lot customers with extensive outdoor irrigation requirements. For instance, approximately 40 percent of the Company's residential customers are on parcels larger than 1/3 of an acre. The many large-lot customers increase the Company's gallon per capita per day (gpcd) value as discussed further in the demand analysis in Chapter 3.

OVWC service area has cool, rainy winters, and hot, dry summers. The monthly temperature in the Sacramento area ranges from an average low of 39.5 to an average high of 91.5 degrees Fahrenheit (Western Regional Climate Center). In the past, extreme conditions have been recorded at 17 degrees Fahrenheit for the lowest temperature and 114 degrees Fahrenheit for the highest. The historical annual mean precipitation is 18.2 inches with a monthly precipitation as high as 14.2 inches and as low as 0 inches. The average evapotranspiration rate (ET<sub>o</sub>) is 50.5 inches.

### 2.2 Population

The 2010 UWMP Guidelines provide methodologies to use in calculating the service area population. The OVWC service area boundary does not match up with census tract or block group zones, and therefore population is estimated by applying factors obtained through the census data. The OVWC service area covers a portion of five census block groups, and completely encompasses one block group. The block groups in union with the OVWC service area are estimated and the corresponding percentage is applied to the census data. The Guidelines list a population analysis method that divides single family and multi-

family residential units for use in estimating population during non-census years. However, the Company's customer data was modified over this time period as many multi-family customers were switched to the single-family customer category to better reflect their water use. This resulted in inconsistent customer classification over the time period. To account for this, a simplifying method was developed that assigns total population to the total number of residential accounts.

Block group information from the 2000 Census was obtained to quantify population, housing units, capita per housing unit, and other information. The calculation assumes even distribution across the census area. Results are summarized in Table 2-1.

**Table 2-1. 2000 Population Analysis**

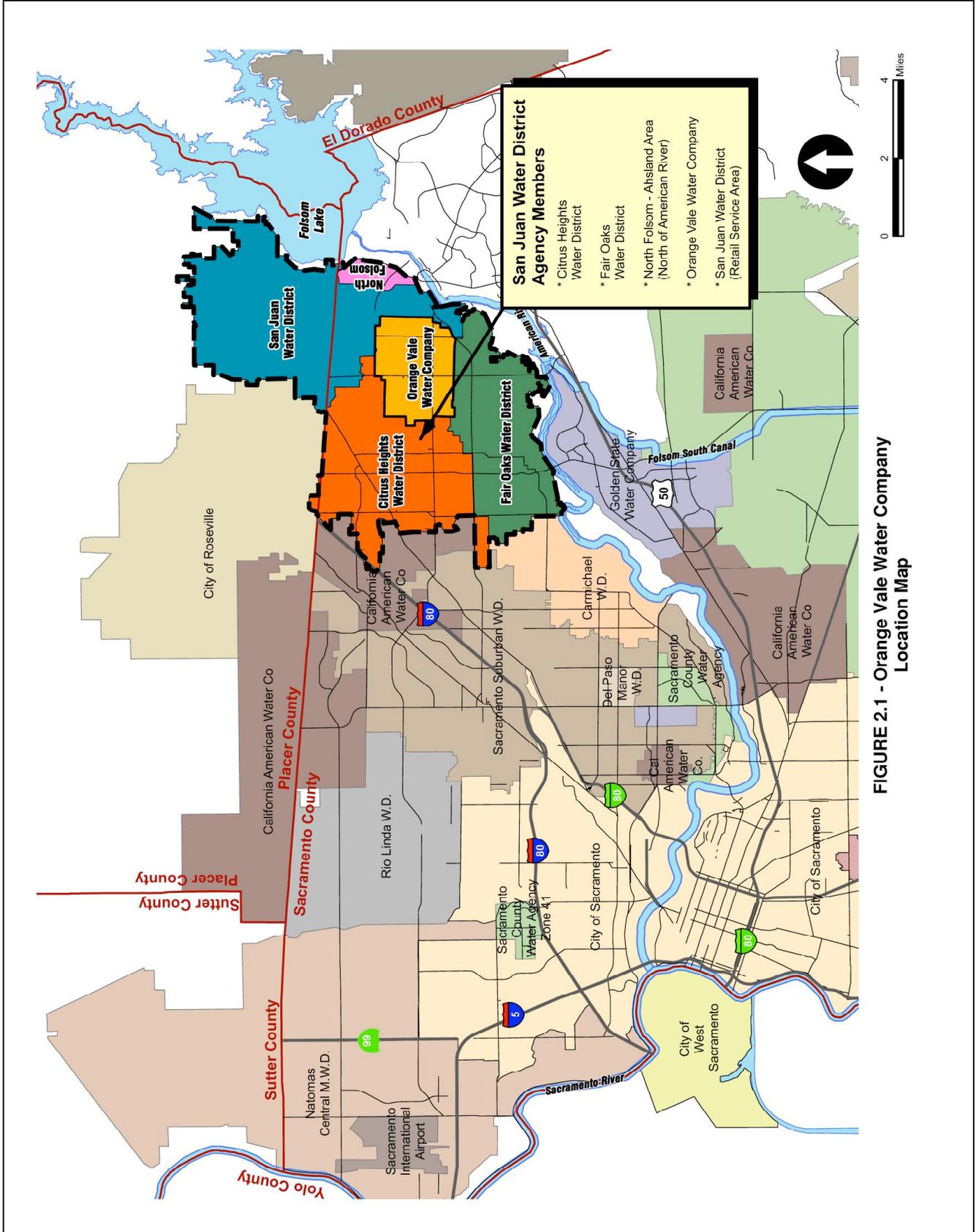
Census Block	Percent in OVWC Service Area	2000 Population in OVWC Service Area	2000 OVWC Number of Residential Accounts	2000 OVWC Capita per Residential Connection
81.45	10	777		
82.03	50	2,471		
82.04	50	2,248		
82.06	60	3,304		
82.08	100	4,633		
82.11	30	796		
Total:		14,228	4,934	2.88

Note: population data from 2000 Census

The estimated 2000 population value divided by the 2000 residential connection value provides a capita per residential connection of 2.88. This value is slightly higher than the Census capita per household value (2.78) because the multi-family connections often serve multiple households. Total population served is estimated as the number of residential connections times 2.88. This methodology assumes the capita per connection does not vary significantly over the analysis time period. Future population projections use the same value of 2.88 capita per connection times the future estimated connections. Future estimated connections are presented in Chapter 3, Water Demands. Resulting population projections are presented below in Table 2-2.

**Table 2-1. Population – Current and Projected (DWR Table 2)**

	2010	2015	2020	2025	2030	2035
Service Area Population	15,200	15,400	15,800	16,200	16,600	16,900



**FIGURE 2.1 - Orange Vale Water Company Location Map**

### 3 Water Demands

This section presents past and projected water demands. OVWC serves an older, established area where future growth is expected to be slow as the area nears buildout. The section also presents the 20x2020 baseline and target analysis. The Company projects that it will meet its 20x2020 requirements through continued implementation of its conservation program as described in Section 5.

#### 3.1 Past Demands

2005 and 2010 number of accounts and demands are listed in Tables 3-1 and 3-2, respectively. Starting in 2004, all customers were metered and charged on a metered rate. The Company has no connections that are classified as industrial. The few agricultural connections the Company maintains are for legacy operations that include mostly older orchards or pastures. The Company differentiates between types of landscape accounts. Parks and recreational areas are assigned their own customer category, Parks, which may include some non-irrigation uses such as restrooms or other public facilities. Irrigated Land are accounts that are strictly irrigation use such as parkways or commercial landscaping.

Actual unaccounted-for water (UAW) in 2005 is unknown. Once all customers were metered, it was noticed that the customer demand was larger than the metered supply provided. Subsequent investigations indicated the wholesale meters from San Juan Water District were mostly under-reading. Investigations estimated the under-reading at approximately 25 percent. UAW is estimated for 2005 as eight percent of total demand. See below for the full analysis and description of the wholesale meter adjustment methodology.

**Table 3-1. 2005 Demands (DWR Table 3)**

Customer Category	Metered		Not Metered		Total
	No. Accts	Volume, AFY	No. Accts	Volume, AFY	Volume, AFY
D – Domestic (Single Family)	4,937	3,494	0	0	3,494
M - Multi-Family	204	472	0	0	472
C - Commercial	137	234	0	0	234
Industrial	0		0	0	
I - Institutional/ Government	28	175	0	0	175
IL Irrigated Land (Landscape)	28	22	0	0	22
AG – Agricultural	3	17	0	0	17
P - Parks	7	108	0	0	108
UAW (estimated)	--	--	--	393	393
Total:	5,344	4,525	0	390	4,915

**Table 3-2. 2010 Demands (DWR Table 4)**

Customer Category	Metered		Not Metered		Total
	No. Accts	Volume, AFY	No. Accts	Volume, AFY	Volume, AFY
D – Domestic (Single Family)	4,917	3,085	0	0	3,085
M - Multi-Family	348	420	0	0	420
C - Commercial	171	237	0	0	237
Industrial	0	0	0	0	0
I - Institutional/ Government	45	162	0	0	162
IL Irrigated Land (Landscape)	33	29	0	0	29
AG – Agricultural	6	17	0	0	17
P - Parks	11	118	0	0	118
UAW	--	--	0	261	261
Total:	5,531	4,063	0	261	4,324

### **3.2 2020 Baseline Demand and Target**

The 20x2020 process requires that a baseline demand be calculated and then target water demands are determined. The baseline demand is taken as the 10-year average gallon per day per capita, ending no earlier 2004. The baseline demand calculation is based on total supply into the system, and estimated service population for each year.

The historic supply volume from SJWD is subject to uncertainty due to the under-calibrated supply meters. It was discovered that once OVWC installed meters on all its customers, data indicated the demand was higher than the supply from the SJWD meters. SJWD recently replaced all its supply meters and it is assumed the supply data beginning May 2009 is more accurate.

The supply volumes from 1994-2008 are under-reported due to the supply meter calibration issues. As this results in lower gpcd values, correction factors were estimated to determine a more accurate estimation of per capita demands since 1994. OVWC was fully metered and compiled the first full year of demand in calendar year 2005. Table 3-3 compares the supply meter data to the total customer demand meters for 2005-2008. The new SJWD supply meters were installed and online in May 2009. As 2009 data includes both the old and new meters, it is not included. Unaccounted for water from leaks, flushing, fire, or other uses is not known and must be estimated. It is assumed unaccounted for water from 2005-2007 is not significantly different than the value for 2008. 2008 unaccounted for water was estimated at 450 acre-feet, or 8 percent of 5,431 acre-feet, and this percentage is applied to other years in the table.

**Table 3-3. Supply Meter to Demand Meter Data Comparison**

Year	SJWD Supply Meter, AF	Demand Side			Supply/Demand Percent Difference
		Demand Meter, AF	Estimated Unaccounted for Water, AF	Total Demand, AF	
2005	3,376	4,522	393	4,915	69%
2006	3,642	4,896	426	5,322	69%
2007	4,452	4,963	432	5,395	83%
2008	4,982	5,270	449	5,431	88%

Table 3-3 indicates two distinct ranges for the meter inaccuracies. The meters were approximately 30 percent off in 2005-2006, and about 15 percent off in 2007 and 2008. Discussions with SJWD indicate the District did attempt some meter maintenance, calibration, and other efforts in 2007 and 2008 while investigating the accuracy of the meters. SJWD believes these efforts may have improved the accuracy for those two years, but the values were still well below industry standards. SJWD staff indicated the total range of meter errors was 15-30 percent for all of its wholesale meters. The range depended on meter size, location, flow, and other issues, with smaller meters and low flow contributing to the higher inaccuracy rates. SJWD staff indicate that the OVWC connections fit in the small size and lower flow categories, and therefore were most likely in the higher end of the inaccuracy range. Although the 2005-2006 data indicate 30 percent under reading values, this analysis assumes a correction factor of 25 percent for conservative purposes. This factor is applied to the annual supply values starting in 1994 through 2006 to estimate the actual supply volume to OVWC. 15 percent is used for the 2007 and 2008 supply data. These revised supply values are shown below in Table 3-6.

The population served, water supplied, and resulting gpcd are summarized in Table 3-6. The 10-year running average for gpcd is indicated in the right column. The UWMP Guidelines list the methodology for 20x2020 requirements, including the baseline demand analysis. The baseline demand is the 10-year or 15-year average for gpcd ending no earlier than 2004. As there is no recycled water use, the 10-year average is used for the baseline calculations. OVWC is selecting the 10-year period from 1995-2004 as its baseline period, with an average gpcd of 347 gpcd.

Per the UWMP Guidelines, the 2020 goal must be no more than 95 percent of a five-year gpcd average ending no earlier than 2007. The 5-year gpcd average is calculated in Table 3-6. The 2008 five-year average of 299 gpcd is selected. Therefore, the 2020 goal must be less than 284 gpcd.

There are four target methodologies defined by the DWR in the 2010 UWMP Guidelines:

1. 20 percent reduction of baseline demand.
2. Maintain demands equal to individual water budgets.
3. 95 percent of 2020 Task Force hydrologic region gpcd goal.
4. Calculated potential savings.

OVWC is selecting Method 1, 20 percent of baseline demand as its 2020 goal. With a baseline demand of 347 gpcd, the 2015 goal is 312 gpcd, and the 2020 goal is 278 gpcd. 278 gpcd is less than 95 percent of the five-year average (284 gpcd). The selected base year information and selected targets are summarized in Tables 3-7 and 3-8, respectively.

**Table 3-4. Base Daily Per Capita Use (DWR Table 14)**

Year	Population Served	Water Supplied, mgal	Annual gpcd	10-year Running gpcd
1995	13,018	1,498	315	--
1996	13,631	1,735	349	--
1997	13,556	1,982	401	--
1998	14,031	1,921	375	--
1999	14,184	1,901	367	--
2000	14,210	1,800	347	--
2001	14,299	1,886	361	--
2002	14,089	1,782	347	--
2003	14,466	1,554	294	--
2004	14,679	1,696	317	347
2005	14,806	1,375	254	341
2006	14,835	1,483	274	334
2007	14,803	1,668	309	325
2008	14,979	1,866	341	321
2009	15,149	1,461	264	311
2010	15,163	1,408	254	302

Note: Water supplied is metered into system (includes unaccounted-for water)

**Table 3-5. 5-Year Range Base GPCD (DWR Table 15)**

Year	Population Served	Water Supplied, mgal	Annual gpcd	5-year Running gpcd
2003	14,466	1,554	294	--
2004	14,679	1,696	317	--
2005	14,806	1,375	254	--
2006	14,835	1,483	274	--
2007	14,803	1,668	309	290
2008	14,979	1,866	341	299
2009	15,149	1,461	264	288
2010	15,163	1,408	264	289

**Table 3-6. Base Period Ranges (DWR Table 13)**

Base	Parameter	Value
10-15-Year Base Period	2008 total water deliveries	1.866 mgal
	2008 total volume recycled water delivered	0 mgal
	2008 recycled water as percent of total	0 percent
	Years in base period	10 years
	Year beginning base period	1995
5-Year Base Period	Year ending base period	2004
	Years in base period	5 years
	Year beginning base period	2004
	Year ending base period	2008

**Table 3-7. Water Demand Targets**

Year	GPCD Target
2015	312 gpcd
2010	278 gpcd

### 3.3 Projected Water Demands

Water demands are projected using unit water demand factors and projected connections. The unit water demand factors will change over time as the 20x2020 compliance plan is implemented and results in lowering the water demand factors. The following presents the water demand projection methodology and resulting demand projections.

#### 3.3.1 Customer Account Projections

The OVWC service area covers mostly residential-type development. Residential growth is expected to come from infill and splitting of the many large lot parcels in the service area. Future customer connections have been projected in the 2008 Engineer's Report and the 2005 UWMP. In general, annual growth was projected at 0.40 percent per year up to 2030. These projections were developed prior to the recession and current economic conditions that began in 2008. As a result of the current economic conditions, annual customer account growth is reduced to 0.20 percent from 2010 to 2015. The annual growth rate is increased to 0.5 percent from 2015 through 2035. The Sacramento Area Council of Governments (SACOG) is a regional planning agency that produces growth projections for the planning areas within the greater Sacramento area. The OVWC service area is included in a SACOG area that mainly includes Orange Vale, Fair Oaks, Carmichael, and Arden Arcade. SACOG projected a range of growth for this area from 3.8-15.1 percent from 2000 to 2050. However, these projections were made prior to the economic climate of the last few years. In order to achieve growth rates in the SACOG range, a significant change in housing density would be required. OVWC does not project such a change, and believes the majority of their customer base will continue to be a mix of large-lot and smaller-lot single-family residential parcels. The Company will continue to monitor its account growth rates, demand characteristics, and land use planning efforts and modify its projections as necessary.

**Table 3-8. Projected Customer Category Units (DWR Tables 5-7)**

Customer Category	Projected Accounts						
	2005 (actual)	2010 (actual)	2015	2020	2025	2030	2035
Single Family	4,937	4,917	4,996	5,121	5,246	5,371	5,495
Multi-Family	204	348	354	362	371	457	389
Commercial	137	171	190	195	200	204	209
Industrial	0	0	0	0	0		
Institutional/ Government	28	45	53	54	56	57	58
Landscape	28	33	38	39	40	41	42
Parks	3	11	11	11	11	11	11
Agricultural	7	6	6	6	6	6	6
Total:	5,344	5,531	5,649	5,790	5,931	6,072	6,213

### 3.3.2 Customer Water Demand Projections

The Company's high percentage of large residential lots affect the unit water demands as evidenced in the gpcd factor discussed above. Past planning efforts have kept the unit water demand factors constant. However, the new 20x2020 mandates require that water demand decrease over time to the target levels.

Although overall water demands have decreased in the last two years (see Table 3-4), the exact causes are unknown. It is believed that economic conditions, water conservation programs, hydrologic and climate factors, rate increases, and state-wide and regional drought messaging all contributed to the reduced unit demand factors. As these parameters likely reduced demands, it is expected that the removal of some of these parameters will also influence demands. For conservative planning purposes, it is assumed the unit water demands will increase in the short term as economic conditions improve, hydrologic conditions deliver more rain and snow, and drought messaging is reduced. However, the Company's conservation program and other demand management efforts will work to reduce the demands so that the 2015 and 2020 targets will still be met. The resulting water demand projections per customer class are summarized in Table 3-9. Unaccounted-for water is assumed to remain constant at eight percent of total demands. The conservation program and other demand management efforts that will be implemented to meet the 2015 and 2020 gpcd goals are discussed in Chapter 5.

**Table 3-9. Projected Customer Water Demands (DWR Tables 5-7)**

	Water Demands, acre-feet per year				
	2015	2020	2025	2030	2035
Single Family	3,997	3,407	3,490	3,573	3,656
Multi-Family	460	446	457	468	479
Commercial	223	229	234	240	245
Industrial	190	195	200	204	209
Institutional/ Government	28	29	29	30	31
Landscape	121	121	121	121	121
Agricultural	23	23	23	23	23
Total:	5,041	4,449	4,554	4,659	4,764

Note: All accounts are metered.

New legislation requires an agency to project water demands for low-income housing needs. OVWC’s service area is within the unincorporated Sacramento area that is covered by the 2008-2013 Sacramento County Housing Element. Sacramento County’s portion of the SACOG regional housing needs are 15,160 units by 2013. Extremely low and very low-income housing unit needs are 1,413 of total, or 20 percent. The Housing element does not divide the housing needs its various community areas. For the UWMP, OVWC assumes that up to 20 percent of its new single family connections could be extremely low or very low income housing units. Using the single family connections for 2010 and 2015 in Table 3-9, there are 79 new single-family connections projected. Table 3-10 lists the projected water demands for 20 percent of the 79 new connections, or 16 units. The table assumes that no new needs will be identified beyond the 2013. Total demands decrease in 2020 due to 20x2020 affects on unit water usage.

**Table 3-10. Low-Income Projected Water Demands**

	Low -Income Projected Water Demands, acre-feet per year				
	2015	2020	2025	2030	2035
Single Family	12.8	10.6	10.6	10.6	10.6

**3.3.3 Sales to Other Water Agencies**

OVWC maintain emergency interties with many of its neighboring water agencies. The connections are currently only used for transferring supply during emergency conditions, and the Company currently does not sell water to other agencies. No future sales are projected at this time.

**Table 3-11. Sales to Other Water Agencies (DWR Table 9)**

	Sales to Other Water Agencies						
	2005 (actual)	2010 (actual)	2015	2020	2025	2030	2035
None	0	0	0	0	0	0	0

### 3.3.4 Additional Water Uses and Losses

Table 3-12 lists additional past and projected water uses. System losses are assumed to remain constant at eight percent. Loss was estimated for 2005 due to inaccurate wholesale supply meters as discussed in Section 3.2.

The San Juan Family and RWA are discussing the potential for conjunctive use projects throughout the region through groundwater and surface water management. Although OVWC is not yet involved in any conjunctive use program, opportunities may arise in the future. At this time, no conjunctive use is projected until regional planning concepts are further developed.

The San Juan Family recently developed a water shortage plan. If SJWD is unable to use its full surface water rights and contacts, the Family will implement a conjunctive use program. Members with groundwater capacity will provide groundwater to make up any shortfall in surface water. As this is an emergency condition response, any potential future groundwater use is not included in the following projections.

**Table 3-12. Additional Water Uses and Losses (DWR Table 10)**

	Water Use, acre-feet per year						
	2005 (actual)	2010 (actual)	2015	2020	2025	2030	2035
Saline Barriers	0	0	0	0	0	0	0
Groundwater Recharge	0	0	0	0	0	0	0
Conjunctive Use	0	0	0	0	0	0	0
Raw Water	0	0	0	0	0	0	0
Recycled Water	0	0	0	0	0	0	0
System Losses	393	261	350	350	350	350	350
Total:	393	261	350	350	350	350	350

Note: system losses are estimated.

### 3.3.5 Total Water Demands

Total water demands are summarized in Table 3-13. OVWC water demand projections were provided to SJWD as listed in Table 3-14.

**Table 3-13. Total Water Demands (DWR Table 11)**

	Total Water Use, acre-feet per year						
	2005 (actual)	2010 (actual)	2015	2020	2025	2030	2035
Water Deliveries to Customers	4,522	4,324	5,041	4,449	4,554	4,659	4,764
Sales to Other Agencies	0	0	0	0	0	0	0
Additional Use and Losses	393	261	350	350	350	350	350
Total:	4,915	4,585	5,391	4,799	4,904	5,009	5,114

**Table 3-14 Retail Water Demand Projections to Wholesaler (DWR Table 12)**

	Demand Projections Provided to Wholesaler, acre-feet per year						
	Contracted Volume	2010 (actual)	2015	2020	2025	2030	2035
SJWD	No contracted volume	4,324	5,400	4,800	5,000	5,100	5,200

Projections rounded up to nearest 100.

## 4 Water Supplies

OVWC can use both surface water and groundwater to supply its customers. OVWC purchases surface water from the San Juan Water District (SJWD). Groundwater is obtained from the Company's one active well. This chapter presents the supply analysis and discussion.

### 4.1 Surface Water

SJWD obtains its surface water through a combination of rights and contracts totaling 82,200 acre-feet per year. The specifics and reliability of each right and contract is presented in SJWD's UWMP. All of the surface water supplies are withdrawn from Folsom Lake into SJWD's water treatment plant. A summary of SJWD's supplies is presented in Table 4-1.

**Table 4-1. SJWD Supply Summary**

Source	Annual Amount, AF	Notes
USBR CVP Folsom Lake	11,200	Subject to 25 percent reduction in dry years.
USBR CVP Folsom Lake Fazio Water	13,000	Use only in Sacramento County, subject to 25 percent reduction in dry years.
Pre-1914 Right	33,000	Use only for SJWD wholesale area.
Placer County Water Agency	25,000	Placer County use is prioritized over Sacramento County use.
Total:	82,200	

SJWD's water supplies are subject to legal constraints through cutbacks and use restrictions as described in the SJWD UWMP and summarized in Table 4-1. However, the Water Forum Agreement (WFA) also governs total supply availability. Both OVWC and SJWD are signatories of the WFA. The WFA stipulates available supply volumes based on the March through November unimpaired inflow into Folsom Reservoir. The SJWD supply cutbacks as listed in the WFA are summarized in Table 4-1. In the conference years, the WFA convenes a conference to develop the available supplies based on the specific water conditions for conference year.

**Table 4-1. SJWD Supply and WFA Impact Summary**

Year Type	March-November Unimpaired Inflow Into Folsom Reservoir AFA	SJWD Allowable Supply, AFA
Normal Years	$\geq 950,000$	82,200
Drier Years	$950,000 < \text{inflow} > 400,000$	Decreasing down to 54,200 AFA in proportion to decreased inflow to Folsom
Driest Years (Conference Years)	$\leq 400,000$	<54,200

OVWC maintains a wholesale contract with SJWD to supply surface water, as does SJWD with all the San Juan Family retailers. The wholesale contract does not include a volume amount; rather it states that SJWD will provide OVWC the supply it needs. The

other retailer contracts also include the same language. There are no legal constraints in the wholesale/retail contract regarding supply allotment or shortage requirements.

SJWD and the Family members developed the current supply contracts to support SJWD's strategy to manage its supplies at the group level instead of at the retailer level. SJWD's strategy is to provide supply to all its retailers as feasible, but in the event of a shortage, distribute more of the available supply to those who can't obtain other supplies, such as groundwater. Those retailers with groundwater, or access to other supplies, are expected to reduce their SJWD supply requirements, making available more supply for the other retailers. Notwithstanding a water shortage, OVWC expects to receive sufficient SJWD supplies to meet its projected water demands. The supply reliability and water shortage contingency plan is presented in Appendix E. Projected supply availability are summarized in Table 4-1.

**Table 4-2. Surface Water Supplies (DWR Table 17)**

Source	Projected Supply Availability, acre-feet per year					
	2010 (actual)	2015	2020	2025	2030	2035
SJWD	4,324	5,391	4,799	4,904	5,009	5,114

Note: supply availability is assumed to meet demand.

OVWC maintains five connections with SJWD to receive its water supply. The five connections provide redundant supply points such that OVWC considers the connection reliability high. The SJWD UWMP addresses any restraints within SJWD's facilities to diverting, treating, and delivering the necessary supplies to OVWC. The quality of water from Folsom Reservoir is considered good as the drainage basin is mostly alpine-based snow pack at the higher elevations and forest at the lower elevations with little to no urbanization.

## **4.2 Groundwater**

The groundwater basin underlying the Company is the North American Sub-basin, part of the larger Sacramento Valley groundwater basin. California Department of Water Resources California's Groundwater Update 2003, Bulletin 118, identifies the basin as 5-21.64.

### **4.2.1 Basin Description**

Water bearing formations beneath the Company occur in two major strata. The upper water-bearing units include the geologic formations of the Victor, Fair Oaks, and Laguna Formations and are typically unconfined. The lower water-bearing unit consists primarily of the Mehrten Formation, which exhibits confined conditions. The Mehrten Formation is the most productive fresh water-bearing unit in the eastern Sacramento Valley, though some of the permeable layers of the Fair Oaks Formation produce moderate amounts of water. Much of the recharge of these aquifer systems comes from the Sacramento and American Rivers and their tributaries where gravel deposits exist. To a lesser extent, aquifer recharge also occurs where the Merhten Formation reaches the surface in the foothills in eastern Sacramento and western El Dorado County.

Supply wells in the Sacramento Region draw water primarily from the Mehrten and Fair Oaks formations and typically produce 500-1,500 gpm of good to excellent quality water. There are areas throughout the basin that exhibit elevated levels of iron, manganese, and arsenic. The one emergency well operated by OVWC does contain arsenic levels below the current Maximum Contaminant Level (MCL). OVWC has another well that was abandoned due to perchlorate contamination and casing failure. OVWC drilled a third well in 2007. However, the water contains perchlorate. Efforts were made to investigate potential sources through carbon-dating, but results were inconclusive. The company has halted development and may abandon the well.

The groundwater basin does contain three significant major groundwater contamination areas. The United Pacific Railroad plume, located in Roseville and the McClellan Air Force Base plume, located northwest of the Company, are both down gradient and not expected to impact the Company's groundwater quality. A groundwater contamination plume attributed to Aerojet historic operations was first detected in groundwater south of the American River in 1979. Since that time, Aerojet has installed groundwater treatment facilities and has conducted other efforts to treat and control the plume migration. However, a plume was detected north of the American River near Fair Oaks in 2000, and another plume was detected north of the American River in 2005 near Ancil Hoffman Park in Carmichael. Additional monitoring wells and pump-and-treat facilities have been installed to monitor and treat the plume.

Bulletin 118 does not specifically identify the sub-basin as being in overdraft, but does identify issues with groundwater levels. Groundwater levels have been generally declining in Sacramento County for the last 50 years, with many areas declining at a rate of 1.5 to 2.0 feet per year. A groundwater depression that was evident in 1968 significantly expanded and deepened in 1996. The groundwater depressions were also thought to affect the movement of the contamination plumes. The region responded in part through the development of the Sacramento Groundwater Authority Groundwater (SGA) Management Plan and development of multiple conjunctive use projects. As a result of these efforts, SGA reports that groundwater elevation levels have stabilized, or in some cases increased. OVWC is a member of SGA and, through SGA, will continue to track contamination threats and participate in conjunctive use programs or other projects to minimize the risk of the contamination plumes. The comprehensive SGA conjunctive use program and other strategies to mitigate groundwater overdraft on a regional basis are included in the SGA Groundwater Management Plan in Appendix D.

Total usable capacity and safe yield of the basin have not yet been determined. Usable capacity is assumed to be the yield calculated in the Department of Water Resources' American Basin Conjunctive Use Project Feasibility Study (1997). The study assumed a specific yield of 7 percent and an assumed thickness of 200 feet. Applying these assumptions to the total basin area results in a usable capacity of 70.2 million acre-feet. The Sacramento Groundwater Authority has recently adopted a groundwater accounting framework. The framework allows for SGA-member agencies to account for groundwater banking and conjunctive use efforts, and includes consideration and

monitoring of groundwater levels. This information will be used to proactively manage the basin's storage capacity and available yield to support the conjunctive use strategy.

#### 4.2.2 Groundwater Use

OVWC owns and operates one groundwater well as a back-up emergency supply to the surface water. The well has a pumping capacity of 1,000 gpm and the potential to operate as a supplement supply source when surface water supplies are reduced during dry year conditions. Past groundwater usage from 2006-2010 is presented in Table 4-2. As the table indicates, OVWC did not use any groundwater. The Company does not anticipate any future regular use of groundwater as projected in Table 4-3.

**Table 4-3. Past Groundwater Usage (DWR Table 18)**

Basin Name	Metered or Un-metered	Volume of Groundwater Pumped				
		2006	2007	2008	2009	2010
North American Sub-basin	metered	0	0	0	0	0
As a percent of total water supply	--	0	0	0	0	0

**Table 4-4. Projected Groundwater Usage (DWR Table 19)**

Basin Name	Projected Groundwater Usage, acre-feet per year				
	2015	2020	2025	2030	2035
North American Sub-basin	0	0	0	0	0

#### 4.3 Recycled Water

The Sacramento Regional County Sanitation District (SRCSD), and its companion agency, the Sacramento Area Sewer District, conducts wastewater collection and treatment for the OVWC service area. Wastewater is collected and conveyed approximately 20 miles to the south, near Elk Grove, to the regional wastewater treatment plant.

The regional plant serves most of the entire Sacramento metropolitan area. The treatment plant receives and treats approximately 150 million gallons per day (mgd). The current capacity of the plant to treat dry weather flows is approximately 181 mgd. The treatment plant produces a disinfected secondary effluent that is discharged into the Sacramento River below Freeport. The principal treatment processes are primary sedimentation, pure-oxygen activated sludge, secondary sedimentation, and chlorination/de-chlorination. SRCSD does currently produce 1,000-1,700 acre-feet per year of Title 22 recycled water. The recycled water is mostly used for irrigation demand adjacent at a newer development community near the treatment plant in Elk Grove. There are no recycled water facilities within the OVWC service area.

SRCDS developed a recycled water opportunities plan in 2007 (Recycled Water Plan). The Recycled Water Plan divided its service area into specific opportunity areas. Each opportunity area was evaluated for recycled water use potential based on many factors such as demand, supply availability, infrastructure requirements, local support, costs, and others. The process utilized a Water Recycling Advisory Committee that provided a broad stakeholder view and input to the process. The Committee consisted of representatives from cities, water agencies, environmental groups, the State, and business groups. OVWC was represented on the Committee by the Regional Water Authority.

The OVWC service area is located in the Target Area 3 opportunity area identified in the Recycled Water Plan. Based on the analysis and alternative screening procedures, no potential recycled water applications were identified in the OVWC service area. One of the main reasons for the findings is relatively small potential demands that would require extensive infrastructure development, including a new scalping plan to provide a supply source.

The 2005 OVWC UWMP projected zero recycled water use for 2010, as summarized in Table 4-4.

**Table 4-5. 2005 to 2010 Recycled Water Use Comparison (DWR Table 24)**

User Type	2010 Actual Use	2005 UWMP Projection for 2010
Agricultural	0	0
Landscape	0	0
Commercial Irrig.	0	0
Golf Course	0	0
Wildlife Habitat	0	0
Wetlands	0	0
Industrial	0	0
Groundwater Recharge	0	0
Seawater Barrier	0	0
Geothermal/Energy	0	0
Indirect Potable Reuse	0	0
Other	0	0
Total:	0	0

As discussed above, wastewater from the OVWC service area is collected by SRCSD and treated at the treatment plant located in Elk Grove, approximately 20 miles from OVWC. Table 4-5 estimates OVWC customer wastewater generation based on the SRCSD unit wastewater generation factor of 138 gpd per capita (Sacramento Regional Wastewater Treatment Plant 2020 Master Plan, 2001). Tables 4-4 and 4-5 illustrate that there are no treatment plants located within the service area and therefore no recycled water supply or wastewater discharge within the service area.

**Table 4-6. Wastewater Collection and Treatment (DWR Table 21)**

	Annual Volume, acre-feet per year						
	2005	2010	2015	2020	2025	2030	2035
Wastewater Collected in Service Area	2,300	2,350	2,400	2,450	2,500	2,550	2,600
Volume Treated to Recycle Water Standard	0	0	0	0	0	0	0

Note: None of the recycled water produced by SRCSD is produced in or near the OVWC service area.

**Table 4-7. Projected Wastewater Disposal (DWR Table 22)**

Disposal Method	Treatment Level	Annual Volume, acre-feet per year					
		2010 (actual)	2015	2020	2025	2030	2035
none	N/A	0	0	0	0	0	0

The SRCSD Recycled Water Plan concluded there were no viable opportunities for recycled water use in the OVWC service area. However, in the future, basic planning assumptions may change or new issues arise that could result in the identification and development of feasible recycled water programs. Table 4-7 presents the current OVWC potential recycled water uses as zero, but OVWC will continue to monitor its water resources issues, and identify recycled water programs should the opportunity arise.

**Table 4-8. Potential Future Recycled Water Uses (DWR Table 23)**

User Type	Feasibility	2015	2020	2025	2030	2035
Agricultural	0	0	0	0	0	0
Landscape	0	0	0	0	0	0
Commercial Irrig.	0	0	0	0	0	0
Golf Course	0	0	0	0	0	0
Wildlife Habitat	0	0	0	0	0	0
Wetlands	0	0	0	0	0	0
Industrial	0	0	0	0	0	0
Groundwater Recharge	0	0	0	0	0	0
Seawater Barrier	0	0	0	0	0	0
Geothermal/Energy	0	0	0	0	0	0
Indirect Potable Reuse	0	0	0	0	0	0
Other	0	0	0	0	0	0
Total:	0	0	0	0	0	0

Future recycled water use will be part of a regional solution that involves the many entities involved in the SRCSD Water Recycling Plan. Incentives and methods to encourage recycled water use will depend on SRCSD and its regional partners identifying and developing a recycled water program for the north county area. Potential recycled

water supply could also come from remediated groundwater if a plume is detected in the service area. OVWC will continue to follow recycled water use issues and will provide input as necessary. When a feasible program is identified through cooperation with the regional efforts, OVWC will develop incentives and methods to encourage recycled water use within its service area. Table 4-8 lists the current methods and programs to encourage recycled water use as zero as there is no recycled water supply.

**Table 4-9. Methods to Encourage Recycled Water Use (DWR Table 25)**

Action	Projected Additional Recycled Water Use, acre-feet per year					
	2010	2015	2020	2025	2030	2035
Financial Incentive	0	0	0	0	0	0

#### **4.4 Transfer Opportunities**

OVWC receives all of its surface water from its wholesale agency, SJWD. OVWC does not own rights or contracts to additional water supplies that it could transfer or exchange. OVWC could participate in a conjunctive use program through the wholesaler that could result in transfer and exchange opportunities. However, the transfer would most likely be attributed to the supply rights owner, SJWD. At this time, OVWC does not plan on any transfer or exchanges as shown in Table 4-9.

**Table 4-10. Transfers and Exchange Opportunities (DWR Table 20)**

Transfer Agency	Transfer or Exchange	Short Term or Long Term	Proposed Volume, acre-feet per year
None	--	--	0

OVWC does maintain interconnections with some of its neighboring water agencies. The interconnections allow for emergency or short-term supply augmentation between agencies. In addition, the San Juan Family Water Shortage Contingency Plan establishes scenarios where agencies would transfer water to each other using groundwater or other supplies to make up for any shortfall in SJWD supply. However, these situations are considered operational and emergency procedures, and not considered transfers or exchanges that provide additional supply on a regular basis.

#### **4.5 Desalinated Water Opportunities**

OVWC does not foresee any desalinated water opportunities to provide additional supply. The service area is not located near any sea or brackish water supply sources, and there are no known brackish groundwater supplies nearby. Future issues and opportunities may provide for OVWC, through SJWD, to exchange water supplies with another agency that does have desalination opportunities. OVWC will continue to monitor potential opportunities and develop programs and alternatives as identified.

## 4.6 Future Water Supply Projects

OVWC, in conjunction with SJWD and RWA, developed a plan to convert its one emergency well to a regular supply well to support a regional conjunctive use program. The well, along with other water agency wells in the region, would pump groundwater during seasonally and annual drier periods, allowing for the assumed reduced surface supplies to be used where groundwater is not available. The plan also called for OVWC to drill a new well.

Since the 2005 UWMP, the new well has been drilled. However, as discussed previously, the new well is contaminated with perchlorate, and plans for developing the well are on hold. The Company has not converted its one existing well to a regular production well yet. The upgrade is expected to include chlorination facilities, casing maintenance, and electrical and mechanical improvements. It is assumed the existing well will still produce 990 gpm when it is upgraded for full-time use, and that total annual yield will be 50 percent of capacity at approximately 800 AFY.

**Table 4-11. Future Water Supply Projects (DWR Table 26)**

Project	Start-Online Date	Supply Volume, acre-feet per year				
		Normal Year Supply	Single Dry Year Supply	Multiple Dry Year - Year 1 Supply	Multiple Dry Year - Year 2 Supply	Multiple Dry Year - Year 3 Supply
Upgrade Well No. 2	Not yet scheduled	800	800	800	800	800

## 4.7 Supply Summary and Reliability

This section describes the supply reliability and summarizes the total water supplies for OVWC. Surface supply reliability is dependent on SJWD's reliability analysis of its supplies.

### 4.7.1 SJWD Supply Reliability and Shortage Strategy

SJWD was not able to provide an updated reliability analysis in time for inclusion in OVWC's UWMP. The analysis from the 2005 SJWD UWMP is used. Because the WFA is the more controlling supply cutback requirement, and the WFA cutbacks have not changed from 2005, it is assumed the 2005 reliability analysis is still valid. Per the UWMP Guidelines, the analysis assumes historic time periods reflective of a single-year drier event, and multi-year drier event as summarized in Table 4-11.

**Table 4-12. Basis of SJWD Surface Water Year Data (DWR Table 27)**

Water Year Type	Base Year(s)
Singly Dry-Water Year	1976-1977
Multiple Dry-Water Years	1987-1992

In evaluating the water supply reliability, it is assumed the single dry year and multiple dry year scenarios are equal to the drier and driest years from the Water Forum

Agreement. SJWD’s projected supply reliability per the UWMP Guidelines is presented in Table 4-12. The single-dry year and multiple dry-year supply is presented as the range of WFA restrictions. The supply could be reduced even further in the critical “Conference” years. Environmental, legal, and climatic issues could impact SJWD supplies in the future. However, no additional impacts other than the WFA and contract restrictions are known at this time. SJWD does not anticipate water quality affecting supply as the American River and its tributaries produce high quality water that flows into Folsom Lake.

**Table 4-13. San Juan Water District Wholesale Water Supply Reliability (DWR Table 28)**

Source	Average Water Year, acre-feet	Single Dry-Water Year, acre-feet	Multiple Dry-Water Years, acre-feet			
			Year 1	Year 2	Year 3	Year 4
Surface	82,200	54,200-82,200	54,200-82,200	54,200-82,200	54,200-82,200	54,200-82,200
Percent of Average Water Year:	100	66-100	66-100	66-100	66-100	66-100

SJWD’s supply strategy manages its supplies and retailer requirements at a total supply level. Individual retailer contracts do not list fixed contract delivery requirements. The San Juan Family expects to implement its water shortage contingency conjunctive use plan should SJWD’s supplies be reduced below retailer demands. In this case, the San Juan Family expects to work collaboratively to ramp up groundwater supplies and utilize system interconnections to move supply to retailers. In addition, the San Juan Family will institute water shortage measures to reduce demand to the level of service determined for the particular shortage.

Currently, members of the San Juan Family have a combined estimated groundwater capacity of 11,730 gpm considered in the SJWD supply shortage plan. Of this total, OVWC contributes 995 gpm from its Well No. 2. The actual amount of groundwater available during a shortage will be determined at that time and is a function of well yields, groundwater basin conditions, well operational status, infrastructure conditions, and other elements. The San Juan Family will evaluate each supply shortage condition, and develop the appropriate mix of demand reductions, groundwater, and surface water supply to meet total demands. The complete Surface Water Supply and Shortage Management Plan is included in Appendix E.

#### **4.7.2 OVWC Supply Summary and Reliability**

OVWC projected regular water supplies are summarized in Table 4-14. As indicated, OVWC relies solely on SJWD surface water for its regular water supply. Should SJWD supply be reduced, OVWC could use its one well as emergency backup supply. Assuming the well would operate 50 percent of the year, the projected backup groundwater supply available is approximately 800 AFY. OVWC will re-evaluate

projected groundwater supplies over time as more operational data is collected and analyzed.

**Table 4-14. Current and Projected Supplies (DWR Table 16)**

Source	Annual Volume, acre-feet					
	2010 (Actual)	2015	2020	2025	2030	2035
SJWD	4,324	5,500	4,800	5,000	5,100	5,200
Supplier Produced Groundwater	0	0	0	0	0	0
Supplier Produced Surface Water	0	0	0	0	0	0
Transfers In	0	0	0	0	0	0
Exchanges In	0	0	0	0	0	0
Recycled Water	0	0	0	0	0	0
Desalinated Water	0	0	0	0	0	0
Total:	4,324	5,500	4,800	5,000	5,100	5,200

OVWC’s supplies are subject to factors that could impact reliability. Impacts to the SJWD supply are summarized above. Groundwater basin issues could impact OVWC’s groundwater supply. If the wells begin to produce contaminated groundwater, the supply could either be eliminated or reduced. The basin levels have historically decreased, and only recently stabilized or even increased in some locations. If the groundwater levels decrease further, OVWC well capacities could be impacted, or even eliminated. However, the SGA has been working on a groundwater accounting framework to be implemented by the region’s water agencies to mitigate and improve the groundwater basin conditions. It is assumed the only issue that could impact supply availability is groundwater contamination at one of the existing wells. Should this occur, OVWC will evaluate pump and treat alternatives versus drilling a new well. Table 4-15 summarizes the potential impacts to OVWC’s supplies and Table 4-16 summarizes the potential impacts to supply volumes. Recycled water values are zero as there is no projected recycled water supply.

**Table 4-15. Factors Resulting in Inconsistency of Supply (DWR Table 29)**

Source	Limitation Quantification	Legal	Environmental	Water Quality	Climatic
Surface	unknown	Yes	Yes	No	Yes
GW	Loss of one 995 gpm well	No	No	Yes	No
Recycled	--	No	No	No	No

**Table 4-16. Current and Projected Water Quality Supply Impacts (DWR Table 30)**

Source	Quality Issue	Potential Impact to Supply Total, acre-feet					
		2010 (actual)	2015	2020	2025	2030	2025
Surface	Unknown at this time	0	0	0	0	0	0
GW	Contaminated groundwater	0	800	800	800	800	800
Recycled	NA	0	0	0	0	0	0

Note: Groundwater values assume well would be operated 50 percent of time, and assume one 995 gpm well could be lost due to groundwater contamination.

OVWC’s supply historic reliability is summarized in Table 4-17. The surface water supply values are based on the overall SJWD supply availability as determined by the Water Forum Agreement. OVWC surface water supplies have never been reduced. OVWC has not had to operate any wells due to water shortages. However, based on the complete groundwater availability of other neighboring agencies, it is assumed there would have been no impact to the reliability of Well No. 2. It is assumed that Well No. 2 would have provided 50 percent of its pumping capacity during all of the dry-year scenarios.

**Table 4-17. Supply Reliability – Historic Conditions (DWR Table 28)**

Source	Average Water Year, acre-feet	Single Dry-Water Year, acre-feet	Multiple Dry-Water Years, acre-feet			
			Year 1	Year 2	Year 3	Year 4
SJWD overall surface supply	82,200	54,200-82,200	54,200-82,200	54,200-82,200	54,200-82,200	54,200-82,200
GW	800	800	800	800	800	800
Recycled	0	0	0	0	0	0
Percent of Average Water Year available to OVWC:	100	100	100	100	100	100

Note: OVWC’s supply from SJWD has never been reduced due to dry year conditions. SJWD’s overall supply is restricted by the Water Forum Agreement and can be reduced according to the ranges provided in the table.

Projected OVWC supply reliability for the next three years is summarized in Table 4-18. As the San Juan Family retailers are not near their ultimate buildout water demands, OVWC does not anticipate any impacts to its SJWD supply despite potential impacts to the full 82,200 AFY SJWD supply in the next three years. OVWC expects to receive full supply from SJWD to meet all its water demands.

**Table 4-18. Supply Reliability (DWR Table 31)**

Source	Average Water Year, acre-feet	Multiple Dry-Water Years, acre-feet		
		2011	2012	2013
Surface	not quantified	4,770	5,040	5,310
GW	800	800	800	800
Recycled	0	0	0	0
Percent of Average Water Year:	100	100	100	100

## 5 Conservation and Demand Management

OVWC maintains a comprehensive and successful water conservation program. The Company is a member of the California Urban Water Conservation Council (CUWCC) and annually reports best management practice (BMP) results. Annual monitoring and reporting for both the CUWCC and USBR requirements are accomplished through the CUWCC annual reporting website. In addition, OVWC is a signatory to the Sacramento Water Forum Agreement, and submits its BMP efforts, status and results annually to the Water Forum.

This 2010 UWMP Guidebook provides a list of required Demand Management Measures (DMM). The DMM list is equivalent to the CUWCC BMP list. This section lists each required DMM per the Guidebook.

### ***5.1 DMM A: Water Survey Programs for Single-Family and Multiple-Family Residential Customers***

OVWC has implemented a water survey program for single-family and multi-family residential customers in the service area since 2003. Surveys are offered to all single-family and multi-family customers every year. OVWC will continue to offer these audits to all residential customers. This program includes the following:

- Instruct customers of meter reading program and applicable tiered rates.
- Detection of outside leaks, and instruct homeowners on interior leak detection.
- Provide low-flow devices as appropriate.
- Recommend High Efficiency Toilet (HET) replacements.
- Check irrigation system for leaks/overlap and determine timer functioning and seasonal scheduling.
- Measure landscape area and develop irrigation schedule.
- Provide customer with evaluation results, water saving recommendations and other information.

Implementation. The Company markets the program through its public outreach efforts. All residential customers are offered the survey. A database is kept of each customer receiving the audit along with other customer-specific information and notes. The Company is beginning to identify and analyze high-water residential users through its new customer database and plans to directly target these users. The Company plans to conduct 80 surveys per year for the next five years.

Evaluation. Customer data is kept in the billing database and is used to evaluate impacts of DMM on demands over time. The Company updates its demand analysis and DMM water savings estimates to evaluate overall program effectiveness. The Company also monitors requests for surveys over the year and from year to year to identify customer trends and needs to improve the program.

## **5.2 DMM B: Residential Plumbing Retrofit**

OVWC provides plumbing retrofit kits as part of the conservation program. These kits are available for all customers at their request and at the counter in the OVWC office lobby. The plumbing retrofit kits consist of the following:

- High quality 2.5 gpm showerheads.
- 2.2 gpm faucet aerators.
- Toilet displacement device, dye tablets, and hose nozzles.

Implementation. The Company markets the program through its public outreach efforts and during DMM A survey visit. All residential customers are offered the kit through the public outreach program. A database is kept of each customer receiving the kit along with other customer-specific information and notes. The Company is beginning to identify and analyze high-water residential users through its new customer database and plans to directly target these users by offering the retrofit kit as well as other DMM programs. The Company plans to distribute 100 retrofit kits per year for the next three to five years. The Company is reaching close to saturation level for this DMM, and pending saturation analysis results, may reduce this DMM in the future.

Evaluation. Customer data is kept in the billing database and is used to evaluate impacts of DMM on demands over time. The Company updates its demand analysis and DMM water savings estimates to evaluate overall program effectiveness. The Company also monitors requests for retrofit kits over the year and from year to year to identify customer trends and needs to improve the program.

## **5.3 DMM C: System Water Audits, Leak Detection, and Repair**

OVWC has conducted water audits and leak detection and repairs annually since 2002 using the methodology consistent with that described in the American Water Works Association (AWWA) Water Audit and Leak Detection Guidebook. A leak detection contractor is hired to survey approximately 10 percent of the system per year. Results indicate that very few leaks are detected, with a range of 0-4 leaks per year detected through the survey. OVWC operation and maintenance crews also monitor for leaks through visual inspection and repair leaks as detected. An estimate of water loss is calculated for each leak and maintained in a water loss database along with estimates of other non-revenue water such as flushing, fire, or others. 2010 unaccounted-for water is calculated at six percent. Water loss from leaks in 2010 is estimated at 2.0 AF.

## **5.4 DMM D: Metering with Commodity Rates for all New Connections and Retrofit of Existing**

The OVWC service area is fully metered for all customer sectors including single-family, multi-family, commercial, institutional, and landscape irrigation since 2005. Prior to April, 2011, all OVWC customers are billed bi-monthly based on commodity rates, including tier prices for single family residential customers. Beginning in April 2011, OVWC switched to monthly billing. Meters will continue to be installed for all new connections in the service area.

The Company does not evaluate this DMM for water savings as it provides an indirect benefit to the other quantifiable DMMs. The Company utilizes meters and tiered pricing to develop a value of water for its customers who then can utilize the quantifiable DMMs to reduce their water use.

### **5.5 DMM E: Large Landscape Conservation Programs and Incentives**

OVWC provides education and assistance to its landscape, commercial, and institutional customers through audits, rebates, and information to improve their landscape water-use efficiency. The large landscape conservation program is offered to all accounts with dedicated irrigation meters and mixed-use metered accounts. The landscape audit consists of:

- Irrigation system check
- Distribution uniformity analysis
- Review and/or develop irrigation schedules
- Measure landscape area and total irrigable area
- Customer report and information

The Company has 33 landscape meter accounts and 227 CII accounts with mixed use meters in 2010. The irrigated area for each landscape meter has been measured, and the Company is in the process of developing water budgets for those accounts. OVWC will analyze water use of its CII accounts that do not have a dedicated landscape meter. OVWC will then identify the cost and benefits of installing dedicated landscape meters to the identified accounts.

Implementation. The Company markets the program through its public outreach program. All irrigation and CII customers are offered the survey. A database is kept of each customer receiving the survey along with other customer-specific information and notes. The District plans to conduct approximately 10 surveys per year for the next five years.

Evaluation. Customer data is kept in the billing database and is used to evaluate impacts of DMM on demands over time. Accounts given water budgets will be analyzed for use versus the budget and contacted if additional assistance is required. The District actively updates its demand analysis and DMM water savings estimates to evaluate overall program effectiveness.

### **5.6 DMM F: High-Efficiency Washing Machine Rebate**

OVWC implements this rebate program with the assistance of the local power company, Sacramento Municipal Utilities District (SMUD). SMUD's rebate program is based on rebates for efficient appliances, but also includes an amount for water efficiency in the overall rebate. SMUD notifies OVWC of number of rebates issued, and OVWC pays SMUD for the rebates that SMUD issues to OVWC customers.

Implementation. The Company markets the program through its public outreach program. All residential customers are offered the rebate. A database is kept of each customer receiving the rebate along with other customer-specific information and notes. The District plans to distribute approximately 54 rebates per year for the next five years.

Evaluation. Customer data is kept in the billing database and is used to evaluate impacts of DMM on demands over time. The Company actively updates its demand analysis and DMM water savings estimates to evaluate overall program effectiveness.

### **5.7 DMM G: Public Information Programs**

OVWC provides information on its water conservation program and on water conservation to the public through speakers for community groups, events, and schools. In addition, customers receive information through paid and public service advertising. OVWC coordinates with other governmental agencies, industry groups, public interest groups, and the media to continue offering information to customers. Part of the OVWC public information program is conducted through the Regional Water Authority public information program. The Company participates in funding a cooperative demonstration garden at its wholesaler, San Juan Water District. A Company website was recently added to its existing program to assist in providing conservation program information to its customers.

The Company also participated in RWA's Blue Thumb campaign. The campaign is designed to help the region's residents to use less water outdoors. The ongoing campaign shows residents how to use water efficiently outdoors through every-day tasks such as adjusting their irrigation system according to the season or using a shut-off nozzle on their hose. The program partners with local media figures, Home Depot, and the River Cats, the local minor league baseball team. In 2010, the public information program provided nearly 3.9 million television and 6.3 million radio impressions via paid advertising. The program also provided more than 1.2 million television and over 3 million radio impressions via free, public service announcements. The Company does not evaluate this DMM for water savings as it provides an indirect benefit to the other quantifiable DMMs.

### **5.8 DMM H: School Education Programs**

OVWC participates with San Juan's member water agencies and with RWA in a school education program to provide institutional assistance, educational materials, and classroom presentations that identify urban, agricultural, and environmental issues and conditions in the local watershed. The school education program consists of the following components:

- Books.
- Annual poster contests.
- Maps, charts, and posters.
- Professional plays.
- Teacher grants (in conjunction with poster contest).

OVWC sponsors an annual poster contest with 4th, 5th, and 6th grade students in the area, with the winners receiving monetary awards. This program has been in place for several years. OVWC also provides T-shirts and certificates of award for each participant. Starting 2002, OVWC has offered class presentations to 4th, 5th, and 6th grade students as part of the school education program. OVWC held two class presentations in 2010.

OVWC also maintains a conservation education counter in the office lobby, which provides items such as book covers, conservation stickers, pencils, rulers, poster contest winning calendars, and other items encouraging smart water use. Students, parents, and teachers are informed of these give-away items and visit the office on a regular basis.

The Company does not evaluate this DMM for water savings as it provides an indirect benefit to the other quantifiable DMMs.

### **5.9 DMM I: Conservation Programs for Commercial, Industrial, and Institutional (CII) Accounts**

OVWC provides conservation programs for each CII account through audits, rebates, water budgets, and other special targeted programs. The CII audit includes:

- Site visit
- Evaluation of water-using devices
- Report identifying recommended efficiency measures and potential incentives available to the customer.

The rebate program provides up to \$100 for HET replacement. OVWC also participated in the spray and rinse valve replacement program through Regional Water Authority (RWA) in previous years. CII customers with mixed-use meters are also offered landscape audits and information through DMM 5.

Implementation. The Company markets the program through its public outreach program. All CII customers are offered the audit, survey, and rebate. CII customers will be ranked on water use and targeted outreach efforts will be made for the highest water users. A database is kept of each customer receiving an audit or rebate along with other customer-specific information and notes. The Company plans to offer this program to all of its CII customers for the next five years and expects to complete approximately 30 surveys per year.

Evaluation. Customer data is kept in the billing database and is used to evaluate impacts of DMM on demands over time. The District actively updates its demand analysis and DMM water savings estimates to evaluate overall program effectiveness.

### **5.10 DMM J: Wholesale Agency Assistance Programs**

OVWC is a retail water agency and, as such, DMM J is non applicable. However, as a wholesale customer, OVWC continues to coordinate its collective conservation efforts with SJWD.

### **5.11 DMM K: Conservation Pricing**

All OVWC connections are metered and charged on metered rates since 2005. The rates consist of three parts; basic, volumetric, and assessment. OVWC maintains a tiered water rate structure for single-family accounts with volumetric prices increasing for increased use. The volumetric charge for all other customers is fixed at one tier. In 2010, OVWC updated its rate program and implemented a new rate and tier system. The program will adjust rates annually so that 70 percent of revenue will come from volumetric charges in five years.

OVWC does not evaluate this DMM for water savings as it provides an indirect benefit to the Company's other, quantifiable DMMs. The Company utilizes meters and tiered pricing to develop a value of water for its customers who then can utilize the quantifiable DMMs to reduce their water use.

### **5.12 DMM L: Conservation Coordinator**

OVWC has an established conservation coordinator position whose duties include the following:

- Coordination and oversight of conservation program and BMP implementation.
- Preparation and submittal of the CUWCC BMP Implementation Report.
- Preparation and submittal of the USBR 5-Year Water Management Plan.
- Coordination of conservation efforts and programs with District executive team, other staff, and other agencies.
- Preparation of annual BMP budgets.
- Customer demand analysis and tracking.

The conservation coordinator is a full-time position. In addition to the coordinator, OVWC also makes up to 3 full-time-equivalents available to assist the coordinator during surveys and audits, public information programs, rebate processing, customer demand analysis, or other tasks.

The Company does not evaluate this DMM for water savings as it provides the overall direction and implementation of the program for the quantifiable DMMs.

### **5.13 DMM M: Water Waste Prohibition**

The water waste prohibition is an ongoing component of the OVWC's water conservation program. The OVWC water waste ordinance includes the following water waste prohibitions:

- Water shall not be allowed to discharge, flow, or run to waste into any gutter, sanitary sewer, water course or storm drain, or to any adjacent lot.
- Water fixtures or heating or cooling devices shall not be allowed to leak or discharge.
- Ponds, swimming pools, and/or fountains without water recirculating devices are not permitted.

- Customer leaking pipes, fixtures, and/or sprinklers shall be repaired immediately.
- Irrigation between the hours of 10:00 AM and 6:00 PM.
- Use of a water hose not equipped with a control nozzle of water are not permitted.
- Use of a hose to clean sidewalks, driveways, patios, streets, and commercial parking lots is not permitted, unless specifically required for health and safety reasons.

The water waste prohibition program is implemented depending on normal, dry and drier year conditions. However, OVWC employees regularly patrol the service area and receive feedback from customers to ensure no water waste. The Company provides warnings per the Rules and Regulations, and will cut off water service if customers ignore the requirements. The OVWC Water Waste Ordinance is part of the Rules and Regulations included in Appendix F.

The Company does not evaluate this DMM for water savings as it provides an indirect benefit to the District's other, quantifiable DMMs.

#### **5.14 DMM N: Residential Ultra Low Flow Toilet (ULFT) Replacement Programs**

OVWC, in conjunction with RWA, has maintained a toilet replacement program since 2002. The program began with ULFT rebates, and now provides High Efficiency Toilet (HET) replacement rebates. High-water-usage toilets are replaced by 1.23-gallon per flush HETs in single-family and multi-family residences. Rebates up to \$100 per toilet replacement are offered to customers. The new toilet is inspected and the old toilet is removed from the property and destroyed.

Implementation. The Company markets the program through its public outreach program. All residential customers are offered the rebate. The program is also marketed through RWA public information campaigns. A database is kept of each customer receiving the rebate along with other customer-specific information and notes. The Company will continue to offer this program for the next five years.

Evaluation. Customer data is kept in the billing database and is used to evaluate impacts of DMM on demands over time. The District actively updates its demand analysis and DMM water savings estimates to evaluate overall program effectiveness.

## 6 Demand to Supply and Contingency Planning

Projected demands are compared to projected supplies in this section. The Orange Vale Water Company maintains a water shortage contingency plan to address instances when supplies are reduced. The Water Shortage Contingency Plan covers both short-term emergency shortages and long-term supply reductions.

### 6.1 Demand to Supply Analysis

Normal year and dry year supply and demand scenarios are presented in Tables 6-1 through 6-3. The SJWD Family water shortage plan does not allocate supply to the retailers on a volumetric basis, as discussed in Section 4. However, it is acknowledged that SJWD supply could be reduced to some level during extreme water shortages. The shortage plan identifies up to 18,000 AF of groundwater that can be used to offset surface water shortages. If supply is reduced to 54,200 AF in the Water Forum, and 18,000 AF of groundwater is supplied, the net supply is 72,200 AF compared to the total of 82,200 AF. This represents a net percent reduction of 12 percent. However, with all the retailers now meeting the 20 percent reduction by 2020 requirements, the SJWD net supply should be sufficient to meet OVWC's demands, even after overall supply reductions. OVWC does not anticipate any supply reductions except under extreme circumstances, such as a Water Forum Conference year, or catastrophic failure of SJWD's infrastructure. OVWC may decide to reduce its demands and supply delivery during certain future conditions to assist in regional water shortage issues.

**Table 6-1. Normal Year Supply to Demand (DWR Table 32)**

	Volume, acre-feet				
	2015	2020	2025	2030	2035
Supply Total	5,391	4,799	4,904	5,009	5,114
Demand Total	5,391	4,799	4,904	5,009	5,114
Difference	0	0	0	0	0
Difference as % of Supply	0	0	0	0	0
Difference as % of Demand	0	0	0	0	0

**Table 6-2. Single Dry-Year Supply to Demand (DWR Table 33)**

	Volume, acre-feet				
	2015	2020	2025	2030	2035
Supply Total	5,391	4,799	4,904	5,009	5,114
Demand Total	5,391	4,799	4,904	5,009	5,114
Difference	0	0	0	0	0
Difference as % of Supply	0	0	0	0	0
Difference as % of Demand	0	0	0	0	0

**Table 6-3. Multiple Dry-Year Supply to Demand (DWR Table 34)**

		Volume, acre-feet				
		2015	2020	2025	2030	2035
First Year Supply	Supply Total	5,391	4,799	4,904	5,009	5,114
	Demand Total	5,391	4,799	4,904	5,009	5,114
	Difference	0	0	0	0	0
	Difference as % of Supply	0	0	0	0	0
	Difference as % of Demand	0	0	0	0	0
Second Year Supply	Supply Total	5,391	4,799	4,904	5,009	5,114
	Demand Total	5,391	4,799	4,904	5,009	5,114
	Difference	0	0	0	0	0
	Difference as % of Supply	0	0	0	0	0
	Difference as % of Demand	0	0	0	0	0
Third Year Supply	Supply Total	5,391	4,799	4,904	5,009	5,114
	Demand Total	5,391	4,799	4,904	5,009	5,114
	Difference	0	0	0	0	0
	Difference as % of Supply	0	0	0	0	0
	Difference as % of Demand	0	0	0	0	0

## 6.2 Water Shortage and Drought Contingency Plan

OVWC maintains two water shortage and drought contingency plans. The plan maintained at the San Juan Family level, the Surface Water Supply and Water Shortage Management Plan was discussed in Chapter 4 and covers contingency for supply shortages across the entire San Juan Family. This plan also relies on each retailer's own water shortage contingency plan to enact demand reduction measures as necessary to meet supply cutbacks. The OVWC Water Shortage and Drought Contingency Plan is summarized below and presented in Appendix F.

OVWC applies a five-stage rationing plan during declared water shortages. The rationing plan also applies to catastrophic loss of water. The rationing plan determines a consumption reduction up to 50 percent of the normal consumption depending of causes, severity, and anticipated duration of the water supply shortage. Table 6-4 summarizes the OVWC rationing plan stages of action. A copy of the OVWC Water Shortage Contingency Plan is included in Appendix F.

**Table 6-4. Water Supply Shortage Stages and Conditions (DWR Table 35)**

Stage No.	Water Supply Condition	Percent Reduction
1. Normal Water Supply	Normal or wet year supply conditions.	0%
2. Water Alert	Beginning of drought with multiple dry months and SJWD warning of potential cutbacks.	5-10%
3. Water Warning	SJWD available supply between 82,200 and 52,400 AFY	11-25%
4. Water Crisis	SJWD supply cutback below 52,400 AFY	26-50%
5. Water Emergency	SJWD supply loss.	At least 50%

OVWC assigns requirements and actions to apply in each stage designed to achieve the necessary demand reduction. Stages 4 and 5 are divided into short-term and long-term scenarios. Actions for each stage are summarized in Table 6-5 and water shortage demand reduction measures are summarized in Table 6-6. A more complete and detailed listed is included in Appendix F.

**Table 6-5. Water Shortage Mandatory Prohibitions (DWR Table 36)**

Prohibitions	Mandatory Prohibitions Water Supply Shortage				
	Stage 1 Normal Water Supply	Stage 2 Water Alert	Stage 3 Water Warning	Stage 4 Water Crisis	Stage 5 Water Emergency
Unnecessary and wasteful uses of water.	X	X	X	X	X
Using potable water for street washing.	X	X	X	X	X
Free-flowing hoses for all uses.	X	X	X	X	X
Leaking consumer's pipes or faulty sprinklers.	X	X	X	X	X
Non-recirculating ponds, pools, spas, or ornamental fountains.	X	X	X	X	X
Landscape irrigation restrictions based upon "odd-even" schedules.		X	X	X	X
Automatic sprinkler system shall not be set to work during peak hours.		X	X	X	X
Using potable water for street washing except as necessary for health, sanitary, or fire protection purposes.		X	X	X	X
Restaurants shall serve water only upon specific request.		X	X	X	X
No potable water shall be used to fill or refill new pools, artificial lakes, ponds, or streams.				X	X
Water use for ornamental fountains shall be prohibited.				X	X
Washing automobiles or equipment shall be done at a commercial establishment that uses recycled water.				X	X

**Table 6-5 continued. Water Shortage Mandatory Prohibitions (DWR Table 36)**

Prohibitions	Mandatory Prohibitions Water Supply Shortage				
	Stage 1 Normal Water Supply	Stage 2 Water Alert	Stage 3 Water Warning	Stage 4 Water Crisis	Stage 5 Water Emergency
No potable water shall be used for construction purposes (dust control, compaction, or trench jetting).					X
New connections to the OVWC shall not be allowed.					X

Note: See Appendix F for a complete listing of prohibitions.

**Table 6-6. Water Shortage Demand Reduction Measures (DWR Table 37)**

Consumption Reduction Methods	Stage When Method Takes Effect					Projected Reduction
	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	
Conservation patrol responding to reports of water wasting incidents.	X	X	X	X	X	Up to 4%
Education program.	X	X	X	X	X	Up to 4%
Plumbing fixtures replacement.	X	X	X	X	X	Up to 4%
On-site evaluation and inspection of irrigation equipment.	X	X	X	X	X	Up to 4%
Distribute educational information explaining other stages and forecast future actions. Request voluntary water conservation.		X	X	X	X	5 – 10%
Cooperate with SJWD in a media outreach program.		X	X	X	X	5 – 10%
Instruct all consumers to reduce consumption by 11-25%.			X	X	X	11 – 25%
Mandatory compliance to all water conservation measures required.				X	X	10 – 25%
Comply with a rationing program through percentage cutbacks as requested by SJWD.				X	X	26 – 50%
Comply with request for pumping groundwater from the emergency wells to augment water supply.				X	X	26 – 50%

Note: See Appendix F for a complete listing of demand reduction measures.

OVWC does not assess penalties or charges as part of its water shortage contingency plan. However, the Company will shut off service to customers who do not comply with the shortage stage requirements.

Water rates were recently updated to be in-line with the CUWCC conservation pricing requirements such that 70 percent of revenue is from volumetric charges. Based on the five-year rate plan implemented, full compliance should be attained by 2015. With such

a high rate of revenue from volumetric charges, it is acknowledged that revenue will decrease with decreasing demands during a shortage. It is anticipated that personnel and operations costs will not decrease at all, and may even increase depending on the shortage situation. The Company maintains a cash reserve that can be used to offset short-term revenue reductions. However, if the supply shortage is projected to last longer, the Company will enact water crisis/emergency pricing or will update the entire rate structure, depending on expected length of shortage and estimate impacts to revenue.

In addition to reducing demands during a catastrophic loss of supply, OVWC has also identified short-term emergency supplies for health and fire-fighting needs. OVWC currently has one groundwater well that can be used during emergency events... OVWC is reviewing options to implement alternate power sources to improve the groundwater system for both dry-year and emergency conditions. OVWC conducts annual maintenance of the well to ensure groundwater production is available for potential emergencies. OVWC is responsible to prepare and submit every year an Emergency Response Plan to the Department of Health Services (DHS). The Emergency Response Plan presents the procedures to be followed during emergencies or disasters and also provides emergency contact information.

**Appendix A**  
**2010 UWMP 60-day Notification**



**ORANGE VALE WATER COMPANY**

9031 Central Avenue • Post Office Box 620800

OrangeVale, California 95662-0800

Office 916-988-1693 • Fax 916-988-0627

Sharon L. Wilcox  
General Manager/Secretary-Treasurer

March 1, 2011

Steve Pedretti  
Planning Director  
Sacramento County Department of Planning and Community Development  
827 7<sup>th</sup> Street, Room 225  
Sacramento, California 95814

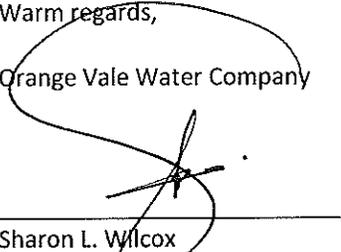
Subject: Orange Vale Water Company 2010 UWMP Notice

Dear Steve Pedretti,

The Orange Vale Water Company (The Company) is preparing its 2010 Urban Water Management Plan (UWMP). The UWMP is required to be submitted to the California Department of Water Resources every five years (Water Code Sections 10610-10657). The law requires a water agency notify the county and city in which it serves water of its UWMP update. The Company is updating its UWMP for 2010 and intends to present its findings at a public hearing in May. If you have any questions or comments regarding this process, please contact me at (916) 988-1693.

Warm regards,

Orange Vale Water Company

  
\_\_\_\_\_  
Sharon L. Wilcox  
General Manager  
Secretary, Board of Directors



**ORANGE VALE WATER COMPANY**

9031 Central Avenue • Post Office Box 620800  
OrangeVale, California 95662-0800  
Office 916-988-1693 • Fax 916-988-0627  
Sharon L. Wilcox  
General Manager/Secretary-Treasurer

March 1, 2011

Kerry Miller  
City Manager  
City of Folsom  
50 Natoma Street  
Folsom, California 95630

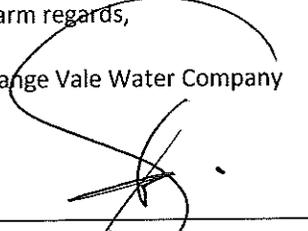
Subject: Orange Vale Water Company 2010 UWMP Notice

Dear Kerry Miller,

The Orange Vale Water Company (The Company) is preparing its 2010 Urban Water Management Plan (UWMP). The UWMP is required to be submitted to the California Department of Water Resources every five years (Water Code Sections 10610-10657). The law requires a water agency notify the county and city in which it serves water of its UWMP update. The Company is updating its UWMP for 2010 and intends to present its findings at a public hearing in May. If you have any questions or comments regarding this process, please contact me at (916) 988-1693.

Warm regards,

Orange Vale Water Company

  
\_\_\_\_\_  
Sharon L. Wilcox  
General Manager  
Secretary, Board of Directors

**Appendix B**  
**2010 UWMP Public Hearing Notification**

NO 424 PUBLIC NOTICE

**Orange Vale Water Company  
Notice of Hearing of  
Urban Water Management Plan 2010**

PUBLIC NOTICE is hereby given that on the date of May 3, 2011, at the hour of 6:00 P.M., a public hearing will be held at 9031 Central Avenue, OrangeVale, California 95662, at which time the Orange Vale Water Company Board of Directors will consider the following:

**REQUIRED REPORT ON URBAN WATER MANAGEMENT PLAN 2010**

The purpose of this hearing is to present the report to the Orange Vale Water Company Board of Directors and accept and respond to any public questions or comments regarding the Urban Water Management Plan. This report was prepared to provide guidelines for long-term water management for the Orange Vale Water Company. Comments on the Urban Water Management Plan must be presented at the hearing or received by Orange Vale Water Company at the address noted below prior to June 7, 2011.

Copies of the Urban Water Management Plan may be reviewed at the following location:

Orange Vale Water Company  
9031 Central Avenue  
OrangeVale, California 95662

Contact Person: Sharon L. Wilcox  
General Manager  
Orange Vale Water Company

PO Box 620800  
OrangeVale, CA 95662-0800  
(916) 988-1693  
Run 2Times - April 19 & 26, 2011

**Appendix C**  
**2010 UWMP Adoption Resolution**

**ORANGE VALE WATER COMPANY  
URBAN WATER MANAGEMENT PLAN  
Resolution No. 2011-001**



**WHEREAS,** existing law requires each urban water supplier to prepare and adopt an Urban Water Management Plan to update its current Plan at least once every five years; and

**WHEREAS,** existing law requires an urban water supplier to file with the Department of Water Resources a copy of its Plan and any amendments to its Plan; and

**WHEREAS,** AB 252, signed by the Governor of the State of California on September 1, 2000, requires each urban water supplier to provide and city or county, which the supplier provides a water supply, a copy of its Plan no later than 30 days after adoption; and

**WHEREAS,** Orange Vale Water Company is an urban water supplier to more than 5,000 domestic connections, and has therefore prepared for public review, a Draft Urban Water Management Plan Update, with a properly noticed public meeting held by the Company on May 3, 2011, following which a final Plan was prepared;

**NOW, THEREFORE, BE IT FURTHER RESOLVED, BY THE BOARD OF DIRECTORS OF THE ORANGE VALE WATER COMPANY that** the Urban Water Management Plan is hereby adopted and the General Manager is authorized and directed to file said Plan Update with the California Department of Water Resources by August 1, 2011.

**Passed and adopted at the regular meeting of the Board of Directors of the Orange Vale Water Company on June 7, 2011**

Ayes 5  
Nos 0  
Abstain 0

Signature   
Print Name SHARON D. WILCOX  
Title GENERAL MANAGER

ATTEST:   
Russell A. Castilone, President  
Board of Directors  
Orange Vale Water Company

**Appendix D**  
**SGA Groundwater Management Plan**

*Also available at [www.sgah2o.org](http://www.sgah2o.org)*

**Appendix E**  
**San Juan Water District's Surface Water Supply and**  
**Water Shortage Management Plan**

# **SAN JUAN WATER DISTRICT'S SURFACE WATER SUPPLY AND WATER SHORTAGE MANAGEMENT PLAN**

## **BACKGROUND INFORMATION**

San Juan Water District ("San Juan") is the owner of certain surface water rights and contractual water entitlements, and facilities and entitlements for the diversion, treatment and conveyance of water from Folsom Reservoir, to make available treated water supplies within its wholesale and retail service area, which includes: (1) Citrus Heights Water District; (2) Fair Oaks Water District; (3) Orange Vale Water Company; (4) San Juan in its capacity as a retail water service provider; and (5) the City of Folsom relative to that portion of its service area north of the American River ("Member Agencies"). San Juan has entered into wholesale water supply agreements with the Member Agencies. The wholesale water supply agreements provide that San Juan and the Member Agencies will develop a surface water supply and water shortage management plan to manage water supplies during times of shortage.

This document sets forth San Juan's Surface Water Supply and Water Shortage Management Plan ("Plan"). Under this Plan, certain Member Agencies with groundwater production facilities commit to relying on groundwater supplies during times of shortage and thereby make supplemental surface water supplies available for other Member Agencies, and in exchange: (1) will receive annual payments from the other Member Agencies to pay the capital and operation and maintenance costs specified below; and (2) in addition, will receive payments to cover the cost of pumping groundwater in years when groundwater is pumped under this Plan. Those Member Agencies who will be receiving the benefit of groundwater production facilities of other Member Agencies will make annual payments as provided in this Plan and will be entitled to receive supplemental surface water supplies during years of shortage.

## **BASIC PRINCIPLES**

This Plan is based on the following principles:

1. San Juan and the Member Agencies are committed to the coequal objectives of the Water Forum Agreement to: (a) provide a reliable and safe water supply for the Sacramento region's economic health and planned development through the year 2030; and (b) preserve the fishery, wildlife, recreational and aesthetic values of the Lower American River. San Juan's purveyor-specific Water Forum Agreement includes specified reductions in the amount of surface water that San Juan will divert from Folsom Reservoir during specified dry-year conditions. Water supply shortage solutions under this Plan will be consistent with the terms of the Water Forum Agreement.

2. This Plan utilizes a combination of demand management measures and the conjunctive use of surface water and groundwater supplies to meet the water needs of San Juan and the Member Agencies during conditions of water shortage.

3. Measures to address reductions in surface water diversions by using groundwater will be for the mutual benefit and interest of all Member Agencies.

4. Member Agencies that receive groundwater supplies from other Member Agencies under this Plan will pay the costs incurred to provide these groundwater supplies.

5. Water supply shortage provisions will be implemented in a manner that protects the water supplies and financial interests of affected ratepayers, including their investment in existing facilities.

6. Member Agencies that provide groundwater supplies under this Plan will retain ownership of their own groundwater production facilities.

7. San Juan will administer this Plan, including entering into agreements with Member Agencies to provide, distribute and account for groundwater supplies, monitor the sustainability of the yield of the affected groundwater aquifer and take other actions necessary to implement this Plan. San Juan will consult with the Member Agencies as necessary regarding the implementation of this Plan, and keep the Member Agencies informed as to the status of water supply conditions and water shortage management actions.

## DEFINED TERMS

When used in this Plan, the following terms are defined as set forth in this section:

8. **“Annual Facility Capital Costs”** means annual costs paid by the Benefiting Agencies to compensate Groundwater Suppliers for capital costs for the book value of existing groundwater facilities, and the costs for new or replacement production facilities. The costs include the costs for issuing and satisfying debt .

9. **“Benefiting Agencies”** means those Member Agencies that (i) desire to receive additional allotments of surface water during a Period of Shortage by virtue of other Member Agencies’ using alternative supplies under this Plan, and (ii) commit to make the payments provided for under this Plan.

10. **“Citrus Heights”** means Citrus Height Water District.
11. **“Commodity Costs”** means costs directly associated with the production of groundwater or other alternative water supplies during a Period of Shortage that are not included in Operation and Maintenance Costs, to the extent these costs exceed the cost of delivery of surface water to the Member Agency under the wholesale water supply agreement.
12. **“CVP”** means Reclamation's Central Valley Project.
13. **“Emergency Shortage”** means a reduction in surface water deliveries to San Juan below 54,200 acre-feet annually. Conditions of Emergency Shortage are not subject to this Plan.
14. **“Fair Oaks”** means Fair Oaks Water District.
15. **“Folsom”** means of the City of Folsom.
16. **“Groundwater Production Facilities”** means wells, pumps, piping, electrical controls and other physical components that are necessary for the production and distribution of groundwater by Groundwater Suppliers as defined in Appendix A, which may be revised as part of the annual review of this Plan.
17. **“Groundwater Suppliers”** means those Member Agencies that have available groundwater in excess of their own needs under all but Emergency Shortage conditions.
18. **“Level of Service”** means the amount of water to be made available to Member Agencies during a Period of Shortage and is determined in relation to historical demands during normal water years.
19. **“Member Agencies”** means the following retail water service providers that receive wholesale water service from San Juan: (1) Citrus Heights; (2) Fair Oaks; (3) Orange Vale; (4) San Juan in its capacity as a retail water service provider; and (5) Folsom relative to that portion of its service area north of the American River.
20. **“Operation and Maintenance Costs”** mean costs (e.g., labor, parts, supplies, etc.) for routine operation and maintenance of the Groundwater Production Facilities necessary to ensure that groundwater production capacity will be available when groundwater is needed under this Plan.
21. **“Orange Vale”** means Orange Vale Water Company.

22. **“Period of Shortage”** means the periods of time when surface water availability to the Member Agencies is reduced under the terms of the wholesale water supply agreements between San Juan and the Member Agencies.

23. **“Reclamation”** means the United States Bureau of Reclamation.

24. **“San Juan”** means the San Juan Water District.

25. **“San Juan’s Water Treatment and Conveyance Facilities”** means the water diversion, pumping, treatment and conveyance facilities that are used by San Juan to make surface water available to the Member Agencies.

26. **“Water Forum Agreement”** means the Memorandum of Understanding dated January 2000 among the various signatories that contains seven elements, which include “Actions to Meet Customers Needs While Reducing Diversion Impacts in Drier Years,” “Support for Improved Pattern of Fishery Flow Releases from Folsom Reservoir,” and the “Groundwater Management Element.” The Water Forum Agreement includes a purveyor-specific agreement for San Juan’s service area. San Juan would implement provisions relating to reductions in surface water diversions in certain dry years pursuant to a separate agreement between San Juan and the United States Bureau of Reclamation.

## **SURFACE WATER SUPPLY SHORTAGE**

### **Surface Water Supplies Available To San Juan**

27. San Juan makes water available to the Member Agencies under the wholesale water supply agreements from surface water supplies that are available to San Juan from time to time. San Juan will use its best efforts to preserve and protect these water rights and entitlements, which currently include the following: (1) a pre-1914 appropriative water right to divert at the rate of 60 cubic feet per second (“cfs”) from the American River with a priority date of 1853, which is delivered from Folsom Reservoir by Reclamation without charge to San Juan under a 1954 agreement between San Juan and Reclamation (and confirmed in San Juan's long-term CVP water service Agreement), for use anywhere within San Juan’s service area; (2) an appropriative water right under permit no. 4009 (application 5830, filed on February 11, 1928) to divert at the rate of 15 cfs from the American River, which is delivered from Folsom Reservoir by Reclamation without charge under the 1954 agreement between San Juan and Reclamation (and confirmed in San Juan's long-term CVP water service contract), for use anywhere within San Juan’s service area; (3) San Juan’s long-term CVP water service agreement for 24,200 acre feet per year, for use anywhere within San Juan’s service area; (4) a water supply agreement dated

December 7, 2000 between San Juan and Placer County Water Agency for 25,000 acre feet per year (for use in San Juan's Placer County service area); and (5) temporary supplies of surplus water from Reclamation under Section 215 of Public Law 97-293, which may be available from time to time, for use anywhere within San Juan's service area. The total amount of water delivered to San Juan under its pre-1914 water right and its appropriative water right permit is 33,000 acre-feet per year.

28. The amount of water available annually under San Juan's long-term CVP water service contract and San Juan's water supply agreement with Placer County Water Agency are subject to reduction during times of shortage in accordance with the terms of these agreements. Reclamation allocates during times of shortage water based on historic use. San Juan is within Reclamation's American River Division of the CVP. San Juan will request that Reclamation consider groundwater pumped by Member Agencies in lieu of taking delivery of CVP water to be equivalent to use of CVP water by San Juan for purposes of determining historic use. In addition, San Juan's Water Forum Agreement provides for reduced surface water diversions as specified during certain dry years. San Juan will be responsible for monitoring the potential for reductions in surface water supplies under the CVP and PCWA agreements, as well as in accordance with the terms of San Juan's Water Forum Agreement. San Juan will keep the Member Agencies informed of the projected surface water availability for the water year, and the likelihood of a declaration of water shortage.

29. San Juan's ability to deliver water supplies to meet demand to the Member Agencies is also subject to interruption due to damage to and/or maintenance of the water storage and conveyance facilities used by Reclamation to deliver San Juan's CVP water supplies, or due to damage to and/or maintenance of San Juan's Water Treatment and Conveyance Facilities. San Juan and the Member Agencies are developing a separate plan for dealing with these types of Emergency Conditions.

### **Declaration of Water Shortage**

30. San Juan will utilize all available water supplies, including other sources of supply that San Juan may obtain from time to time, to avoid a Period of Shortage to the Member Agencies. In the event of a Period of Shortage, San Juan will provide prompt notification of the extent of such shortage to the Member Agencies.

31. San Juan will estimate how much groundwater will be needed to meet the desired Level of Service during the Period of Shortage, after a shortage is declared. The desired Level of Service may be tied to the declared conservation stage.

## **Availability of Groundwater Production Facilities**

32. Citrus Heights, Fair Oaks and Orange Vale Water Company will independently determine how much groundwater they have available for delivery to the other Members Agencies during the Period of Shortage that would be surplus to the quantities needed to satisfy water demands within their respective service areas. San Juan will determine the quantities of groundwater to obtain under agreements with the Groundwater Suppliers as necessary to provide the Levels of Service of other Member Agencies under this Plan. San Juan will coordinate the operation of Groundwater Production Facilities and the surface water system to provide the Level of Service. San Juan will be responsible for notifying the Groundwater Suppliers of their obligations under this Plan for the water year, and the Groundwater Suppliers will use their best efforts to meet their groundwater pumping obligations. San Juan may reduce surface water deliveries to a Groundwater Supplier during a Period of Shortage equivalent to the amount of groundwater pumping obligation of the Groundwater Supplier to the extent of the ability of the Groundwater Supplier to pump groundwater from Groundwater Production Facilities. This Plan recognizes, however, that the ability to pump groundwater from Groundwater Production Facilities cannot be guaranteed despite the best efforts of the Groundwater Suppliers, and that in a given Period of Shortage, one Groundwater Supplier could require a supplemental water supply from another Groundwater Supplier, in which case an equitable adjustment in credits and charges for the water-short Groundwater Supplier will be made by San Juan in consultation with the other Member Agencies. Groundwater Production Facilities are and will remain the property of the individual Member Agencies and will only be operated by that Member Agency. Member Agencies that do not have access to groundwater will receive surface water in an amount necessary to meet the Level of Service subject to making the payments provided for in this Plan.

## **Termination of Plan**

33. This Plan will remain in effect during the term of the wholesale water supply agreements and during any period of renewal, though any Member Agency may withdraw from the Plan upon five years' notice to the other Member Agencies. At its option, a Member Agency may withdraw from the Plan prior to the expiration of the five-year notice period, but only upon payment of the member's proportionate share of the Annual Facility Capital Costs for existing Groundwater Production Facilities, new or replacement Groundwater Production Facilities, Operation and Maintenance Costs, and Commodity Costs for the entirety of the five years.

## **Operation and Maintenance of Groundwater Facilities**

34. Each Groundwater Supplier will maintain its Groundwater Production Facilities to ensure water is available to meet its obligations under this Plan. Groundwater Suppliers will provide a list of anticipated capital improvement projects and costs to San Juan for Groundwater Production Facilities for each five-year period coinciding with the San Juan's five-year financial plan, which will include proposals for construction of new or replacement Groundwater Production Facilities.

## **Rates and Charges for Groundwater**

35. Rates and charges to cover the costs of production and delivery of groundwater under this Plan will include the following: (1) Annual Facility Capital Costs for existing Groundwater Production Facilities; (2) Annual Facility Capital Costs for new or replacement Groundwater Production Facilities; (3) Operation and Maintenance Costs; and (4) Commodity Costs.

36. Annual Facility Capital Costs will be determined using the existing value of each Groundwater Production Facility divided by the years of remaining life of the facility (assuming an initial 40-year useful life for wells, piping, and buildings, and 25-year life for pumps, motors and other equipment), which will be added together to determine the total Annual Facility Capital Cost. The Annual Facility Capital Cost will be divided by the total groundwater capacity of the Groundwater Production Facility to calculate the Annual Facility Capital Cost per unit of groundwater. The Annual Facility Capital Cost will be reimbursed based on total groundwater capacity an individual Groundwater Supplier has committed to the Benefiting Agencies (based on the five-year running average of water demands and groundwater needs) under the Plan. An example of this calculation is attached to this Plan as Appendix B.

37. The amount of the Annual Facility Capital Cost and rates and charges for groundwater produced under this Plan to Benefiting Agencies will be recalculated annually. Operation and Maintenance Cost allocations will be based on the percent of each Groundwater Supplier's total groundwater capacity committed to the Benefiting Agency. Commodity Costs will be allocated based on actual per-acre-foot cost basis. An example of this calculation is attached to this Plan as Appendix B.

38. Each Groundwater Supplier will submit to San Juan an invoice documenting Operation and Maintenance Costs and Commodity Costs on a quarterly basis. Credits due to Groundwater Suppliers and payments due by Benefiting Agencies will be determined by San Juan consistent with this Plan, and will be reflected on the billing invoices that San Juan sends to the Member

Agencies for charges under the wholesale water supply agreements. Payment of the rates and charges will be a condition to a Benefiting Agency receiving supplemental water supplies under the Plan.

### **Priority for Use of Groundwater from Groundwater Production Facilities**

39. Groundwater produced by the Member Agencies during a Period of Shortage will be used in the following priority: (1) to satisfy water demands within their respective service areas; (2) to provide the Level of Service of other Member Agencies under this Plan; (3) to assist in meeting water demands by other American River Division CVP water supply contractors during years of surface water reductions under the Water Forum Agreement; and (4) to facilitate water transfers for use outside of the American River Division of the CVP. The terms and conditions of this Plan, including but not limited to rates, are not intended to apply to water transferred for use outside the San Juan service area.

## **GENERAL PROVISIONS**

### **Technical Committee**

40. San Juan and each Member Agency will appoint a representative to a technical committee to provide assistance as necessary in implementing this Plan, provided that, San Juan retains authority to administer and implement this Plan.

### **Periodic Review; Amendment.**

41. San Juan and the Member Agencies will meet not less than once every year to review all aspects of the administration and implementation of this Plan, and recommend procedures and amendments as appropriate. The review will be conducted on or around September 1 of each year, and any revisions will go into effect on January 1 of the following year. No amendment to this Plan will take effect before it has been approved by San Juan and each of the Member Agencies. The annual review will include a consensus based determination of wells to be included in the shortage plan and costs.

SAN JUAN WATER DISTRICT SURFACE WATER SUPPLY  
AND  
WATER SHORTAGE MANAGEMENT PLAN

APPENDIX A

GROUNDWATER PRODUCTION FACILITIES AVAILABLE FOR WATER SHORTAGE MANAGEMENT

Draft: February 27, 2008

Groundwater Production Facility	Groundwater Supplier	Year Completed	Groundwater Production Rate GPM	MGD
Palm Avenue Well No. 1A	Citrus Heights Water District	1991	1,210	1.7
Sylvan Road Wall No. 8	Citrus Heights Water District	1991	1,550	2.2
Sunrise School Well No. 10	Citrus Heights Water District	1992	895	1.3
Mitchell Farms Well No. 11	Citrus Heights Water District	2008	750	1.1
New York Well No.	Fair Oaks Water District		830	1.2
Northridge Well No.	Fair Oaks Water District		960	1.4
Town Well No.	Fair Oaks Water District	2007	2,075	3.0
Heather Well No.	Fair Oaks Water District	2007	2,035	2.9
Well No. 2	Orange Vale Water Company		995	1.4
TOTAL			11,730	16.9

**Appendix F**  
**Orange Vale Water Company Water Shortage Contingency Plan**



**ORANGE VALE WATER COMPANY**  
**9031 Central Avenue**  
**OrangeVale, CA 95662-0800**  
**(916) 988-1693**

**MANDATORY REQUIREMENTS – STAGES 1-5**

**WATER CONSERVATION STAGE DECLARATION**

Upon declaration or amendment by the Board of Directors of a specific Stage in effect as defined in Section I, the following mandatory water conservation requirements shall be in effect.

The declaration of Short-Term Stage 4 or Stage 5 water conservation requirements may be declared by the agency's General Manager or his/her designee and subject to ratification by the agency's Board of Directors in a regular or special session. A short-term declaration is for water shortage conditions expected for a duration of 45 days or less.

## **STAGE 1 – NORMAL WATER SUPPLY**

1. Water shall be used for beneficial purposes only; all unnecessary and wasteful uses of water are prohibited.
2. Water shall be confined to the customer's property and shall not be allowed to run-off to adjoining properties or to the roadside ditch or gutter. Care shall be taken not to water past the point of saturation.
3. Free-flowing hoses for all uses are prohibited. Automatic shut-off devices shall be attached on any hose or filling apparatus in use.
4. Leaking customer pipes or faulty sprinklers shall be repaired within five (5) working days or less if warranted by the severity of the problem.
5. All pools, spas, and ornamental fountains/ponds shall be equipped with a recirculation pump and shall be constructed to be leak-proof. Pool draining and refilling shall be allowed only for health, maintenance, or structural considerations.
6. Washing streets, parking lots, driveways, sidewalks, or buildings, except as necessary for health, esthetic or sanitary purposes, is prohibited.
7. Customers are encouraged to take advantage of the water agency's conservation programs and rebates.

## **STAGE 2 - WATER ALERT**

1. Water shall be used for beneficial purposes only; all unnecessary and wasteful uses of water are prohibited.
2. Water shall be confined to the customer's property and shall not be allowed to run-off to adjoining properties or to the roadside ditch or gutter. Care shall be taken not to water past the point of saturation.
3. Free-flowing hoses for all uses are prohibited. Automatic shut-off devices shall be attached on any hose or filling apparatus in use.
4. Leaking customer pipes or faulty sprinklers shall be repaired within five (5) working days or less if warranted by the severity of the problem.
5. All pools, spas, and ornamental fountains/ponds shall be equipped with a recirculation pump and shall be constructed to be leak-proof. Pool draining and refilling shall be allowed only for health, maintenance, or structural considerations.
6. Washing streets, parking lots, driveways, sidewalks, or buildings, except as necessary for health, esthetic or sanitary purposes, is prohibited.
7. Customers are encouraged to take advantage of the water agency's conservation programs and rebates.
8. Reduce landscape and pasture irrigation by 5 to 10%. Customers with "smart" irrigation timers or controllers are asked to set their controllers to achieve 90 to 90% of the evapotranspiration (ET) rate. Drip irrigation systems are excluded from this requirement.
9. Reduce indoor water use by 5 to 10%. Contact your water provider for tips and techniques to reduce indoor water use.
10. Users of construction meters and fire hydrant meters will be monitored for efficient water use.

### **STAGE 3 – WATER WARNING**

1. Water shall be used for beneficial purposes only; all unnecessary and wasteful uses of water are prohibited.
2. Water shall be confined to the customer's property and shall not be allowed to run-off to adjoining properties or to the roadside ditch or gutter. Care shall be taken not to water past the point of saturation.
3. Free-flowing hoses for all uses are prohibited. Automatic shut-off devices shall be attached on any hose or filling apparatus in use.
4. Leaking customer pipes or faulty sprinklers shall be repaired within five (5) working days or less if warranted by the severity of the problem.
5. All pools, spas, and ornamental fountains/ponds shall be equipped with a recirculation pump and shall be constructed to be leak-proof. Pool draining and refilling shall be allowed only for health, maintenance, or structural considerations.
6. Washing streets, parking lots, driveways, sidewalks, or buildings, except as necessary for health, esthetic or sanitary purposes, is prohibited.
7. Customers are encouraged to take advantage of the water agency's conservation programs and rebates.
8. Reduce landscape and pasture irrigation by 11 to 25%. Customers with "smart" irrigation timers or controllers are asked to set their controllers to achieve 75 to 89% of the evapotranspiration (ET) rate. Drip irrigation systems are excluded from this requirement.
9. Reduce indoor water use by 11 to 25%. Contact your water provider for tips and techniques to reduce indoor water use.
10. Users of construction meters and fire hydrant meters will be monitored for efficient water use.
11. Restaurants shall serve water only upon request.

#### **STAGE 4 – WATER CRISIS: SHORT-TERM**

The declaration of Short-Term Stage 4 water conservation requirements may be declared by the agency's General Manager or his/her designee and subject to ratification by the agency's Board of Directors in a regular or special session. A short-term declaration is for water shortage conditions expected for a duration of 45 days or less.

1. Water shall be used for beneficial purposes only; all unnecessary and wasteful uses of water are prohibited.
2. Water shall be confined to the customer's property and shall not be allowed to run-off to adjoining properties or to the roadside ditch or gutter. Care shall be taken not to water past the point of saturation.
3. Free-flowing hoses for all uses are prohibited. Automatic shut-off devices shall be attached on any hose or filling apparatus in use.
4. Leaking customer pipes or faulty sprinklers shall be repaired within 24 hours or less if warranted by the severity of the problem.
5. All pools, spas, and ornamental fountains/ponds shall be equipped with a recirculation pump and shall be constructed to be leak-proof. No potable water from the District's system shall be used to fill or refill swimming pools, artificial lakes, ponds or streams. Water use for ornamental ponds and fountains is prohibited.
6. Washing streets, parking lots, driveways, sidewalks, or buildings, except as necessary for health, esthetic or sanitary purposes, is prohibited.
7. Customers are encouraged to take advantage of the water agency's conservation programs and rebates.
8. Reduce landscape and pasture irrigation by 26 to 50%. Customers with "smart" irrigation timers or controllers are asked to set their controllers to achieve 50 to 74% of the evapotranspiration (ET) rate. Drip irrigation systems are excluded from this requirement.
9. Reduce indoor water use by 26 to 50%. Contact your water provider for tips and techniques to reduce indoor water use.
10. Users of construction meters and fire hydrant meters will be monitored for efficient water use. Use of reclaimed water for construction purposes is encouraged.
11. Restaurants shall serve water only upon request.
12. Flushing of sewers or fire hydrants is prohibited except in case of emergency and for essential operations.

13. Installation of new turf or landscaping is prohibited.

## **STAGE 4 – WATER CRISIS: LONG-TERM**

The declaration of Long-Term Stage 4 water conservation requirements will be by the agency's Board of Directors in a regular or special session. A long-term declaration is for water shortage conditions expected for a duration of more than 45 days.

1. Water shall be used for beneficial purposes only; all unnecessary and wasteful uses of water are prohibited.
2. Water shall be confined to the customer's property and shall not be allowed to run-off to adjoining properties or to the roadside ditch or gutter. Care shall be taken not to water past the point of saturation.
3. Free-flowing hoses for all uses are prohibited. Automatic shut-off devices shall be attached on any hose or filling apparatus in use.
4. Leaking customer pipes or faulty sprinklers shall be repaired within 24 hours or less if warranted by the severity of the problem.
5. All pools, spas, and ornamental fountains/ponds shall be equipped with a recirculation pump and shall be constructed to be leak-proof. No potable water from the District's system shall be used to fill or refill swimming pools, artificial lakes, ponds or streams. Water use for ornamental ponds and fountains is prohibited.
6. Washing streets, parking lots, driveways, sidewalks, or buildings, except as necessary for health or sanitary purposes, is prohibited.
7. Customers are encouraged to take advantage of the water agency's conservation programs and rebates.
8. Reduce landscape and pasture irrigation by 26 to 50%. Customers with "smart" irrigation timers or controllers are asked to set their controllers to achieve 50 to 74% of the evapotranspiration (ET) rate. Drip irrigation systems are **NOT** excluded from this requirement.
9. Reduce indoor water use by 26 to 50%. Contact your water provider for tips and techniques to reduce indoor water use.
10. Water for flow testing and construction purposes from water agency fire hydrants and blow-offs is prohibited. Use of reclaimed water for construction purposes is encouraged.
11. Restaurants shall serve water only upon request.
12. Flushing of sewers or fire hydrants is prohibited except in case of emergency and for essential operations.

13. Installation of new turf or landscaping is prohibited.

14. N/A

15. Water Crisis/Emergency tiered pricing will be implemented.

16. No commitments will be made to provide service for new water service connections.

## **STAGE 5 – WATER EMERGENCY: SHORT-TERM**

The declaration of Short-Term Stage 5 water conservation requirements may be declared by the agency's General Manager or his/her designee and subject to ratification by the agency's Board of Directors in a regular or special session. A short-term declaration is for water shortage conditions expected for a duration of 45 days or less.

1. Water shall be used for beneficial purposes only; all unnecessary and wasteful uses of water are prohibited.
2. Water shall be confined to the customer's property and shall not be allowed to run-off to adjoining properties or to the roadside ditch or gutter. Care shall be taken not to water past the point of saturation.
3. Free-flowing hoses for all uses are prohibited. Automatic shut-off devices shall be attached on any hose or filling apparatus in use.
4. Leaking customer pipes or faulty sprinklers shall be repaired immediately. Water service will be suspended until repairs are made.
5. All pools, spas, and ornamental fountains/ponds shall be equipped with a recirculation pump and shall be constructed to be leak-proof. No potable water from the District's system shall be used to fill or refill swimming pools, artificial lakes, ponds or streams. Water use for ornamental ponds and fountains is prohibited.
6. Washing streets, parking lots, driveways, sidewalks, or buildings, except as necessary for health or sanitary purposes, is prohibited.
7. Customers are encouraged to take advantage of the water agency's conservation programs and rebates.
8. Landscape and pasture irrigation is prohibited.
9. Reduce indoor water use by more than 50%. Contact you water provider for tips and techniques to reduce indoor water use.
10. Water for flow testing and construction purposes from water agency fire hydrants and blow-offs is prohibited. No potable water from the District's system shall be used for construction purposes including but not limited to dust control, compaction, or trench jetting. Use of reclaimed water for construction purposes is encouraged.
11. Restaurants shall serve only upon request.
12. Flushing of sewers or fire hydrants is prohibited except in case of emergency and for essential operations.

13. Installation of new turf or landscaping is prohibited.

14. Automobiles or equipment shall be washed only at commercial establishments that use recycled or reclaimed water.

## **STAGE 5 – WATER EMERGENCY: LONG-TERM**

The declaration of Long-Term Stage 5 water conservation requirements will be by the agency's Board of Directors in a regular or special session. A long-term declaration is for water shortage conditions expected for a duration of more than 45 days.

1. Water shall be used for beneficial purposes only; all unnecessary and wasteful uses of water are prohibited.
2. Water shall be confined to the customer's property and shall not be allowed to run-off to adjoining properties or to the roadside ditch or gutter. Care shall be taken not to water past the point of saturation.
3. Free-flowing hoses for all uses are prohibited. Automatic shut-off devices shall be attached on any hose or filling apparatus in use.
4. Leaking customer pipes or faulty sprinklers shall be repaired immediately. Water service will be suspended until repairs are made.
5. All pools, spas, and ornamental fountains/ponds shall be equipped with a recirculation pump and shall be constructed to be leak-proof. No potable water from the District's system shall be used to fill or refill swimming pools, artificial lakes, ponds or streams. Water use for ornamental ponds and fountains is prohibited.
6. Washing streets, parking lots, driveways, sidewalks, or buildings, except as necessary for health or sanitary purposes, is prohibited.
7. Customers are encouraged to take advantage of the water agency's conservation programs and rebates.
8. Landscape and pasture irrigation is prohibited.
9. Reduce indoor water use by more than 50%. Contact you water provider for tips and techniques to reduce indoor water use.
10. Water for flow testing and construction purposes from water agency fire hydrants and blow-offs is prohibited. No potable water from the District's system shall be used for construction purposes including but not limited to dust control, compaction, or trench jetting. Use of reclaimed water for construction purposes in encouraged.
11. Restaurants shall serve only upon request.
12. Flushing of sewers or fire hydrants is prohibited except in case of emergency and for essential operations.
13. Installation of new turf or landscaping is prohibited.

14. Automobiles or equipment shall be washed only at commercial establishments that use recycled or reclaimed water.
15. Water Crisis/Emergency tiered pricing will be implemented.
16. New connections to the District water distribution system will not be allowed.

**J. CROWLEY GROUP**  
WATER RESOURCES PLANNING AND POLICY

