



## File 2 of 3: Drought References

These are the references cited in Attachment 2. Copies of the references provided in this file are numbered at the top to match the list below.

1. (BAIRWMP) San Francisco Bay Area Integrated Regional Water Management Plan. 2013. Page 4-21. Available: <http://bairwmp.org/>. Accessed May 30, 2013.
2. County of San Mateo Department of Public Works. June 6, 2014a. Potential Water Shortage!!! Conservation Needed!!!
3. County of San Mateo Department of Public Works. January 31, 2014b. Water Conservation Alert!!!
4. Cuesta La Honda Guild. March 7, 2014a. Letter to Guild Members and Water Account Holders: page 2.
5. Cuesta La Honda Guild. April 16, 2014b. Official Notice of the Cuesta La Honda Guild, April General Membership Meeting.
6. (DSRSD) Dublin San Ramon Services District. June 2011. 2010 Urban Water Management Plan: page 1, 122-128. Available: <http://www.drsrd.com/open-gov/library/planning-reports-studies>.
7. DSRSD. May 6, 2014. Drought Actions to Reduce Water use 25% Overall. Available: [http://www.drsrd.com/news\\_and\\_event/2014-05-06%20New-Release-Drought-Rates-Limitations-and-Penalties.pdf](http://www.drsrd.com/news_and_event/2014-05-06%20New-Release-Drought-Rates-Limitations-and-Penalties.pdf). Accessed May 30, 2014.
8. (DWR) California Department of Water Resources. 2013. California Water Plan Update 2013, Chapter 3: page 6. Urban Water Use Efficiency. Available: [http://www.water.ca.gov/calendar/materials/vol3\\_urbanwue\\_apr\\_release\\_16033.pdf](http://www.water.ca.gov/calendar/materials/vol3_urbanwue_apr_release_16033.pdf).
9. DWR. 2014a. Summary of Water Conditions in California, May 1, 2014. California Data Exchange Center. Available: [http://cdec.water.ca.gov/cgi-progs/products/WC\\_REGION\\_SUM.pdf](http://cdec.water.ca.gov/cgi-progs/products/WC_REGION_SUM.pdf). Accessed May 29, 2014.
10. DWR California Data Exchange Center. June 25, 2014b. Lake Oroville – Storage Conditions as of June 25, 2014. Available: <http://cdec.water.ca.gov/cdecapp/resapp/resDetailOrig.action?resid=ORO>. Accessed June 26, 2014.
11. DWR. 2014c. One of California’s Driest Years Ever. Available: <http://www.water.ca.gov/waterconditions/>. Accessed May 30, 2014.
12. DWR. 2014d. Drought Information. Available: <http://www.water.ca.gov/waterconditions/drought/>. Accessed May 30, 2014.
13. (EBMUD) East Bay Municipal Utility District. 2011a. Urban Water Management Plan 2010: page 1-2. Available: <https://www.ebmud.com/water-and-wastewater/water-supply/urban-water-management-plan>.
14. EBMUD. 2011b. Water Conservation Master Plan: page 1-3.
15. EBMUD. 2014a. Latest Water Supply Update.
16. EBMUD. 2014b. WaterSmart Center. Available: <https://www.ebmud.com/water-and-wastewater/watersmart-center>. Accessed May 30, 2014.
17. Fulwiler, J. May 16, 2014. Letter to Water Users re: San Gregorio Creek Water Availability – Notice to 2nd Priority Water Users to Reduce Diversion.
18. Green, J. April 2, 2014. Mountain View council declares ‘Stage 1’ emergency. San Jose Mercury News.
19. (MMWD) Marin Municipal Water District. June 2011a. 2010 Urban Water Management Plan: page 5-4. Available: <http://www.marinwater.org/217/Water-Supply-Planning>.

20. MMWD. February 2011b. Title 13: Water Service Conditions and Water Conservation Measures; Chapter 13.02: Water Conservation and Dry Year Water Use Reduction Program: page 113, 119a-119l.
21. MMWD. 2014a. Rebates. Available: <http://www.marinwater.org/136/Conservation>. Accessed May 30, 2014.
22. MMWD. 2014b. Drought Information – July 1, 2014 Update. Available: <http://www.marinwater.org/318/Drought-Information>. Accessed July 10, 2014.
23. Molver, B. June 26, 2014. ICS209 oes50 (San Mateo County Drought Report). Sheriff's Office, Office of Emergency Services.
24. Murtert, E. July 2014. Drought forces some campsite closures in San Mateo County parks.
25. National Drought Mitigation Center. June 24, 2014. U.S. Drought Monitor – California.
26. Office of the Mayor, City and County of San Francisco. February 10, 2014. Executive Directive 14-01, Water Conservation – City Departments.
27. (SCVWD) Santa Clara Valley Water District. 2010. Urban Water Management Plan: page 6-4. Available: <http://www.valleywater.org/Services/UWMP2010.aspx>.
28. SCVWD. February 2013a. FY 2013-2014 Protection and Augmentation of Water Supplies: page 14. Available: <http://www.valleywater.org/Services/PAWS2013.aspx>.
29. SCVWD. 2013b. FY 2012-2013 Annual Report: page 2.
30. SCVWD. March 25, 2014a. Supplemental Board Agenda Memorandum Re: Update on 2014 Water Supply and Drought Response: page 4.
31. SCVWD. February 25, 2014b. Supplemental Board Agenda Memorandum Re: Update on 2014 Water Supply Outlook: page 3.
32. SCVWD. May 27, 2014c. Supplemental Board Agenda Memorandum Re: Update on Water Supply and Drought Response: page 2, 3.
33. SCVWD. May 2014d. Neighborhood Update - Reservoir and local stream conditions.
34. SCVWD. May 2014e. May 2014 Water Tracker.
35. SCVWD. 2014f. Key water conservation rebates will double until September. Available: <http://www.valleywater.org/programs/waterconservation.aspx>. Accessed May 30, 2014.
36. (SFPUC) San Francisco Public Utilities Commission. 2011. 2010 Urban Water Management Plan: page 33-34, 61-62. Available: <http://www.sfwater.org/index.aspx?page=75>.
37. SFPUC. 2014. Rebates and Incentives – Save Resources and Money. Available: <http://www.sfwater.org/index.aspx?page=129>. Accessed June 27, 2014.
38. Sommer, L. February 11, 2014. Record Drought Could Hurt Water Quality. KQED Science. Available: <http://blogs.kqed.org/science/2014/02/11/record-drought-could-hurt-water-quality/>. Accessed June 27, 2014.
39. (SWRCB) State Water Resources Control Board. May 27, 2014. Letter to East Bay Municipal Utility District Re: Notice of Unavailability of Water and Immediate Curtailment for those Diverting Water in the Sacramento and San Joaquin River Watersheds with a Post-1914 Appropriative Right.
40. (USGS) United States Geologic Survey. 2013. Water Data Report 2013 – 11162570 San Gregorio Creek at San Gregorio, CA.
41. USGS. 2014. Mean Daily Flow Data at USGS 11162570 San Gregorio Creek at San Gregorio, CA for the period January 1, 2014 to July 10, 2014.
42. Zone 7 Water Agency. 2010. 2010 Urban Water Management Plan: page 2-6.



# San Francisco Bay Area *Integrated Regional Water Management Plan*

September 2013



## Table of Contents

---

### **Executive Summary**

- Chapter 1: Governance**
- Chapter 2: San Francisco Bay Area Region Description**
- Chapter 3: Goals and Objectives**
- Chapter 4: Resource Management Strategies**
- Chapter 5: Integration of Supporting Activities**
- Chapter 6: Project Review Process**
- Chapter 7: Impacts and Benefits**
- Chapter 8: Performance and Monitoring**
- Chapter 9: Data Management**
- Chapter 10: Financing**
- Chapter 11: Technical Analysis**
- Chapter 12: Relation to Local Water Planning**
- Chapter 13: Relation to Local Land Use Planning**
- Chapter 14: Stakeholder Engagement**
- Chapter 15: Coordination**
- Chapter 16: Climate Change**

## Table of Contents (cont'd)

---

### List of Appendices

---

- A-1: Coordinating Committee Chair and Vice Chair Roles
- A-2: Coordinating Committee Voting Principles
- B-1: Guidance Document for Salt and Nutrient Management Plans
- B-2: Sonoma Valley Salt and Nutrient Management Plan
- B-3: Sample Integration Policies
- B-4: BAIRWMP Climate Change Adaptation: Resources for Policy Development
- C: Project Template
- D: Local and Regional Water Resource Plan Inventory
- E-1: Master Stakeholder List and Sample Messages
- E-2: Stakeholder Assessment
- E-3: Agenda for April 17, 2012 Stakeholder Engagement Planning Workshop
- E-4: Stakeholder Engagement Plan
- E-5: Summary of Subregional Activities
- E-6: General Outreach Materials
- E-7: Materials from Public Workshops
- E-8: Disadvantaged Community Outreach Materials
- E-9: Materials for Outreach to Bay Area Native American Tribes

enhance, and maintain environmental resources and habitats.

### Existing Bay Area Efforts

There is widespread implementation of this management strategy throughout the Bay Area. Over the last twenty plus years, the population in the Bay Area has increased significantly while water use has remained relatively constant, due in part to increases in urban water use efficiency (refer to Section 2.4, Chapter 2). An analysis of statewide and regional water consumption estimated that the Bay Area’s per capita water use was among the lowest in the state, at 157 gallons per capita per day (DWR 2010).

Most Bay Area water agencies are members of the California Urban Water Conservation Council (CUWCC) and have committed to implementing Best Management Practices (BMPs) to reduce California’s long-term urban water demands. In 2009 the CUWCC adopted changes to the list of BMPs to provide more flexibility in achieving water conservation while identifying BMPs all members are expected to implement (“Foundational BMPs”) as a matter of their regular course of business, including Utility Operations (metering, water loss control, pricing, use of a conservation coordinator, wholesale agency assistance programs and water waste ordinances) and Education (public information and school education programs).

Additionally, as described in Section 2.4, the Water Conservation Bill of 2009 requires progress towards a statewide 20 percent reduction in per capita water use by 2020, and mandated that each urban retail supplier establish a water use target in the 2010 UWMPs. The legislation further requires that retailers report an interim 2015 water use target, their baseline daily per capita use, and 2020 compliance daily per capita use, along with the basis for determining those estimates.

Conservation programs being implemented by Bay Area water agencies, often in partnership with land use agencies, include:

- Residential Water Surveys
- Residential Plumbing Retrofits
- High Efficiency Toilet (HET) Rebates
- System Water Audits
- Metering
- Large Landscape Programs
- Washing Machine Rebates
- Public Information Programs
- School Education Programs
- Regional Water Campaigns
- Commercial, Industrial, Institutional Programs
- Wholesale Assistance
- Conservation Pricing
- Conservation Coordinator
- Water Waste Prohibitions
- Replacement
- Weather-based Irrigation Controller
- Bay Friendly Landscape Program

#### 4.2.2 Strategies to Improve Operational Efficiency

This set of management strategies targets improvements in the efficiency, reliability and effectiveness of water supply storage and delivery systems to provide multiple benefits associated with water supply reliability, flood hazard management, environmental resource protection, and, in some cases, public access and recreation.

## POTENTIAL WATER SHORTAGE!!! CONSERVATION NEEDED!!!

June 6, 2014

**Re: Water Conservation in CSA-7**

Dear CSA-7 Water System Customers:

On January 31, 2014 we asked that you conserve water in every way possible due to the drought conditions. We thank you for your efforts to date.

As you are aware, Alpine Creek (Creek) is CSA-7's only source of water approved by the California Department of Public Health. CSA-7 has been monitoring the depth of the Creek flow at the system intake for the last few months. Based on our recent monitoring, it appears that the Creek may become dry over the summer months. Should the Creek reach a critical depth above the system intake, CSA-7 will not be able to draw water from the Creek.

CSA-7 has informed the State and County Offices of Emergency Services, the County's Environmental Health Division, and the State Department of Public Health of its current situation and the potential need to acquire water from other sources. To prepare for this potential emergency, staff is working with these agencies and other water providers in the County to formulate a contingency plan should CSA-7 not be able to pump water from the Creek.

Conserving water can be as simple as turning off water when not in use, fixing leaks, washing full loads of laundry, etc. More information on water conservation can be found at:

<http://www.wateraware.org/>

We appreciate your ongoing efforts in conserving water and will inform you if there are changes to the current situation. If you have any questions please call (650) 363-4100.

Very truly yours,



Mark Chow, P.E.  
Principal Civil Engineer  
Utilities-Flood Control-Watershed Protection

mc

G:\Users\utility\water\\_CSA-7\CUSTOMER\CSA7 Conservation Letter\_Jun 2014.doc

cc: Supervisor Horsley, District 3, County of San Mateo  
James C. Porter, P.E., Director of Public Works  
Ann M. Stillman, P.E., Deputy Director of Public Works





# COUNTY OF SAN MATEO

BOARD OF SUPERVISORS  
DAVE PINE  
CAROLE GROOM  
DON HORSLEY  
WARREN SLOCUM  
ADRIENNE J. TISSIER

## Department of Public Works

JAMES C. PORTER  
DIRECTOR

555 COUNTY CENTER, 5<sup>TH</sup> FLOOR • REDWOOD CITY • CALIFORNIA 94063-1665 • PHONE (650) 363-4100 • FAX (650) 361-8220

# WATER CONSERVATION ALERT!!!

January 31, 2014

**Re: Water Conservation in CSA-7**

Dear CSA-7 Water System Customers:

On January 17, 2014 Governor Edmund G. Brown, Jr. declared a drought state of emergency and encouraged all Californians to conserve water in every way possible. As you are aware, Alpine Creek is CSA-7's only source of water approved by the California Department of Public Health. Although CSA-7 has not yet received a notice from the Watermaster requiring mandatory reductions in water diversion from Alpine Creek, it is unpredictable how long the drought will continue and its prolonged effect on CSA-7's water supply.

Conserving water can be as simple as turning off water when not in use, fixing leaks, washing full loads of laundry, etc. More information on water conservation can be found at:

<http://www.wateraware.org/>

**We appreciate your efforts in conserving water.** If you have any questions please call (650) 363-4100.

Very truly yours,

A handwritten signature in blue ink that reads "Mark Chow".

Mark Chow, P.E.  
Principal Civil Engineer  
Utilities-Flood Control-Watershed Protection

mc

G:\users\utility\water\\_CSA-7\CUSTOMER\CSA7 Conservation Letter 2014.doc

cc: Supervisor Horsley, District 3, County of San Mateo  
James C. Porter, P.E., Director of Public Works  
Ann M. Stillman, P.E., Deputy Director of Public Works



## Save Water Right at Home

*In California, water is a limited resource. Add to this a growing population and it's clear we need to work together to stretch our existing water supplies. You can help by conserving water inside and outside your home. And, don't forget, saving water saves energy and money and it's easy to do!*

### Indoor water saving tips

- Only run full loads in the washing machine and if you are purchasing a new washer sometime soon, purchase a water and energy saving model.
- Don't let the water run while you're washing dishes or brushing your teeth.
- Use water-saving showerheads and take shorter showers.
- Only run full loads in the dishwasher.
- Fix leaky faucets and toilets – if the toilet flapper valve leaks, it's an easy problem to fix and stops enormous waste of water.

This article, in English and four other languages, can be submitted to local newspapers, magazines or used in newsletters to encourage water conservation. It is available for free from [www.wateraware.org](http://www.wateraware.org)

### Outdoor water saving tips

- Use drip irrigation for your flowers, trees and garden.
- Stop watering before water starts to flow from your yard to the gutter.
- Know how to use your automatic sprinkler system, and set your time to local watering hours. Turn it off during rainy seasons and don't let sprinklers run if it's raining. Water your yard in the early morning or late evening to minimize evaporation and don't use the sprinklers on windy days.
- Maintain your sprinkler systems and fix leaking pipes.
- Make sure your sprinklers are directed toward watering the yard, not the sidewalk or driveway.
- Consider replacing part of your lawn with a deck, patio or low water-use plants. Grass is one of the highest users of water in outdoor landscaping.
- Instead of a hose, use a broom to clean driveways and walkways.
- Use a shutoff nozzle on your hose.
- Cover pools and spas to reduce evaporation.

### By following these easy tips, an average California family can help save this much water:

- Landscaping with plants and flowers that need a little water can use 50 percent less water
- Only watering the lawn when it needs it saves about 1500 gallons a month
- Covering the pool saves about 1000 gallons a month
- Cleaning the driveway and sidewalk with a broom instead of a hose saves about 150 gallons each time
- Running full loads in the washing machine and dishwasher saves about 800 gallons a month
- Taking five minute showers while using a low-flow showerhead can save about 600 gallons of water a month
- Fixing leaky faucets and pipes saves about 140 gallons a month

**Cuesta La Honda Guild  
Common Interest Development**



Professionally managed by



March 7, 2014

Dear Guild Members and Water Account Holders,

**As the third year of record-low rainfall begins, the Guild is taking several steps to manage our water supply until the next rainy season and beyond.**

Members of the Water Resources Committee have made a model of water diversion, storage and use to assess if we are in immediate danger of running critically low on water, and, if current weather patterns continue, how long supplies might last. The two creeks from which we divert our raw water, Mindego and Woodhams, have had low but steady flows since last spring. At these flows, Cuesta would be able to meet typical water use year-round, although the reserves in our reservoirs would be lower than normal. However, we do not know if those flows will indeed continue or if they may drop if rainfall remains low. If supply in these creeks drops, conservation efforts will be required to avoid a critical shortage. For example, if creek flow drops 50% over the next year, and if we continue to use water at current rates, we project a shortage by the fall of 2015. However, under the same scenario, a 20% reduction in water use would assure supply through 2015 until the next wet season. If we are lucky, next year will bring more rain – but we may not be lucky.



*This colorful sign, painted by LH resident at the request of the CLHG Board, may be repainted and moved occasionally.*

The good news: Many La Honda residents already have begun to conserve water aggressively. Voluntary conservation in late January and early February has reduced average use by about 25-30%. Please keep up the good work!

**To maintain a sufficient supply, we need to keep conserving water by at least 20% throughout the year.** That is why, on February 19, the Board adopted an emergency water rationing measure to halve the current allotment per account (the amount included in your monthly Guild payment) to 600 cubic feet / month (from 1200 cubic feet / month), and to charge for any amounts above the basic allocation according to a new tiered-pricing plan. The plan will go into effect after a **15-day comment period. It will remain in effect for up to 120 days, although the Board will be continually reevaluating and might adjust the policy.**

Recent rain has lifted our total rainfall during July-February from 20% to 30% of the 20-year median – still well below normal. Many La Honda residents have expressed their deep concern for stretching our water supply through the year. Thank you -- and keep using water carefully!

Sincerely,  
The Cuesta La Honda Guild Board of Directors

**MOTION ADOPTED BY CUESTA LA HONDA GUILD BOARD OF DIRECTORS  
FEBRUARY 19, 2014**

To adopt a water-rationing program per the provisions of Civil Code 4360, Section d, and the rule change will suspend the existing monthly allotment and water over-usage fees of Operating Procedure 304.4, to be replaced by a new allotment and fee schedule to be determined by the Board. The rationing program will start April 1, after meter readings are accomplished, and will remain in place for 120 days, although throughout that period the term and rates will be subject to Board review and possible adjustment. For each service connection, charges will be as follows

<b>Water use per month (cubic feet)</b>	<b>Water use per month (gallons)</b>	<b>Charge per cubic foot</b>	<b>Total additional fee at this rate of water use</b>
up to 600 cubic feet	4,488 gallons, or almost 150 gallons/day in a 30-day month	\$0 (this amount comes with your monthly dues)	0
601-800 cubic feet	an additional 1,489 gallons, or about 50 gallons/day in a 30-day month	\$0.12	\$24
801-1000 cubic feet	an additional 1,489 gallons, or about 50 gallons/day in a 30-day month	\$0.25	\$74
1001-1200 cubic feet	an additional 1,489 gallons, or about 50 gallons/day in a 30-day month	\$0.35	\$144
Greater than 1,200 cubic feet		\$0.50	\$0.50 per additional cubic foot

**Cuesta La Honda Guild  
Common Interest Development**



Professionally managed by



**Official Notice of the  
Cuesta La Honda Guild  
April General Membership Meeting  
Wednesday, April 16, 2014 – 7:00 PM  
The Guild Clubhouse**

You are invited to attend the April Membership Meeting of the Cuesta La Honda Guild, a California non-profit Corporation, being held on **Wednesday, April 16, 2014 at 7:00 PM.**

**AGENDA**

- Confirmation of Quorum of Members
- Call to Order and Welcoming Remarks
- Review of Informational Minutes of the November 2013 General Membership Meeting
- Fall General Membership Meeting Date: Wednesday, November 19, 2014
- Homeowners' Forum
- Financial Report
  - 2014 Budget
  - Current 2014 Balance Sheet
  - CPA 2013 Year End Review
- Recreation Committee Projects
- Pool Season - Pool Opens Saturday, May 24, 2014
- Public Works Projects - Public Works Manager, Peter Lyon
- Water Committee – Drought issues/Water conservation – David Ehrhardt
- Adjourn (Estimate at 8 p.m.)

The Board appreciates your cooperation and involvement and looks forward to seeing you at the **General Membership Meeting, Wednesday, April 16, 2014.** A brief Board Meeting will be held prior to the General Membership Meeting at 6:30 PM, and the Board Meeting will resume after if time allows.

**Thank you, Cuesta La Honda Guild Board of Directors**

## Cuesta La Honda Guild Common Interest Development



Professionally managed by



### **Strong voluntary water conservation allows water rationing to be rescinded.**

At the February Board of Directors meeting, the BOD passed a motion to initiate an emergency water-rationing plan for Cuesta La Honda. As explained in a previous mailing, the record drought, combined with unusually high water use in the fall and early part of January, prompted concern that if the drought continues through next year, water demand at these high rates of use would outstrip supply. This concern was supported by modeling water supply over the next two years. The BOD responded by informing the community of the problem, encouraging water conservation, and adopting the rationing plan.

The rationing plan was adopted with the goal of encouraging a reduction in water use by at least 20%. This level of reduction was predicted in the water model to significantly extend the Guild's water supply in the event of sustained drought, getting the system through 2015 to the winter of 2016, provided that stream flow slows but does not stop. The adoption of the conservation plan was also meant to indicate clearly the seriousness of the situation to the community. Fortunately, since public education efforts began, Guild water use has dropped about 30%, exceeding the goal of a 20% reduction. This reduction has been sustained, so at the March meeting, the BOD rescinded the rationing plan for the time being. Good job Cuesta!

#### **It is important that the community understand that this does not mean we are out of the woods.**

Conservation needs to be continued and increased as warm weather approaches. The Guild is closely monitoring water use, trends in stream flow, and reservoir levels. Changes in water supply or demand may prompt the need for new conservation goals. The BOD would much rather see conservation goals met by voluntary efforts rather than the "big stick" of a rationing plan with a lower base allotment and overuse fees, but it is prepared to implement a rationing plan if voluntary efforts fail to meet those conservation goals.

After the motion passed in February to adopt a rationing plan, the BOD received a number of letters and comments from Guild members. This feedback is valuable for decision makers and we thank the community for their engagement. We would like to take this opportunity to respond to a few of the many good questions that were asked and issues that were raised.

**Why was the base allotment in the rationing plan set at 50% of the normal allotment, when the goal is a 20% reduction in use?** Designing and implementing a rationing plan is not an exact science. A cutoff level for the base allotment needs to be established and a fee structure designed. The goal is to achieve a certain level of reduced water use, not to achieve a revenue stream. Some customers already use an

## Cuesta La Honda Guild

absolute minimum of water, and would have a hard time reducing their use further, while others use more than the base allotment. At the last meter reading, where overall water use was higher than normal, about 80% of Guild water accounts had used 50% or less of the base allotment. This was the basis for the 50% percent reduction in the base allotment in the rationing plan.

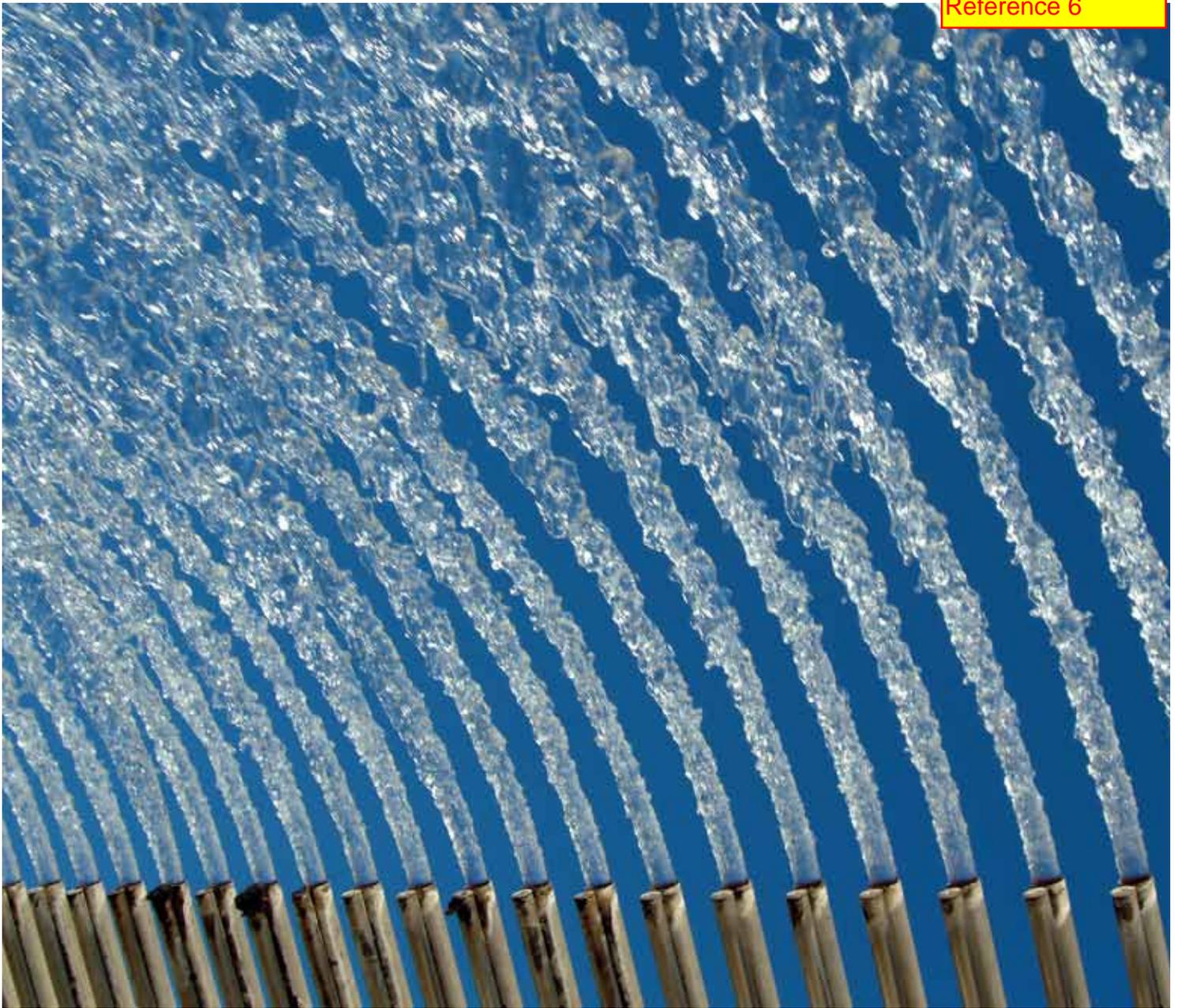
**The USGS estimates that the average water use per person is 80-100 gallons per day. The Guild's proposed base allotment (600 cubic feet per month) would have been less than half of that for a family of four. This would have been difficult and/or near impossible for a family of 4, and rather impossible for a larger family.** The proposed allotment reduction was indeed a tight squeeze for a family of four. It is hard to find a one-size-fits-all solution, which is why, in the event of adopting a mandatory rationing plan, the Board plans to offer a case-by-case appeal process. The USGS data indicated how much water was used per capita, not what a reasonable minimum amount of treated water should be per person. The USGS data for a family of 4 is above the normal allotment in Cuesta. The last time water meters were read, in January, only nine accounts were over the normal allotment. The nine accounts included the Guild's account because of a leak in the pool (which has since been stopped). The point of a rationing plan is to motivate strong water conservation practices, not to impose undue hardship.

**It is speculation that next year may be as dry as this year.** This is true, but it is also speculation that the weather will return to normal. This drought is unusual in recent history, and there is no way to know if next year will be a return to "normal" or not. Preparing for the possibility of a second dry year is easier if we build raw water reserves now at modest levels of conservation, rather than having to protect those reserves with much deeper cuts in use later.

**The proposed conservation plan expires in three months and, if needed, cannot be re-implemented as an emergency measure.** While the law allows the BOD to implement a change in fee structure on an emergency basis for three months, it does not permit extending such a change by the same mechanism. That would require a change to the Guild's bylaws. Therefore, the BOD is drafting an amendment to the Guild's bylaws, as part of our Drought Contingency Plan, which would allow for more flexible implementation of a water-rationing plan, should it be needed in the future. This amendment will of course be subject to comment and approval by the membership.

Sincerely,

Cuesta La Honda Guild Board of Directors



Dublin San Ramon Services District  
**2010 Urban Water Management Plan**

JUNE 2011



TABLE OF CONTENTS



# Table of Contents

<b>Executive Summary</b> .....	<b>1</b>
<b>ES.1 Overview</b> .....	<b>1</b>
ES.2 Plan Preparation, Coordination and Adoption .....	1
ES.3 Implementation .....	2
ES.4 Water System Description .....	3
ES.5 System Demands.....	4
ES.6 System Supplies .....	6
ES.7 Water Supply Reliability .....	9
ES.8 Water Shortage Contingency and Drought Plan.....	14
ES.9 Demand Management Measures .....	15
<b>0.0 Introduction</b> .....	<b>17</b>
Purpose .....	17
Plan Contents and Organization .....	18
Glossary of Terms and Acronyms.....	21
Contact.....	23
<b>1.0 Plan Preparation, Coordination and Adoption</b> .....	<b>24</b>
1.1 Plan Preparation .....	24
1.2 Plan Coordination .....	24
1.3 Plan Adoption and Submittal .....	27
1.4 Implementation .....	27
<b>2.0 Background and System Description</b> .....	<b>29</b>
2.1 DSRSD History.....	29
2.2 Service Area Physical Description.....	30
2.3 Water Service Area Population .....	33

**TABLE OF CONTENTS**

2.4 Customer Demographics .....34

**3.0 Past, Present and Projected Water Demands .....46**

3.1 Baselines and Targets .....46

3.2 DSRSD Water Demands .....53

3.3 Projected Wholesale Water Demands.....62

3.4 Water Use Reduction Plan .....63

**4.0 System Supplies.....73**

4.1 Water Sources.....73

4.2 Groundwater .....86

4.3 Water Transfer Opportunities.....91

4.4 Desalinated Water Opportunities .....92

4.5 Recycled Water .....93

4.6 Future Water Supply Projects .....102

**5.0 Water Supply Reliability and Water Shortage Contingency Plan .....105**

5.1 Water Supply Reliability .....105

5.2 Water Quality Impacts on Reliability.....118

5.3 Water Shortage Contingency and Drought Plan.....122

**6.0 Demand Management Measures .....133**

6.1 Foundational BMPs .....136

BMP 1.1.2 Water Waste Prevention .....137

6.2 Programmatic BMPs .....147

BMP 3.2 Landscape Water Survey.....150

6.3 Estimate of Conservation Savings .....159

6.4 BMPs Not Implemented .....159

**7.0 Checklist by Topic .....160**

**8.0 References .....169**



# Executive Summary

## ES.1 Overview

Dublin San Ramon Services District (DSRSD) is subject to the California Urban Water Management Planning Act (UWMP Act) and SBx7\_7, the Water Conservation Act of 2009. DSRSD is an urban water supplier that delivered 8,801 acre-feet (AF) of potable water and 1,729 AF of recycled water to approximately 17,955 customers<sup>1</sup> in the City of Dublin in Alameda County, California, and the Dougherty Valley area of San Ramon in Contra Costa County, California in 2010.

The UWMP Act requires urban water suppliers to report, describe, and evaluate water deliveries and uses, water supply sources, efficient water uses, and demand management measures (DMMs), including implementation strategy and schedule. DSRSD prepared this *2010 Urban Water Management Plan (UWMP)* to conform to the UWMP Act as updated, Senate Bill (SB) 610 Water Supply Assessments and SB 221 Written Verifications of Water Supply, Assembly Bill (AB) 1420 (implementation of the Water Conservation Act of Water Demand Management Measures), and SBx7\_7, the Water Conservation Act of 2009. The latter requires urban water suppliers to report base daily per capita water use (baseline), an urban water use target, an interim urban water use target, and compliance daily per capita water use.

Additionally, DSRSD has applied for the California Department of Water Resources (DWR) Proposition 84 Round 1 Implementation Grant as part of the San Francisco Bay Area Integrated Regional Water Management Plan. Completion of this 2010 UWMP is a condition of receiving a grant award.

## ES.2 Plan Preparation, Coordination and Adoption

The preparation and adoption of this 2010 UWMP is discussed in detail in Section 1. DSRSD coordinated with Zone 7 Water Agency (Zone 7, the region's water wholesaler) and the region's other water retailers to compile a complete assessment of the region's available

---

1. DSRSD Engineering Department, number of DSRSD potable and recycled water meters as of December 31, 2010.

into the California Aqueduct for use by contractors downstream of Semitropic; the water quality of this “pump-in” water will therefore have an effect on these contractors. Arsenic criteria were established for this pump-in by the DWR Facilitation Group to mitigate any impacts to the downstream contractors, and DWR, Semitropic, and the banking partners have been testing arsenic treatment options since 2008. While the presence of arsenic in the Semitropic groundwater bank is likely to increase the cost of this water storage option, it is not likely to affect its overall reliability.

### **5.2.2 Recycled Water Quality**

The recycled water that DSRSD distributes comes from DSRSD’s RWTF, which is described in Section 4.5.2. Wastewater effluent from DSRSD’s regional wastewater treatment plant is treated to produce Title 22 disinfected tertiary recycled water. DSRSD anticipates no significant changes to the land uses in DSRSD’s wastewater service area; therefore, it does not anticipate any changes to the quality of the wastewater effluent that it treats to recycled water quality. DSRSD’s water service area is over the fringe basin of the Livermore-Amador Valley, which is not used for potable water supplies; thus, its recycled water distribution is not limited by its impact to groundwater supplies. For all of these reasons, DSRSD does expect recycled water quality issues to impact its ability to reliably deliver recycled water to its customers.

---

## **5.3 Water Shortage Contingency and Drought Plan**

*Water Code Sections 10632(a), 10632(c), 10632(d), 10632(e), 10632(f), 10632(g), and 10632(h)*

DSRSD’s Water Shortage Contingency and Drought Plan addresses situations when catastrophic water supply interruptions occur due to regional power outage, earthquake, or other disasters; and when drought occurs due to environmental, climatic, or legal issues. The plan is based on DSRSD Ordinance No. 323, DSRSD’s Emergency Response Plan (ERP), and DSRSD Code Section 4.10.030(C), which are described in further detail below. The adoption of this Water Shortage Contingency and Drought Plan is concurrent with the adoption of DSRSD’s 2010 UWMP and supersedes any previous water shortage contingency plan.

The DSRSD Board of Directors adopted Ordinance No. 323<sup>76</sup> in June 2009 to update both its water conservation program and its program for managing DSRSD water supplies during any water shortage condition declared by the DSRSD Board of Directors. The ordinance also

---

76. District Ordinance No. 323, An Ordinance Repealing Ordinance Nos. 242 and 244, Establishing a Water Conservation Program and a Program for Management of the Water Supplies of the District During Any Water Shortage Condition declared by the Board of Directors of DSRSD and Establishing Regulations and Restrictions on the Delivery and Consumption of Water and Penalties for Ordinance Violations During a Declared Water Shortage Condition, adopted by the District Board of Directors on June 2, 2009.

established regulations and restrictions on the delivery and consumption of water and penalties for ordinance violations during a declared water shortage. A copy of Ordinance No. 323, as well as DSRSD's adopted Water Conservation Program<sup>77</sup>, is provided in Appendix P. This ordinance addresses both water emergencies (catastrophic water interruptions) and drought conditions. During water emergencies, DSRSD Ordinance No. 323 authorizes the DSRSD General Manager to declare a water emergency and initiate implementation of the ERP. The ERP provides DSRSD with a standardized response and recovery protocol to prevent, minimize, and mitigate injury and damage resulting from emergencies or disaster of natural or man-made origins. DSRSD updates the ERP periodically to ensure that newly developed parts of its service area and the associated infrastructure are taken into account.

When DSRSD recodified its code in November 2010, Section 4.10.030(C) (included in Appendix Q) was added to regulate water use during any type of water shortage. This provision authorizes the DSRSD general manager to prescribe and enforce rules governing water allocation and use of water. It also provides the DSRSD general manager with guidelines for allocating water supply during shortages.

### **5.3.1 Stages of Action**

*Water Code Section 10632(a), 10632(c)*

The ERP and the Water Conservation Program adopted in DSRSD Ordinance 323 include four stages of water demand reductions, summarized in Table 5-9, which can be implemented depending on the severity of conditions. The plan does not provide numeric targets for triggering a shortage stage, nor specific reduction percentages, except in emergency situations. The intent is to maintain some degree of flexibility for DSRSD to respond to water supply shortages. Numeric minimum targets provide a guideline for quick decision-making only during emergencies.

Normal supply conditions are those periods when DSRSD water supplies are adequate or more than adequate to meet the ordinary demands and requirements of DSRSD's water customers for the current year and a reasonable planning horizon, typically five years.<sup>78</sup> A water shortage condition occurs when the supply of potable water available to DSRSD for distribution and sale may not be adequate to meet ordinary water demands without reducing the supply to the extent that water supply is insufficient to meet human consumption, sanitation, fire protection, and other beneficial uses. During non-emergency times, when DSRSD anticipates or identifies that water supplies (as a result of climatic conditions, regulatory changes, legal mandates, environmental regulations, or any other cause) may not be adequate to meet the normal water supply needs of its customers, the DSRSD Board of

---

77. Adopted by Resolution 20-09, June 16, 2009.

78. DSRSD normally provides Zone 7 a five-year water demand projection and Zone 7 responds with confirmation that it will be able to meet the projected demand.

<b>Stage No.</b>	<b>Water Supply Conditions<sup>1</sup></b>	<b>% Shortage<sup>2</sup></b>
1	Identifiable events lead to a reasonable probability that in the next few years, DSRSD potable water supplies will not be adequate to meet the normal water demands and requirements of DSRSD's water customers and users.	5% or greater
2	Identifiable events lead to a reasonable probability that in the current or upcoming year, DSRSD potable water supplies will not be adequate to meet the normal water demands and requirements of DSRSD's water customers and users.	15% or greater
3	Identifiable events lead to a reasonable conclusion that in the current year, DSRSD potable water supplies will not be adequate to meet the normal water demands and requirements of DSRSD's water customers and users.	30% or greater
4	Stage 3 water shortage provisions have been in effect and water use reduction have not been achieved to maintain adequate water supply for health and safety, or when new events require greater water conservation.	50% or greater
<sup>1</sup> Stages as defined in DSRSD Ordinance 323.		
<sup>2</sup> In accordance with ERP Action Plan 9 - Water Supply Interruption. To be followed only during emergency		

Directors may determine that a water shortage exists and consider a resolution to declare a water shortage condition and associated stage for water conservation.

For example, the DSRSD Board of Directors declared Stage 1 Water Shortage Condition and requested 20 percent voluntary water conservation by resolution in June 2009 in response to reduced deliveries from the SWP and a third year of below normal precipitation. A copy of Resolution 34-09 is included in Appendix R. In form, this resolution provides a template for any future resolution in situations where the DSRSD Board of Directors needs to declare a water shortage.

During times of emergency, the DSRSD general manager is authorized to declare a water emergency and implement the provisions in the ERP, including appropriate action plans to address imminent water supply shortages.<sup>79</sup> When an imminent water supply interruption occurs, the DSRSD general manager may declare the necessary stage for water conservation.

---

79. DSRSD Ord. 323.

**5.3.1.1 Stage 1 and 2 – Voluntary Water Conservation**

Stage 1 water conservation is voluntary. Stage 2 water conservation may also be voluntary, as deemed appropriate by the DSRSD Board of Directors. The Board declares these stages when it determines, with reasonable probability, that the water supply may not be adequate to meet all demands in the current year or next few years. DSRSD may be able to deliver its customers' normal water demands but wants help from customers to ensure adequate supply. At these stages, DSRSD uses public outreach and customer service to encourage the best management practices in DSRSD's water conservation program, as described in Section 6. Because water reduction measures are voluntary, no penalties are applied.

**5.3.1.2 Stage 2, 3, and 4 – Mandatory Prohibitions and Restrictions**

*Water Code 10632(d) and 10632 (e)*

In Stage 2, water conservation may be declared mandatory. In Stages 3 and 4, water conservation is always mandatory. Stage 2 water conservation is declared mandatory if Stage 2 voluntary water conservation targets are not met and when, due to definable events, there is greater certainty water supplies will be inadequate to meet customer demands during the current year or upcoming year. Stage 3 mandatory water conservation is declared when, due to definable events, there is firm certainty that the water supply will be inadequate to meet customers' demands in the current year. If Stage 3 mandatory water conservation is in effect and the reduction goal is not being met, or if a new definable event occurs that requires increasing the goal, the DSRSD Board of Directors may declare Stage 4 mandatory water conservation. During times of imminent water supply interruption, the DSRSD general manager is authorized to make a determination and declare an appropriate stage of water conservation in response to the emergency at hand. If water supplies are reduced by 50 percent for a single year, the DSRSD Board of Directors may declare Stage 4 water conservation and require the prohibitions and water consumption reduction measures described below to be mandatory.

In Table 5-10, mandatory water prohibition measures are itemized, along with the stage under which each prohibition becomes mandatory. Stage 2 measures become mandatory if the DSRSD Board of Directors declares mandatory Stage 2 water conservation. In Table 5-11, water consumption reduction measures are itemized, along with the stage under which each measure takes effect. If a measure is declared mandatory for a lower level stage, it is also mandatory for higher stage levels.

<b>Table 5-10. Water Shortage Contingency — Mandatory Water Prohibition Measures (DWR Table 36)</b>	
<b>Mandatory Prohibitions<sup>1</sup></b>	<b>Stage When Prohibition Becomes Mandatory<sup>2</sup></b>
<b>Street washing (CII)</b>	
Prohibit use of potable water, unless necessary for public health and safety	Stage 3
<b>Landscape irrigation (SFR, MFR, CII)</b>	
No turf irrigation, hand water other landscaping only on Saturday or Sunday	Stage 4
<b>Public swimming pools (SFR, MFR, CII)</b>	
Prohibit drain and refill, unless required for health or structural needs	Stage 4
<b>Water theme parks (CII)</b>	
Shut down; prohibit use of any water	Stage 4
<b>Private swimming pools, spas, fountains, ponds (SFR, MFR, CII)</b>	
Prohibit potable water use for ornamental ponds and fountains; drain and refill only for health or structural needs	Stage 3
Prohibit draining and refilling and initial filling of swimming pools and spas	Stage 4
<b>Private pavement (SFR, MFR, CII)</b>	
Prohibit use of potable water to wash pavement, unless required for health and safety	Stage 3
<b>Private exterior washing of autos, boats, buildings (SFR, MFR, CII)</b>	
Prohibit washing with potable water	Stage 4
<b>New or additional service (SFR, MFR, CII)</b>	
Prohibition of connection subject to SB610 definition	Stage 3
<b>Water for construction (CII)</b>	
Only recycled water (potable can be used for public health and safety projects) for construction meters	Stage 3
<b>Laundromats (CII)</b>	
Prohibit use of non-efficient washing machines	Stage 4

<sup>1</sup> SFR: single-family resident ; MFR: multifamily resident; CII: commercial, industrial, institutional customers.

<sup>2</sup> Stage 2 measures are mandatory if DSRSD Board of Directors or general manager declares mandatory Stage 2 water conservation.

<b>Table 5-11. Water Shortage Contingency — Consumption Reduction Methods (DWR Table 37)</b>	
<b>Consumption Reduction Methods</b>	<b>Stage When Method Takes Effect</b>
<b>Landscape irrigation (SFR, MFR, CII)<sup>1</sup></b>	
Shut-off nozzles; no runoff, over spray, or saturation of landscape	Stage 1
Irrigate from 9 p.m. to 6 a.m.; train/educate regarding water conserving irrigation systems and dry climate plants	Stage 1
Irrigate only on odd/even days (per odd/even address); turn off auto sprinklers when raining	Stage 2
Irrigate only Mondays and Thursdays	Stage 3
No turf irrigation, hand water other landscaping only on Saturday or Sunday	Stage 4
<b>Public swimming pools (SFR, MFR,CII)</b>	
Must be leak proof	Stage 2
Cover when not in use; equip with recalculating pump	Stage 3
Drain and refill only per health or structural needs	Stage 4
<b>Water theme parks (CII)</b>	
Require they reclaim and recycle water	Stage 3
<b>Private swimming pools, spas, fountains, ponds (SFR, MFR, CII)</b>	
Must be leak proof	Stage 1
Cover when not in use; equip with recirculating pump	Stage 2
<b>Private pavement (SFR, MFR, CII)</b>	
Use broom and bucket	Stage 2
<b>Private exterior washing of autos, boats, buildings (SFR, MFR, CII)</b>	
Use hose with shut-off nozzle and do so on a permeable surface	Stage 1
Use bucket, no more than once a month; encourage use of commercial wash services that recycle water	Stage 2
Only wash vehicles at commercial establishments that recycle water; use broom on buildings, pavement	Stage 3
<b>New or additional service (SFR, MFR, CII)</b>	
Connection subject to SB610 definition	Stage 3
<b>Water for construction (CII)</b>	
Use recycled water if cost effective; otherwise potable water use okay	Stage 1
Only recycled water (potable can be used for public health and safety projects) for construction meters	Stage 3
<b>Restaurants (CII)</b>	
Offer rebates on low flow rinse nozzles; post water conservation messages on bathroom mirrors	Stage 1
Require use of low flow rinse nozzles; require they serve water only on request	Stage 2
<b>Laundromats (CII)</b>	
Use only water-efficient washing machines	Stage 4

<sup>1</sup> SFR: single-family resident ; MFR: multifamily resident; CII: commercial, industrial, institutional customers.

<b>Table 5-12. Water Shortage Contingency — Penalties and Charges (DWR Table 38)</b>	
<b>Penalties or Charges</b>	<b>Stage When Penalty Takes Effect</b>
Penalty/fines for excess use	Stage 3
Charge for excess use	Stage 3
Cost to investigate and correct violations	Stage 3
Flow Restriction	Stage 4
Submetering	Stage 4
Discontinuance of Service	Stage 4

### **5.3.2 Penalties and Charges**

*Water Code Section 10632(f)*

When mandatory water use reduction is declared at any of the above stages, the DSRSD Board of Directors will adopt a progressive schedule of fines to be levied against customers and users for successive violations of water use restrictions established in Stages 3 and 4. Additionally, water customers and users are subject to Chapter 1.30, Enforcement, of the DSRSD Code, which provides general penalties, remedies for violations, penalties of increasing severity, and imposition of costs. Violations may be punishable as misdemeanors or infractions, depending on the severity of the violation. The DSRSD general manager is authorized to apply penalties as he or she deems appropriate, including flow restriction, submetering, and discontinuance of water service, until the violation is corrected. DSRSD may also seek damage and/or remedies, including fees or fines and the amount of costs incurred by DSRSD to investigate and correct the violation. In Table 5-12, penalties and charges and the stage when they take effect are summarized.

### **5.3.3 Emergency Actions**

*Water Code Section 10632(c)*

Water supplies may be interrupted in the future due to a regional power outage, a natural disaster such as an earthquake, or an accidental pipeline break. The ERP includes action plans that are to be used in response to such events and incidents. The action plans for various emergencies leading to water supply interruptions is included in Appendix S. Action Plan 9 specifically outlines plans to manage water supply for a range of events, including situations involving catastrophic loss of water supply. Below are several situations that DSRSD has considered.

#### **5.3.3.1 Emergency Interconnections**

DSRSD currently has five emergency pipeline interties, three with EBMUD and two with the City of Pleasanton, for rapid emergency response. The interties are strictly for emergency conditions, such as a major pipeline break, supply contamination, or interruption of deliveries due to earthquake, flood, or other disaster. These connections would allow either agency to obtain water from the other agency during an emergency. DSRSD is currently exploring an emergency intertie with the City of Livermore.

**May 6, 2014**

**Contact:** Sue Stephenson, 925-875-2295 (office)

925-998-6562 (cell), [stephenson@dsrdsd.com](mailto:stephenson@dsrdsd.com)

## **Drought Actions to Reduce Water use 25% Overall**

At a special meeting Monday, May 5, 2014, at 6:00 p.m., the Dublin San Ramon Services District Board of Directors took the following drought-related actions:

- Adopted Stage 3 shortage rates (See Attachment 1)
- Adopted water use limitations, enforcements and penalties (See Attachment 2)
- Approved a Wise Water User credit program (See Attachment 3)
- Approved enhancements to rebate programs (See Attachment 4)

“This is a serious drought,” says Operations Manager Dan Gallagher and drought coordinator at DSRSD, “Six of the past seven years have been dry. The snowpack is 5% of normal. These dry conditions could persist even beyond this year, because multi-year droughts are common in California. The bottom line is we must reduce our water use now or the demand will exceed the supply. That’s why our Board took all these actions.”

Founded in 1953, Dublin San Ramon Services District serves 157,000 people, providing potable and recycled water service to Dublin and the Dougherty Valley area of San Ramon, wastewater collection and treatment to Dublin and south San Ramon, and wastewater treatment to Pleasanton (by contract). More information about the District can be obtained at [www.dsrdsd.com](http://www.dsrdsd.com).

#

**Current Water Consumption Rates  
And Water Supply Shortage Rates**

	<b>Baseline (per ccf)</b>	<b>Stage 1 (per ccf)</b>	<b>Stage 2 (per ccf)</b>	<b>Stage 3 (per ccf)</b>	<b>Stage 4 (per ccf)</b>
<b>Associated Water Use Curtailment</b>	0%	10%	20%	35%	50%
<b>Residential Customers</b>					
Tier 1 (0-10 ccf)	\$0.51	\$0.57	\$0.641	\$0.897	\$1.308
Tier 2 (11-34 ccf)	\$1.08	\$1.35	\$1.67	\$2.15	\$3.50
Tier 3 (over 34 ccf)	\$1.44	\$1.87	\$2.80	\$4.02	\$5.53
<b>Commercial Customers</b>					
Winter (Nov-Apr) All ccf	\$1.03	\$1.12	\$1.23	\$1.55	\$1.95
Summer (May-Oct) All ccf	\$1.23	\$1.44	\$1.72	\$2.16	\$3.08
<b>Potable Irrigation Customers</b>					
All ccf	\$1.44	\$1.87	\$2.80	\$4.02	\$5.53



**Dublin San Ramon  
Services District**

*Water, wastewater, recycled water*

7051 Dublin Blvd.

Dublin, CA 94568

www.dsrdsd.com

# Community Drought Emergency LIMITS and ALTERNATIVES, VIOLATIONS and PENALTIES

**We must preserve our water supply to protect public health and safety. Customers must comply with a mandatory 25% reduction in water use.**

Total residential water use must not exceed 640 gallons of water per day—the equivalent of 50 units per bimonthly bill. (A reasonable amount of water for residential customer use is 55 gallons per person, per day. How much does your household use? Your bill shows your water use in units. One unit of water is 748 gallons.) **The most effective means of reducing water consumption is to cut irrigation by 60%. Fix all leaks immediately.**

## RESIDENTIAL AND COMMERCIAL OUTDOOR WATERING

Rebates are available for Smart Controllers and turf grass replacement, visit [www.dsrdsd.com](http://www.dsrdsd.com) for details.

Watering can be done any time of day with an efficient drip system, a bucket, or a watering can. Other means of watering have limitations. **If you use potable water to irrigate, you must cut irrigation by 50-60% and comply with these requirements:**

<p><b>1 IF you have met ALL of the conditions listed below:</b></p>	<p><b>2 THEN you may water your yard following these mandatory guidelines:</b></p>
<ul style="list-style-type: none"> <li>• If it is done on the following weekly/monthly schedule:             <ul style="list-style-type: none"> <li>- One day per week in May, Oct., and Nov.</li> <li>- Two days per week June, July, Aug., and Sept.</li> <li>- No watering Dec., Jan., Feb., and March</li> </ul> </li> <li>• If the watering occurs after 6:00 p.m. or before 9:00 a.m., and</li> <li>• If it is not raining, and it has been at least three days since it rained, and</li> <li>• If there is no runoff, ponding, flooding, or marshy conditions</li> </ul>	<ul style="list-style-type: none"> <li>• With a hose equipped with shut-off nozzle (free shutoff nozzles from DSRSD)</li> <li>• With a hose equipped with a rotating or oscillating device (must be monitored)</li> <li>• Irrigation rate must be half of the local evapotranspiration rate: ½ inch/week June thru Sept.; ¾ inch/week Oct. thru May</li> <li>• New landscaping planted before May 6, 2014, may be watered daily for the first 30 days, every other day for the next 60 days, per the weekly/monthly schedule (shown on left)</li> </ul>

## RESIDENTIAL AND COMMERCIAL WATER USE

PROHIBITED uses of water...	Alternatives
Washing driveways, sidewalks, walkways, patios, parking lots, tennis courts, exteriors of buildings or homes, and other impervious surfaces	Sweep areas with a broom
Washing vehicles, boats, trailers	Wash vehicles at a professional car wash that recirculates the water
Filling new swimming pool/spa	Delay construction
Refilling existing swimming pool/spa	Must demonstrate public health/safety need and receive prior written approval from DSRSD
"Topping - off" existing swimming pool/spa	<b>OK if it's covered*</b> when not in use, and need is due to evaporation or splash-out, and there are no leaks.
Decorative fountains and/or water features visible from areas accessible by the public	Leave them empty, unless they provide habitat for aquatic species

\* One \$50 rebate for pool/spa cover per household. Visit [www.dsrdsd.com](http://www.dsrdsd.com) for details.

Individuals may file an appeal or apply for an exemption by downloading a form at [http://www.dsrdsd.com/news\\_and\\_event/droughtwatch.html](http://www.dsrdsd.com/news_and_event/droughtwatch.html), or call Customer Service at (925) 828-8524 to request a form via email.

## **VIOLATIONS AND PENALTIES**

The use of water in violation of limitations or the waste and unreasonable use of water is a misdemeanor pursuant to the California Water Code Section 71644. A District customer who violates any water use limitations or wastes water or uses an unreasonable amount of water will be subject to the following enforcement and penalty provisions:

<b>1st violation</b>	District issues warning orally (telephone call, site visit) or in writing (door hanger, letter) specifying the violation and what the customer must do to make it right
<b>2nd violation</b>	\$250 penalty
<b>3rd violation</b>	Additional \$500 penalty
<b>4th violation</b>	Additional \$1,000 penalty
<b>5th violation</b>	Reduction in water delivered to that customer via a flow restrictor or disconnection of water service

For additional details and exceptions to the limitations, violations and penalties, please refer to the ordinances posted on the website at [http://www.drsrd.com/news\\_and\\_event/droughtwatch.html](http://www.drsrd.com/news_and_event/droughtwatch.html)

State of California  
The Natural Resources Agency  
Department of Water Resources

# California Water Plan

## Update 2013

*Investing in Innovation and Infrastructure*

**Volume 1 — The Strategic Plan**

**PUBLIC REVIEW DRAFT**

October 2013

**Edmund G. Brown Jr.**  
Governor  
State of California

**John Laird**  
Secretary for Resources  
The Natural Resources Agency

**Mark Cowin**  
Director  
Department of Water Resources

## Chapter 3. Urban Water Use Efficiency

Urban water use efficiency focuses on reducing water waste and accomplishing tasks using the least amount of water possible in municipal and industrial settings. Californians have made great progress in urban water use efficiency over the past few decades. At the individual level, the benefits of water use efficiency may appear small, incremental, or difficult to see; but when Californians act together as a community to conserve water, the cumulative effect is significant and the benefits are widespread.

Increased efficiencies can be attributed to several factors; urban water suppliers' implementation of Best Management Practices, plumbing codes requiring more efficient fixtures, the model water efficient landscape ordinance, new technologies in the commercial/industrial sector, and mandates for converting unmetered connections to metered.

However, with tighter environmental constraints on the delta, increasing population, and the necessity of adapting to climate change, even greater efficiencies will be needed, and are achievable. When faced with an increasing demand for water, water agencies can consider options for increasing supplies or reduce demand, or a combination of both, to meet this need. Increasing the water supply includes the possible costs of purchasing additional water, capital cost of production and distribution systems, water supply treatment facilities, energy costs, and wastewater treatment facilities. Reducing demand through increased water use efficiency is generally a lower cost method for meeting increased demand.

In November 2009, The Water Conservation Act of 2009, Senate Bill Number 7 of the 7<sup>th</sup> Extraordinary session (SBX 7-7), was enacted as part of a five bill package that focused on improving the reliability of California's water supply and restoring the ecological health of the Sacramento-San Joaquin Delta. SBx7-7 had multiple urban and agricultural water use efficiency provisions. The key urban conservation measure established a statewide goal of reducing urban per capita water use by 20% by 2020. To achieve this goal, the legislation directs urban retail water suppliers to set individual 2020 per capita water use targets and begin implementing conservation measures to achieve those goals. Meeting this statewide goal of 20% decrease in demand will result in almost 2 Million Acre Feet (MAF) reduction in urban water use in 2020.

Beyond the goal of achieving 20% reduction by 2020, there are important benefits to increasing urban water use efficiency, including:

- Reduced stress on the environment of the beleaguered Sacramento-San Joaquin Delta
- Reduced landscape runoff (contaminated with fertilizers, pesticides, and road debris) to surface waters
- Ability to stretch existing water supplies
- Ability to provide water for surface or groundwater storage in wet years
- Delayed capital cost of new infrastructure to treat and deliver water
- Reduced demand for wastewater treatment, including capital costs and ongoing treatment costs
- Reduced water-related energy demands and associated greenhouse gas emissions
- Better capacity to meet the water demand of California's growing population

This chapter will present the practices already employed in urban water conservation, as well as describing how further efficiencies can be made, and how the goal of 20% reduction by 2020 can be met.

### Impact of 20x2020

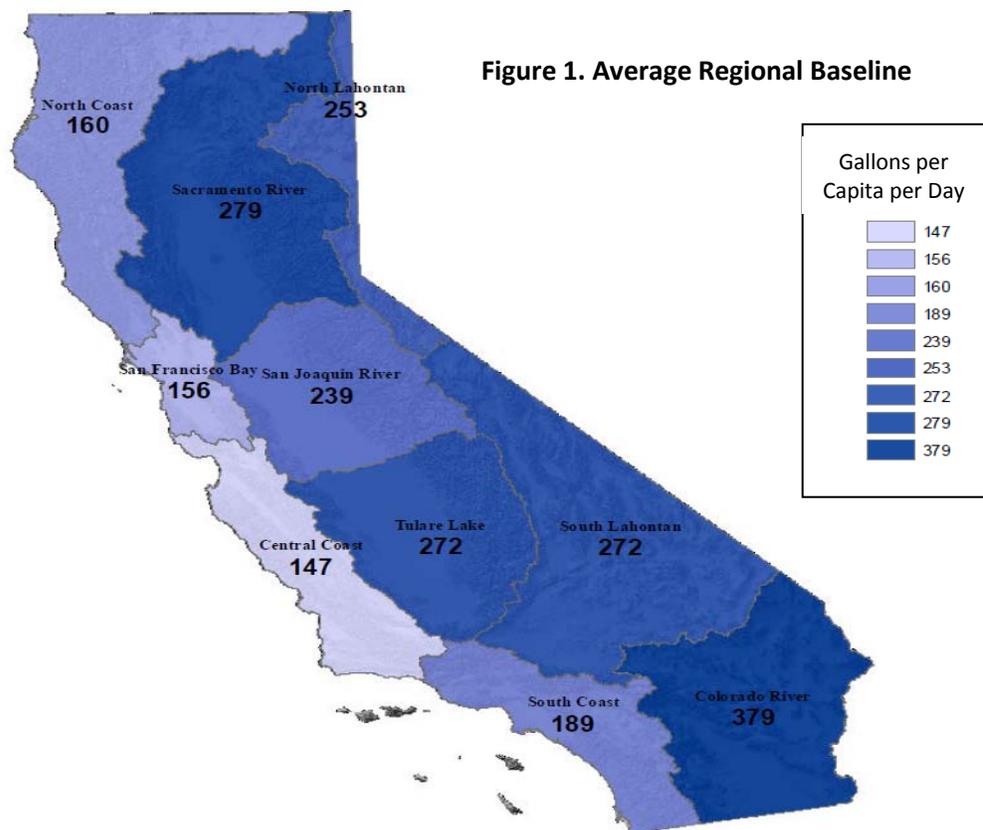
Projecting forward to the year 2020, with statewide population expected to be in the range of 44 million people, a decrease in per capita water use of 20% will equate to an annual demand reduction of 2 million acre feet of water.

The requirement that all urban retail water suppliers quantify per capita baseline water use, set water use targets, and then show actual reductions in 2015 and 2020 has caused suppliers across the state to rethink their conservation programs and service area water use. 20x2020’s emphasis on quantification forces suppliers to ensure the effectiveness of water conservation actions.

### Baseline Water Use Reported in Urban Water Management Plans

The statewide average baseline water use is 198<sup>1</sup> gallons per capita per day (gpcd) based on UWMPs from 342 retail water agencies. Though suppliers could choose any 10 consecutive years from between 1995 and 2010, most of the suppliers choose baseline periods from 1996 to 2004.

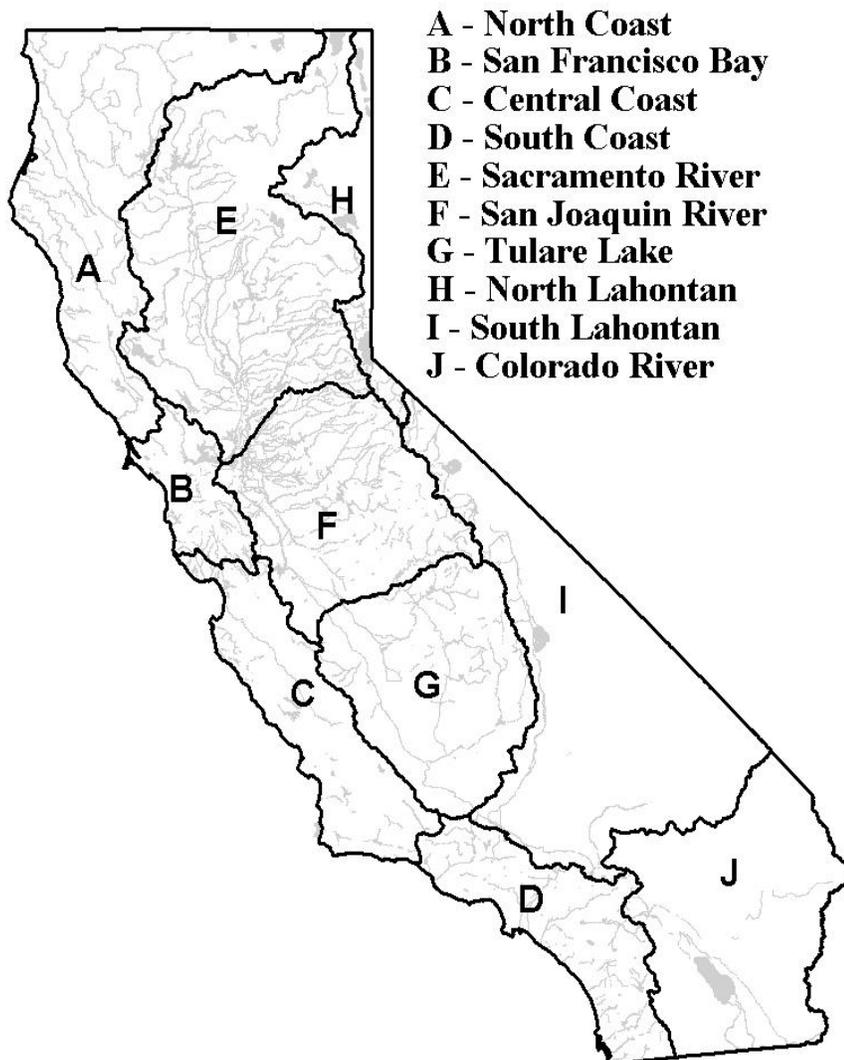
The California map below (Figure 1) shows how baseline water use differs regionally across the state with generally lower water use along the coast and increasing water use in the inland valleys. The coastal areas generally have lower water use due to the marine climate and lower evapotranspiration rates, smaller irrigated landscape areas, and previous conservation program. Many of the coastal communities along the central coast and southern California were strongly impacted by the 1988-92 drought and subsequently implemented a number of water use efficiency programs to improve their water supply reliability. Low or high per capita water use is not necessarily an indicator of efficiency as the climate and land use factors listed above can have a significant effect on water use

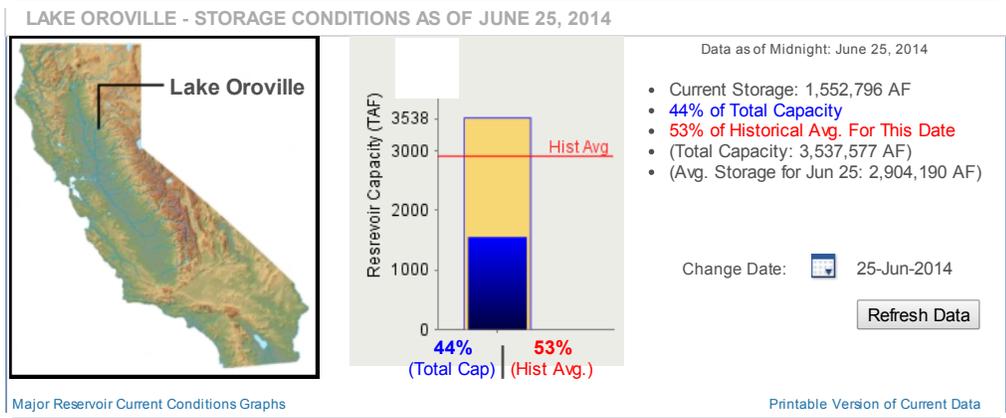


<sup>1</sup> Population weighted

**Summary of Water Conditions in California, May 1, 2014 (percent of average)**

Hydrologic Region	Precip Oct 1- date	Snow Water Content	Reservoir Storage 30-Apr	Oct 1- date	Runoff Apr thru Jul Forecast	Water Year Forecast
North Coast	50	0	65	35	25	30
San Francisco Bay	60	--	85	20	--	--
Central Coast	45	--	25	5	--	--
South Coast	40	--	75	15	--	--
Sacramento River	60	10	75	40	40	40
San Joaquin River	50	20	70	35	30	30
Tulare Lake	50	15	50	30	30	25
North Lahontan	65	10	50	50	30	35
South Lahontan	50	20	95	60	45	50
Colorado River	40	--	--	--	--	--
<b>Statewide</b>	<b>50</b>	<b>15</b>	<b>70</b>	<b>35</b>	<b>35</b>	<b>35</b>
	<b>Previous Years, Statewide</b>					
<b>May 1, 2013</b>	75	15	95	70	45	60
<b>May 1, 2012</b>	75	40	115	65	70	60
<b>May 1, 2011</b>	135	185	110	130	165	145
<b>May 1, 2010</b>	110	140	95	75	115	90
<b>May 1, 2009</b>	80	60	80	60	70	70
<b>May 1, 2008</b>	85	65	85	60	70	60
<b>May 1, 2007</b>	65	25	105	55	45	50
<b>May 1, 2006</b>	140	185	115	170	180	165



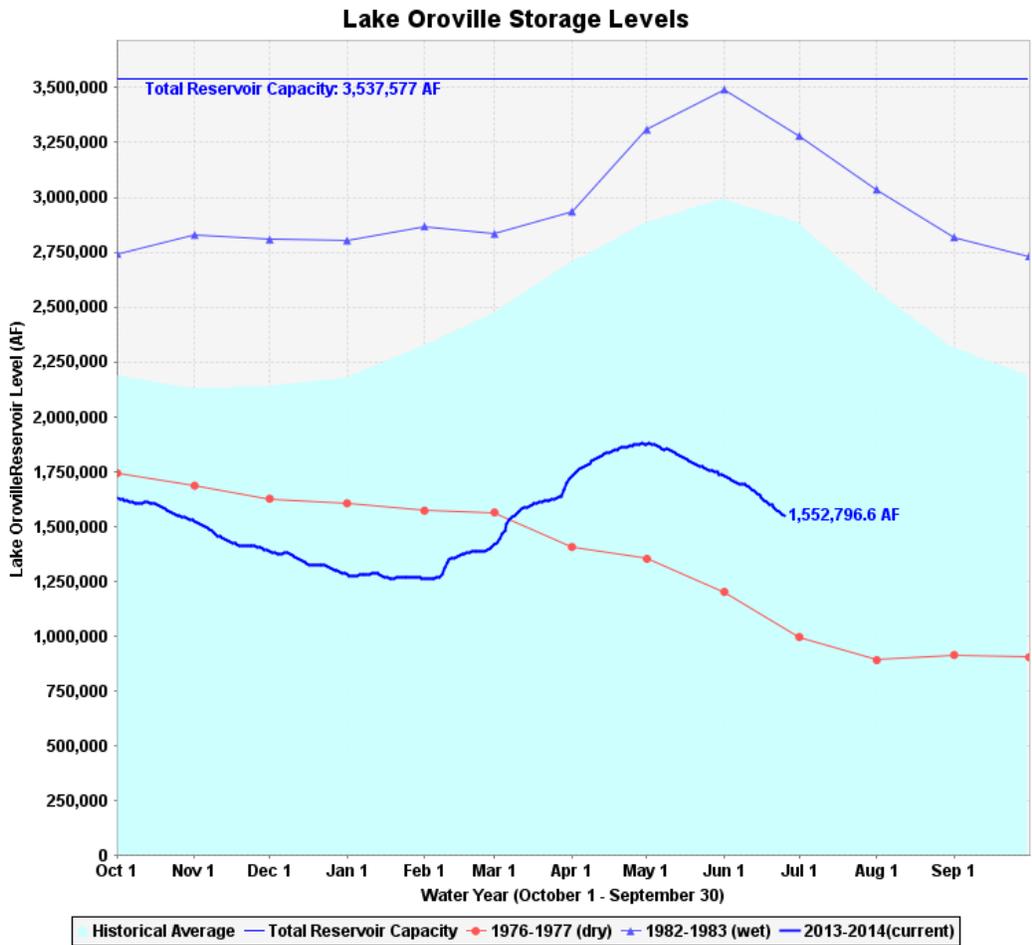


Lake Oroville Storage Level Graph: Choose water years to plot:

1976-1977 (dry)   
 1982-1983 (wet)   
 1988-1989   
 1989-1990   
 1990-1991

(chart legend appears at bottom)

(ctrl+click for multiple selections)





HOME NEWSROOM & EVENTS ISSUES ABOUT US

CA.gov | Help | Accessibility

Search

DWR  California



## Breaking Drought News

### One of California's Driest Years Ever

Calendar year 2013 closed as the driest year in recorded history for many areas of California, and the severe drought is continuing this year.

On January 17, Gov. Edmund G. Brown Jr. declared a drought state of emergency and directed state officials to take all necessary actions in response and on April 25, Governor Brown asked all Californians to redouble their efforts to conserve water, instructed agencies to cut red tape to get water to farmers more quickly, ensure that people have safe drinking water, protect vulnerable wildlife species and prepare for an extreme fire season. Read the executive order at <http://gov.ca.gov/news.php?id=18496>.

The proclamation is available here: <http://www.gov.ca.gov/news.php?id=18368>.

#### Water Deliveries Slightly Boosted

There was a bit of good news on April 18 as the Department of Water Resources (DWR) announced an increase from 0 to 5 percent in the State Water Project allocation (water delivery estimate) for the remainder of the year. If it stands, this will be the lowest SWP (SWP) allocation since deliveries began in the 1960s. The allocation -- changed or unchanged -- will be finalized later this spring. Also on April 18, the federal Bureau of Reclamation announced that senior water rights holders in the Sacramento Valley would receive 75 percent rather than 40 percent of contracted water supplies this year.

#### Drought Barriers Cancelled for 2014

February and March storms that slightly boosted water deliveries also eliminated the immediate need for salinity barriers in the Sacramento-San Joaquin Delta to control saltwater intrusion from San Francisco Bay, as described in this April 18 news release. The rock barriers would have been installed at Sutter and Steamboat sloughs near Courtland and False River near Oakley. DWR continued to assess water supply and demand in the weeks following the April 18 announcement and concluded in late May that the barriers will not be needed in 2014. Planning and permitting will continue for the barriers' possible installation in 2015 if drought conditions persist into a fourth consecutive dry year.

The fifth and final snow survey of the season on May 1 recorded manual and electronic readings of the statewide snowpack's water content -- which normally provides about a third of the water for California's farms and cities -- at a mere 18 percent of average for the date. By late May, the Sierra snowpack's water equivalent statewide had decreased to almost zero.

When Governor Brown declared a drought State of Emergency in January, he directed state officials to take all necessary actions to prepare for water shortages. CAL FIRE recently announced it hired 125 additional firefighters to help address the increased fire threat due to drought conditions, the California Department of Public Health identified and offered assistance to communities at risk of severe drinking water shortages and the California Department of Fish and Wildlife restricted fishing on some waterways due to low water flows worsened by the drought. Also in January, the California Natural Resources Agency, the California Environmental Protection Agency and the California Department of Food and Agriculture also released the California Water Action Plan, which will guide state efforts to enhance water supply reliability, restore damaged and destroyed ecosystems and improve the resilience of our infrastructure.

Governor Brown has called on all Californians to voluntarily reduce their water usage by 20 percent and the Save Our Water campaign has announced four new public service announcements that encourage residents to conserve. Last December, the Governor formed a Drought Task Force to review expected water allocations and California's preparedness for water scarcity. In May 2013, Governor Brown issued an Executive Order to direct state water officials to expedite the review and processing of voluntary transfers of water.

For more information on drought, see <http://www.water.ca.gov/waterconditions/droughtinfo.cfm>.

#### Resources

- [Drought Home](#)
- [Governor's Drought Declaration](#)
- [Water Conditions](#)
- [Drought Background](#)
- [Emergency Drought Barriers](#)
- [Publications](#)
- [Groundwater Info Center](#)

#### Featured Information

- [California Drought – U.S. Geological Survey - \*New\*](#)
- [Drought Response – Groundwater, April 2014](#)
- [2014 Drought Operations Plan](#)
- [Daily Hydrologic Overview - \*interactive\*](#)
- [Klamath/San Joaquin/Sacramento Hydroclimatic Reconstructions from Tree Rings](#)
- [Treeing Report Appendix.zip \(data files\)](#)
- [ACWA Launches Interactive Map Showing Local Response Actions](#)
- [Cal OES Drought Page](#)
- [Governor's letter, Interagency Drought Task Force](#)
- [DWR-CSUF Agricultural Drought Preparedness Workshop](#)
- [Experimental Seasonal Forecast](#)
- [Experimental Seasonal Forecast Presentation](#)
- [California Data Exchange Center](#)
- [Climate Summary Map – temperature](#)
- [Climate Summary Map – precipitation](#)
- [Spatial CIMIS](#)
- [Selected cities' precipitation](#)

#### Media Contacts:

Ted Thomas  
**Chief, Media & Public Information**  
 Work: (916) 653-9712  
 Cell: (916) 798-1701

#### Drought Media Outreach Materials

**WRCC climate region dry years, ranked by inches of precipitation:**

*Click for a more detailed view.*

Statewide		① North Coast		② North Central		③ Northeast		④ Sacramento-Delta		⑤ Sierra	
Year	Rainfall	Year	Rainfall	Year	Rainfall	Year	Rainfall	Year	Rainfall	Year	Rainfall
2013	7.0	2013	22.7	2013	14.2	2013	7.9	2013	5.1	2013	10.4
1898	11.6	1976	32.3	1976	22.4	1924	10.6	1923	7.7	1976	17.0
1923	11.7	1923	36.5	1898	22.7	1923	11.5	1917	8.1	1898	21.6
1976	13.1	1985	37.6	1923	25.1	1976	12.0	1976	8.1	1947	21.8
1917	13.3	1929	38.9	1910	27.3	1908	12.5	1898	8.6	1908	22.1

⑥ San Joaquin Valley		⑦ Central Coast		⑧ South Coast		⑨ South Interior		⑩ Mojave		⑪ Sonoran	
Year	Rainfall	Year	Rainfall	Year	Rainfall	Year	Rainfall	Year	Rainfall	Year	Rainfall
2013	2.9	2013	4.9	2013	5.3	1947	7.2	2013	2.7	... 66 entries to .09	
1947	4.5	1923	10.9	1947	5.5	1953	7.2	1953	2.8	1949,	4.3
1917	5.2	1917	11.0	1989	5.6	1989	7.3	1929	2.9	'55, '57	
1898	5.5	1929	11.3	1898	6.0	2007	7.3	1989	2.9	2003	4.3
1929	5.7	1898	11.3	1953	6.1	1999	8.1	1947	3.1	1958	4.4
						1961	8.1			2013	4.4
						2013	8.2				

*Note: records date back to 1895.  
Source: Western Regional Climate Center*

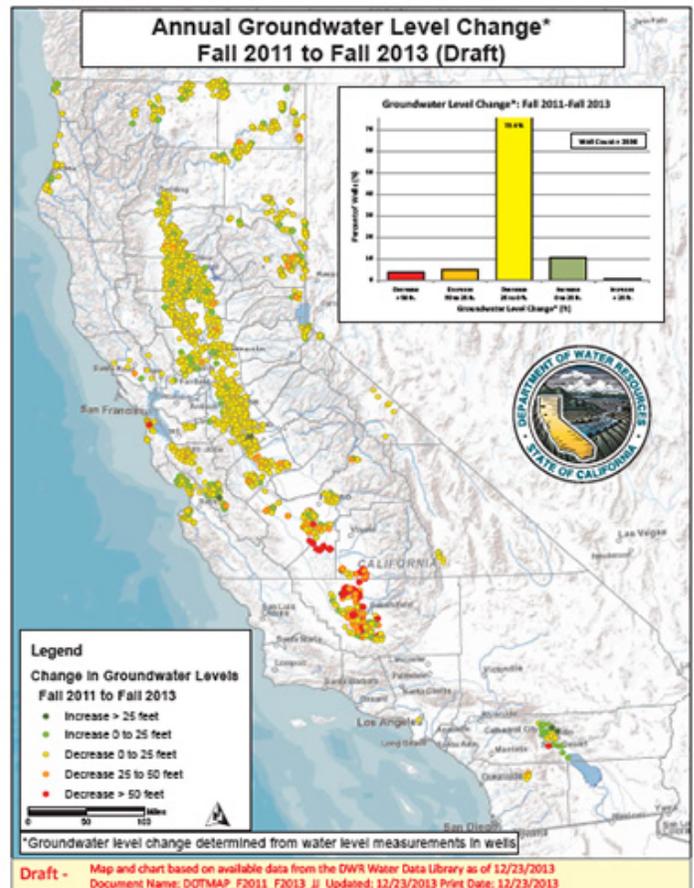
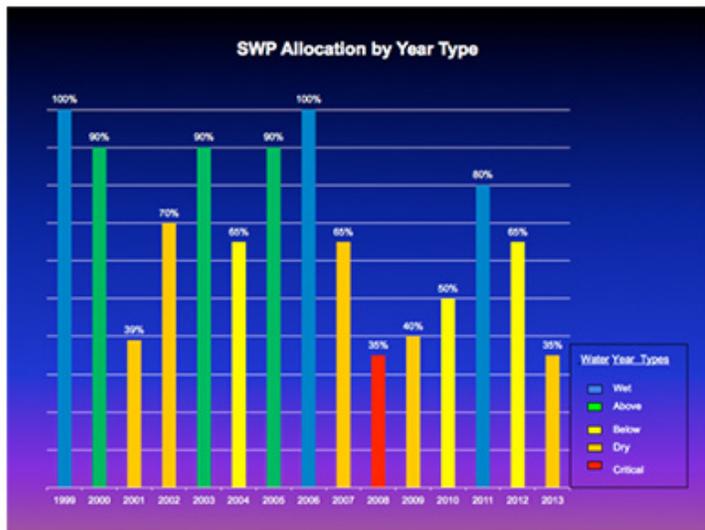
<b>CURRENT WATER CONDITIONS</b>
PRECIPITATION
SNOWPACK
RESERVOIRS
GROUNDWATER & MODELED SOIL MOISTURE



### Drought Information

Water years 2012 and 2013 were dry statewide, especially in parts of the San Joaquin Valley and Southern California. Water year 2014, which began on October 1st, continues this trend. Precipitation in some areas of the state is tracking at about the driest year of record. Statewide reservoir storage going into our wet season was about 75 percent of average for this time of year, and impacts of two dry years on statewide groundwater levels are also evident. On average, about half of California's statewide precipitation occurs in December, January, and February, with only a handful of large winter storms accounting for the difference between a wet year and a dry one. DWR's late November experimental seasonal forecast for the water year sees mostly dry conditions for the state. It is still too early, however, to call this water year, and Mother Nature may surprise us. About half of the years with similarly dry first quarters in the historical record of northern Sierra precipitation, for example, caught up to average by the end of the season. However, a normal precipitation year would not be enough to overcome low soil moisture and water storage conditions; many water users would need a wet year to be made whole.

For background on droughts in California and answers to frequently asked questions, see the column below.



# Urban Water Management Plan 2010



## CHAPTER 6 - WATER CONSERVATION

---

INTRODUCTION	6-1
WATER CONSERVATION MASTER PLAN	6-3
ESTIMATED WATER SAVINGS AND PROGRAM BUDGET	6-4
SBX7-7 WATER USE BASELINE AND TARGETS	6-6
DEMAND-SIDE CONSERVATION	6-8
SUPPLY-SIDE CONSERVATION	6-20
BEST MANAGEMENT PRACTICES	6-22
CONSERVATION IN THE FUTURE	6-23

## APPENDICES

---

APPENDIX A. URBAN WATER MANAGEMENT PLANNING ACT

---

APPENDIX B. PUBLIC NOTICE

---

APPENDIX C. COMMENTS AND RESPONSES

---

APPENDIX D. BOARD RESOLUTIONS

---

APPENDIX E. SOUTH EAST BAY PLAIN GROUNDWATER BASIN OVERVIEW

---

APPENDIX F. EBMUD POLICIES AND RATES

---

APPENDIX G. 2010 WATER SHORTAGE CONTINGENCY PLAN SUPPLEMENT

---

APPENDIX H. SBX7-7 20X2020 BASELINE AND TARGET METHODOLOGY

---

APPENDIX I. 2009-2010 CUWCC MOU ACTIVITY REPORTS AND EBMUD CONSERVATION RESEARCH PROJECTS

---

APPENDIX J. GLOSSARY

---

# TABLE OF CONTENTS

---

## CHAPTER 1 - GENERAL INFORMATION

---

URBAN WATER MANAGEMENT PLANNING ACT	1-1
EBMUD'S URBAN WATER MANAGEMENT PLAN	1-1
EAST BAY MUNICIPAL UTILITY DISTRICT	1-2
REPORT FORMAT	1-6

## CHAPTER 2 - WATER SUPPLY SYSTEM AND WATER RESOURCES PLANNING

---

WATER SUPPLY SYSTEM	2-1
VULNERABILITIES IN WATER SUPPLY AND SYSTEM RELIABILITY	2-6
IMPROVING WATER SUPPLY AND SYSTEM RELIABILITY	2-10

## CHAPTER 3 - 2010 WATER SHORTAGE CONTINGENCY PLAN

---

INTRODUCTION	3-1
DROUGHT PLANNING SEQUENCE	3-2
WATER SUPPLY SHORTAGE DECLARATION	3-2
WATER SUPPLY SHORTAGE RESPONSE	3-3
WATER SUPPLY SHORTAGE MITIGATION	3-6
DEMAND REDUCTION METHODS	3-8
CONSUMPTION REDUCTION MONITORING	3-11
FINANCIAL IMPACT ANALYSIS	3-12
RATE CHANGE NOTIFICATION	3-13

## CHAPTER 4 - WATER DEMAND

---

PAST AND CURRENT DEMAND	4-1
PROJECTED WATER DEMAND	4-2
SUPPLY-DEMAND ASSESSMENT	4-7

## CHAPTER 5 - WASTEWATER AND RECYCLED WATER

---

WASTEWATER SYSTEM	5-1
RECYCLED WATER PROGRAM	5-3
EXISTING RECYCLED WATER PROJECTS	5-4
FUTURE RECYCLED WATER PROJECTS	5-10
NON-POTABLE/RAW WATER PROJECTS	5-14
ENCOURAGING RECYCLED WATER USE	5-15
RECYCLED WATER OPTIMIZATION PLAN	5-16

comment period was also mailed to all parties included in EBMUD’s UWMP 2010 mailing list on May 6, 2011, and was posted on EBMUD’s website. In addition to the public hearing EBMUD held a public comment meeting on the Draft UWMP 2010 on April 21, 2011 to further encourage public involvement.

The UWMP 2010 was modified, where appropriate, to incorporate comments received from the public, interested organizations, and other agencies. Appendix C contains a summary of the comments received and EBMUD’s responses to those comments.

At its meeting on June 28, 2011, the EBMUD Board of Directors adopted the UWMP 2010 and the 2010 Water Shortage Contingency Plan. A copy of the adoption resolution is included in Appendix D. By July 27, copies of the adopted UWMP 2010 were sent to the California Department of Water Resources (DWR), the California State Library, and cities and counties within EBMUD’s service area and posted on EBMUD’s website.

## EAST BAY MUNICIPAL UTILITY DISTRICT

### FORMATION

East Bay Municipal Utility District, a public utility, was formed under the Municipal Utility District (MUD) Act, passed by the California Legislature in 1921. The MUD Act

permits formation of multi-purpose government agencies to provide public services on a regional basis. In accordance with the MUD Act’s provisions, voters in the San Francisco East Bay Area created EBMUD in 1923 to provide water service. In 1929, EBMUD first began water deliveries from the Sierra Nevada Mountains to the East Bay when construction of Pardee Dam and the first Mokelumne Aqueducts was completed.

The MUD Act was amended in 1941 to enable formation of special districts. In 1944, voters in six East Bay cities elected to form EBMUD’s Special District No. 1 to treat wastewater from their jurisdictions prior to it being released into the San Francisco Bay. Wastewater treatment for those cities began in 1951 and later expanded to annex the Stege Sanitary District, which includes Kensington, El Cerrito, and parts of Richmond.

### BOARD OF DIRECTORS

EBMUD is governed by a seven-member Board of Directors, publicly elected to four-year terms from wards within EBMUD’s service area. The Board determines overall policies, which are implemented under the direction of the General Manager. Activities of EBMUD are guided by the following Mission Statement:

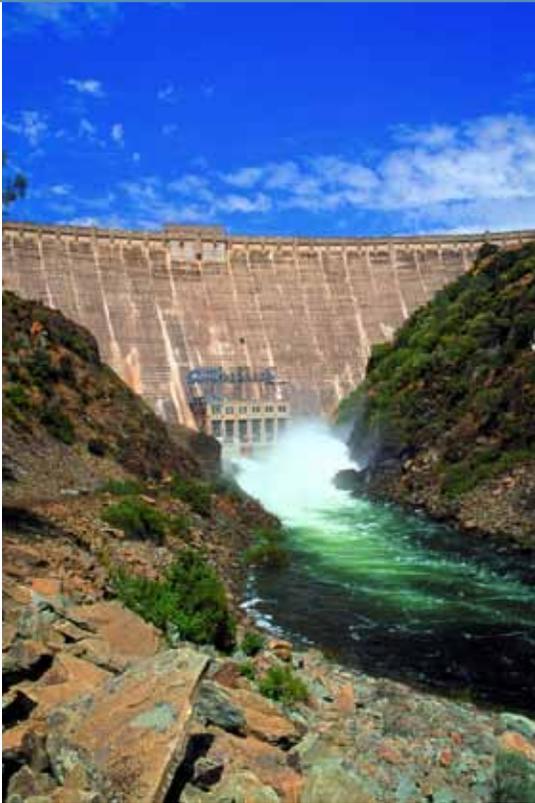
*To manage the natural resources with which the District is entrusted; to provide reliable, high quality water and wastewater services at fair and reasonable rates for the people of the East Bay; and to preserve and protect the environment for future generations.*

### SERVICE AREA

EBMUD supplies water and provides wastewater treatment for significant parts of Alameda and Contra Costa counties. Based on 2010 census data, approximately 1.34 million people are served by EBMUD’s water system in a 332-square-mile area extending from Crockett on the north, southward to San Lorenzo (encompassing the major cities of Oakland and Berkeley), eastward from San Francisco Bay to Walnut Creek, and south through the San Ramon Valley. The wastewater system serves approximately 650,000 people in an 88-square-mile area of Alameda and Contra Costa counties along the Bay’s east shore, extending from Richmond on the north, southward to San Leandro. EBMUD customers include residential, industrial, commercial, institutional and irrigation water users.

TABLE 1-1 URBAN WATER MANAGEMENT PLANNING ACT AND AMENDMENTS

BILL	INTRODUCED BY	CHAPTERED
AB 2661	KLEHS	1990
AB 11X	FILANTE	1991
AB 1869	SPEIER	1991
AB 892	FRAZEE	1993
SB 1017	MCCORQUODALE	1994
AB 2853	CORTESE	1994
AB 1845	CORTESE	1995
SB 1011	POLANCO	1995
AB 2552	BATES	2000
SB 553	KELLEY	2000
SB 610	COSTA	2001
AB 901	DAUCHER	2001
SB 672	MACHADO	2001
SB 1348	BRULTE	2002
SB 1384	COSTA	2002
SB 1518	TORLAKSON	2002
AB 105	WIGGINS	2004
SB 318	ALPERT	2004
<b>SB 1087</b>	<b>FLOREZ</b>	<b>2005</b>
<b>AB 1420</b>	<b>LAIRD</b>	<b>2007</b>
<b>SBX7-7</b>	<b>STEINBERG</b>	<b>2009</b>
<b>AB 2409</b>	<b>NESTANDE</b>	<b>2010</b>



# Water Conservation Master Plan

2011

# TABLE OF CONTENTS

Executive Summary .....	ES-1
1. Introduction.....	1-1
1.1 Purpose of the Master Plan.....	1-1
1.2 Plan Overview .....	1-1
1.2.1 Scope and Organization.....	1-1
1.2.2 Background .....	1-2
1.2.2.1 Urban Water Management Plan.....	1-2
1.2.2.2 1994 Water Conservation Master Plan.....	1-2
1.2.2.3 EBMUD Water Use Data.....	1-3
1.2.2.4 Statewide Water Use Planning .....	1-9
2. Program Evaluation and Implementation .....	2-1
2.1 Long-Term Conservation Analysis .....	2-1
2.1.1 Baseline Demands with and without Plumbing Code.....	2-1
2.1.2 Comparison of Individual Conservation Measures .....	2-2
2.1.3 Measure Water Savings and Costs.....	2-3
2.2 Conservation Implementation Strategies .....	2-6
2.2.1 Demand-Side Conservation Services .....	2-6
2.2.1.1 Water Management Services.....	2-7
2.2.1.2 Conservation Incentives .....	2-11
2.2.1.3 Education and Outreach.....	2-14
2.2.1.4 Regulation and Legislation .....	2-21
2.2.2 Supply-Side Conservation .....	2-24
2.2.3 Research and Development .....	2-26
2.2.4 Adopted Water Conservation & Implementation Phasing.....	2-30
2.2.4.1 Adopted Program Summary .....	2-30
2.2.4.2 Implementation Phasing.....	2-31
Appendices	
A. Glossary, Acronyms, Definitions	
B. Water Conservation Measure Summaries	
C. Water Conservation Technical Analysis Modeling Results and Assumptions	
D. EBMUD Water Efficiency Regulations and Procedures	
E. Drought Response Planning	
F. Water Conservation Act of 2009 (Senate Bill x7-7) EBMUD Baseline and Target Methodology Analyses	
G. EBMUD 2009 and 2010 Annual Report of Best Management Practices to the CUWCC	

1.2.2.3 EBMUD WATER USE DATA

Historical and Projected Demand

EBMUD customer accounts are metered and consumption patterns are continually tracked for water conservation purposes. Tracking water use patterns, peaking factors and seasonal use provide valuable data for identifying conservation potential and savings. Figure 1-3 shows how total metered and seasonal water consumption is distributed among six key customer categories. Single-family residential constitutes the largest customer water use category, followed by multi-family residential, industrial and petroleum, commercial, irrigation, and institutional users. Seasonal winter and summer demand is illustrated in Figure 1-4.

EBMUD has conducted a series of end use demand studies to assist in mapping demand patterns by

household size and type of plumbing fixtures, appliances and landscape irrigation. These studies, along with detailed water use surveys, have helped benchmark customer demand by household and individual indoor uses. The 2008-2009 pre-drought average per capita water use (indoor and outdoor) for a single-family residential customer totals approximately 100 gallons per day or 280 gallons per day for an average household of 2.8 persons.

Market sector demand patterns are used in water conservation planning and evaluation to determine effectiveness of implemented measures and to prioritize them based on savings targets and future conservation potential. See Figure 1-5 for historical metered water use and customer account totals for single-family residential, multi-family residential, industrial and petroleum, commercial,

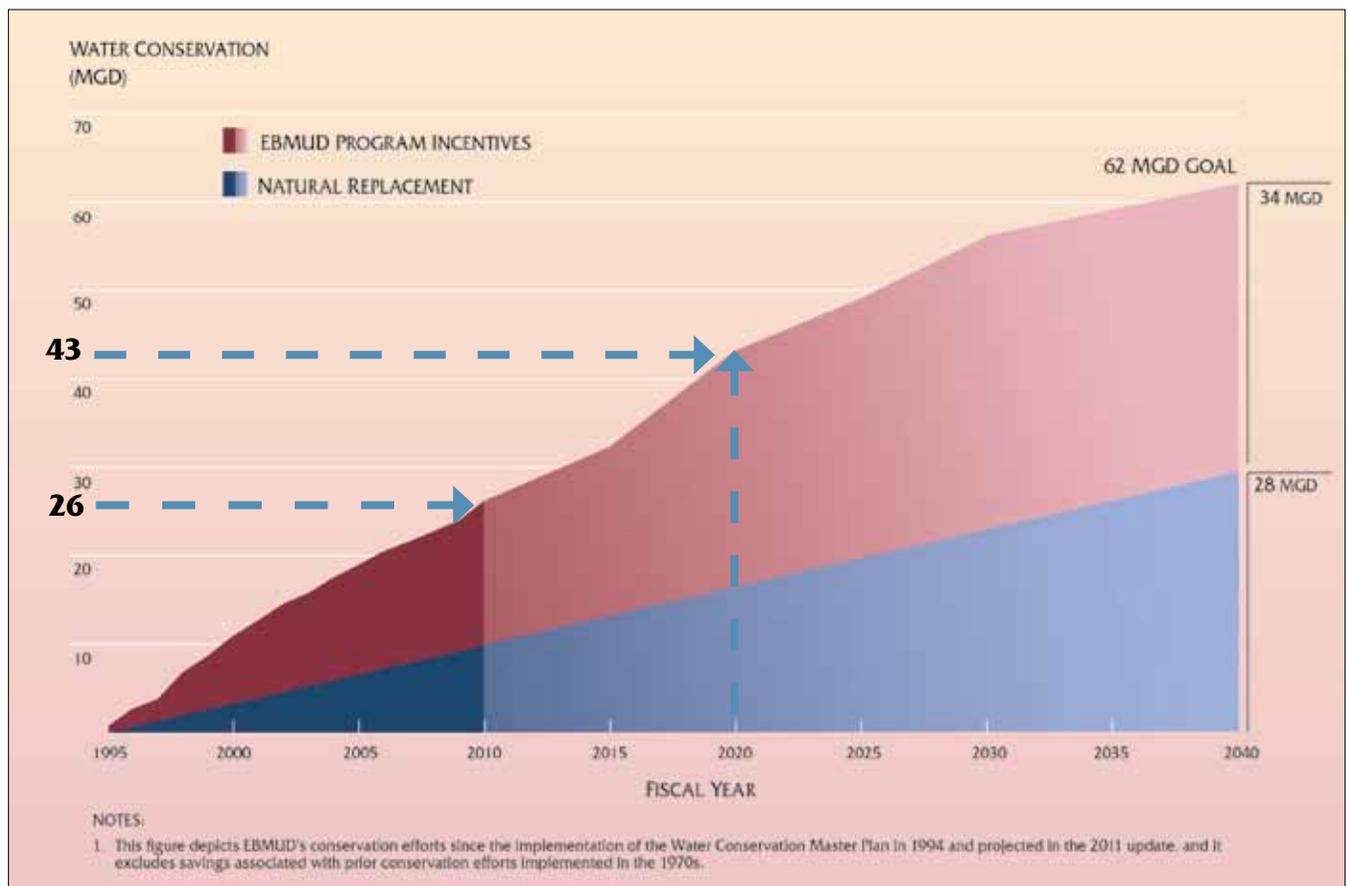


Figure 1-1 Water Conservation Savings and Goals (1995 – 2040)

Source: 2010 EBMUD Urban Water Management Plan



Search EBMUD

customers

recreation

water &amp; wastewater

business

about

cart

## Latest Water Supply Update

**In one of the driest years ever, EBMUD asks the East Bay to stretch its water supplies - and taps the Sacramento River for the first time.**

Reduced runoff from this year's storms means EBMUD reservoirs will not refill this year. Due to these excessively dry conditions in the Mokelumne River watershed where most of the East Bay's water originates, EBMUD asks all its customers to continue to cut back their water use by ten percent. In addition, it will draw on dry year supplies from the Sacramento River to fill local reservoirs this spring.

EBMUD monitors precipitation and reservoir levels **daily**. As of June 9, 2014, EBMUD had 451,190 acre feet of water stored in all its reservoirs combined. Our reservoirs are more than half full, or 71 percent of average. Precipitation since July in the Mokelumne basin was 25.85 inches, which is 54 percent of average.

As temperatures rise, water use will increase as it does every year. Voluntarily cutting back water use now will stretch supplies in anticipation of this summer's increased demand for water.

### What happens next?

In 1976-77, East Bay residents and the East Bay economy felt the pain of severe mandatory water rationing. To prevent such hardship from occurring again, EBMUD invested for more than three decades in improving the water supply and making conservation a way of life in the East Bay.

Today, the East Bay is better prepared than it has ever been to cope with a severe drought.

This year EBMUD purchased **supplies of water** from the Sacramento River that will flow into local EBMUD reservoirs in May and June. The costs of buying, treating and delivering this drought year water supply are more expensive than our Mokelumne River supplies. EBMUD will absorb the cost of delivering Sacramento River water this May and June and avoid implementing a surcharge on customer bills. However, if additional water is needed later this year, a 14 percent supplemental supply surcharge may be applied to flow charges - resulting in a temporary increase of \$6 for the average customer.

EBMUD's water system is able to handle short-term droughts with a combination of conservation and Sacramento River supplies. By saving water today, we are better able to handle next year's water needs - especially if the drought continues.

### How to cut ten percent

Since before the last drought started in 2007, customers have cut back 17 percent. To everyone who has made conservation a way of life, we thank you.

To stretch our supply even more this year, we ask you to cut ten percent of your current water use.

EBMUD is fortunate that employees and customers alike are conservation minded. We promise that if mandatory rationing becomes necessary in the future, customer allocations won't be based on use during this voluntary cutback period.

What you can do today is:

- **Slow your flow.** Use our WaterSmart Home **Survey Kit** to evaluate your home's water use and find leaks and inefficient fixtures.
- **Find and fix leaks.** Toilet and irrigation systems contain some of the biggest and **sneakiest leaks**.
- **Watch your watering.** When you turn on your irrigation system, look for signs of leaks, overspray and run-off. The temperatures may be warming, but nights are still cool this spring. Remember your plants need water only one day a week this time of year.



**NEARLY ALL OF EBMUD'S WATER SUPPLY ORIGINATES IN THE MOKELUMNE RIVER WATERSHED.**

### Popular Pages in Water Supply

[Daily Water Supply Report](#)

[Water System Map](#)

[Pipeline Repairs Reveal Water Legacy](#)

[Mokelumne/Amador/Calaveras Integrated Regional Water Management Plan](#)

[Urban Water Management Plan](#)

[Water Supply Management Program 2040](#)

### News



- [customers](#)
- [recreation](#)
- [water & wastewater](#)
- [business](#)
- [about](#)
- [cart](#)

## WaterSmart Center



In dry years like this, water conservation stretches the East Bay's supply of reliable, high-quality drinking water.

Many customers have made many of the recommended water use reductions at home and work. We thank you for using water wisely every day.

Others may be able to conserve even more. Check the list below for additional opportunities to save water.

Here's how:

### Popular Pages in Water and Wastewater

[Project Updates](#)

[Water Supply](#)

[Wastewater Collection and Treatment](#)

[Rates and Charges](#)

[Water Quality](#)

[Water Rates & Service Charges](#)

[News](#)

### Mulch Coupon Program - New for 2014!

Save water, control weeds, and nourish the soil with mulch, a gardener's best friend. EBMUD has teamed up with Contra Costa Water District to offer discount coupons at mulch retailers across the East Bay.

### Change Your Landscape

Convert your thirsty lawn to a sustainable landscape and upgrade your irrigation equipment to efficient drip systems and self-adjusting controllers. Rebates are available for up to \$2,500 for single- and multi-family residences of four units or less and up to \$20,000 for commercial and multi-family sites of five or more units.

### Find and Fix Leaks

Toilet tanks and broken sprinklers are common culprits of household leaks. A few minutes is all you need to check for leaks in the most common places. One in four homes has a toilet leak! View the video below to see how to fix a toilet leak.

Mike's tip: How to easily find and fix a toilet leak

### WaterSmart Home Survey Kit

Are you as water efficient as you can be? Slow the flow in your house with EBMUD's free kit. It includes worksheets, toilet tank dye tabs, a flow-meter bag and step-by-step instructions for you to better manage your home's water use.

### WaterSmart Tips

Whether you want a quick fix or are committed to long-term conservation projects, find tips here.





2171 E. Francisco Blvd., Suite K • San Rafael, California 94901  
Phone: (415) 457-0701 • FAX: (415) 457-1638 • Web site: www.stetsonengineers.com  
Northern California • Southern California • New Mexico • Arizona • Nevada • Colorado

May 16, 2014

**Re: San Gregorio Creek Water Availability – Notice to 2<sup>nd</sup> Priority Water Users to Reduce Diversions**

Dear Water User:

As you are aware, water flowing in the San Gregorio Creek Stream System continues to be significantly below normal due to limited rainfall received this past winter. **Our projections indicate that the available water supply has become insufficient to meet all 2<sup>nd</sup> priority water right allocations (irrigation, outside domestic and commercial stock watering uses).**

The 1993 Decree specifies priorities of rights wherein no water user is entitled to divert any water until the allotments to all higher priorities have been satisfied and further requires all water users with the same priority to share equitably in any supply shortage. We have notified or are completing the process of notifying all 4<sup>th</sup> and 3<sup>rd</sup> priority water users to cease diverting so that the 2<sup>nd</sup> priority allotments may be satisfied.

**This letter is written to respectfully request that you, as having a 2<sup>nd</sup> priority water right, stop diverting water for two days of each week (until further notice), beginning May 19, 2014, according to your Point of Diversion (POD) Number as set forth in the schedule below:**

<u>Point of Diversion Numbers</u>	<u>No Diversions During Day of Week*</u>
POD #1 through #35	Sundays and Tuesdays
POD #36 through #70	Mondays and Wednesdays
POD #71 through #105	Tuesdays and Thursdays
POD #106 through #140	Wednesdays and Fridays
POD #141 through #175	Thursdays and Saturdays
POD #176 through #210	Fridays and Sundays
POD #211 through #245	Saturdays and Mondays
POD#1000 through #1002	Saturdays and Mondays

*\* Note: Four of the largest irrigators in the lower portion of the watershed will be on a specific rotation schedule, different than above, which also includes two days each of no diversions.*

Your Point of Diversion Number(s) with 2<sup>nd</sup> Priority uses are shown on the attachment to this letter. Please use your Point of Diversion Number(s) from the attachment and the above schedule to determine which days of the week you should not divert any water.

**Beginning May 19, 2014 (and until further notice) you are also requested to not divert water at a rate that is greater than your Decreed allocation, taken continuously over a 24-hour period.** By way of example, if your total daily allocation is 5,000 gallons per day, then your maximum allowable diversion rate, beginning May 19, would be calculated as follows:

$$\frac{5,000}{24 \times 60} = 3.5 \text{ gallons per minute (EXAMPLE)}$$

In the upcoming weeks and months, subsequent notices for further reductions in diversions will be necessary. Please be advised that based on a comparison with historical droughts, lower San Gregorio Creek may go dry this summer. Please contact me if you have any questions or require additional information.

Sincerely,



Julian Fulwiler, P.E.  
Stetson Engineers Inc.  
Watermaster for San Gregorio Creek

cc: (representative letter)  
Honorable George A. Miram

# San Jose Mercury News (http://www.mercurynews.com)

HOT TOPICS:

## Mountain View council declares 'Stage 1' emergency

By Jason Green

Daily News Staff Writer

POSTED: 04/02/2014 12:27:17 AM PDT  
 UPDATED: 04/02/2014 12:46:47 AM PDT

Even as rain pelted the Bay Area, the Mountain View City Council unanimously called a water shortage emergency.

The "Stage 1" declaration authorizes city staff to ramp up efforts to educate the public about conservation programs and prohibited nonessential water uses, which include washing a vehicle with a running hose and serving water in a restaurant except upon request.

"This is something that we need to do," Councilman Mike Kasperzak said before the 7-0 vote. "And while it is raining now, we are still so far behind and we are at the tail end of the typical rainy season."

Indeed, the Sierra Nevada snowpack, a critical source of water for California, was 32 percent of average Tuesday, the lowest level on April 1 since 1988, when it was 33 percent of average.

The council's decision follows Gov. Jerry Brown's declaration of a drought state of emergency on Jan. 17. Urban water suppliers including the San Francisco Public Utilities Commission and the Santa Clara Valley Water District have since called on customers to reduce consumption by 10 and 20 percent, respectively.

Mountain View gets 87 percent of its drinking water from the San Francisco Public Utilities Commission, 9 percent from the Santa Clara Valley Water District and 4 percent from city wells.

The council also passed an ordinance that adds its Urban Water Management Plan to the municipal code. The plan outlines five stages, with the first reflecting a 10 percent shortage. If the drought worsens, the council could declare a "Stage 2" emergency, which would reflect a 25 percent shortage and prohibit the watering of yards between 9 a.m. and 5 p.m. The time to fix broken water systems would be reduced from 10 to five days, and at-home vehicle washes would be banned unless done by bucket.

A "Stage 3" emergency, which would involve a shortage of up to 40 percent, would shut down commercial car washes that do not use re-circulating systems and prohibit drinking water from being used to fill pools.

Called when a shortage exceeds 40 percent, a "Stage 4" emergency would provide just 24 hours to fix broken water systems and shut down public parks, playgrounds, fields and school grounds to once per week.

The city already has the authority to install flow-restriction devices on the water lines of customers who use water in prohibited ways and ultimately discontinue service. The ordinance would extend those measures to violations of provisions outlined in the plan. It would also add the associated costs to the city's master fee schedule and adjust them annually for inflation.

A handful of residents pushed the council not to adopt what they called a "draconian" ordinance.

"I think that doing something like that is unconscionable, because you don't know particularly what those circumstances are," Jim Neal said about the prospect of the city turning off someone's water.

Councilman Jac Siegel said written notices and a hearing would lead up to any such action.

"The objective is not to turn people's water off," he said. "It's to get their attention and hopefully they'll respond and work with them."

Bay Area News Group Staff Writer Paul Rogers contributed to this report.

Email Jason Green at [jgreen@dailynewsgroup.com](mailto:jgreen@dailynewsgroup.com) (<mailto:jgreen@dailynewsgroup.com>); follow him at [twitter](https://twitter.com/jgreendailynews) (<http://twitter.com/jgreendailynews>).

RELATED (HTTP://WWW.MERCURYNEWS.COM/)

Judge rules in favor of unsealing grand jury transcript in Sierra LaMar case (<http://www.mercurynews.com/2014/03/27/judge-rules-in-favor-of-unsealing-grand-jury-transcript-sierra>)

San Jose Sharks buy out Marty Havlat's contract ([http://www.mercurynews.com/sharks/ci\\_26049273/san-jose-sharks-buy-out-marty-havlats-contract](http://www.mercurynews.com/sharks/ci_26049273/san-jose-sharks-buy-out-marty-havlats-contract))

UP TO 2 YEARS NO INTEREST FINANCING!  
**NEW FOR 2014!**  
 VIDEO ONLY VIEW THIS WEEK'S AD  
 "Don't Be Sorry... Shop Video Only!"

### MOST POPULAR

(/POPULAR)

DAY (/POPULAR) HOUR (/POPULAR) NEWS (/POPULAR)

Urban water suppliers including the San Francisco Public Utilities Commission and the Santa Clara Valley Water District have since called on customers to reduce consumption by 10 and 20 percent, respectively.

EMAIL (/POPULAR) LIFE (/POPULAR)

Urban water suppliers including the San Francisco Public Utilities Commission and the Santa Clara Valley Water District have since called on customers to reduce consumption by 10 and 20 percent, respectively.

Mountain View gets 87 percent of its drinking water from the San Francisco Public Utilities Commission, 9 percent from the Santa Clara Valley Water District and 4 percent from city wells.

The council also passed an ordinance that adds its Urban Water Management Plan to the municipal code. The plan outlines five stages, with the first reflecting a 10 percent shortage. If the drought worsens, the council could declare a "Stage 2" emergency, which would reflect a 25 percent shortage and prohibit the watering of yards between 9 a.m. and 5 p.m. The time to fix broken water systems would be reduced from 10 to five days, and at-home vehicle washes would be banned unless done by bucket.

A "Stage 3" emergency, which would involve a shortage of up to 40 percent, would shut down commercial car washes that do not use re-circulating systems and prohibit drinking water from being used to fill pools.

Called when a shortage exceeds 40 percent, a "Stage 4" emergency would provide just 24 hours to fix broken water systems and shut down public parks, playgrounds, fields and school grounds to once per week.

The city already has the authority to install flow-restriction devices on the water lines of customers who use water in prohibited ways and ultimately discontinue service. The ordinance would extend those measures to violations of provisions outlined in the plan. It would also add the associated costs to the city's master fee schedule and adjust them annually for inflation.

A handful of residents pushed the council not to adopt what they called a "draconian" ordinance.

"I think that doing something like that is unconscionable, because you don't know particularly what those circumstances are," Jim Neal said about the prospect of the city turning off someone's water.

Councilman Jac Siegel said written notices and a hearing would lead up to any such action.

"The objective is not to turn people's water off," he said. "It's to get their attention and hopefully they'll respond and work with them."

Bay Area News Group Staff Writer Paul Rogers contributed to this report.

Email Jason Green at [jgreen@dailynewsgroup.com](mailto:jgreen@dailynewsgroup.com) (<mailto:jgreen@dailynewsgroup.com>); follow him at [twitter](https://twitter.com/jgreendailynews) (<http://twitter.com/jgreendailynews>).

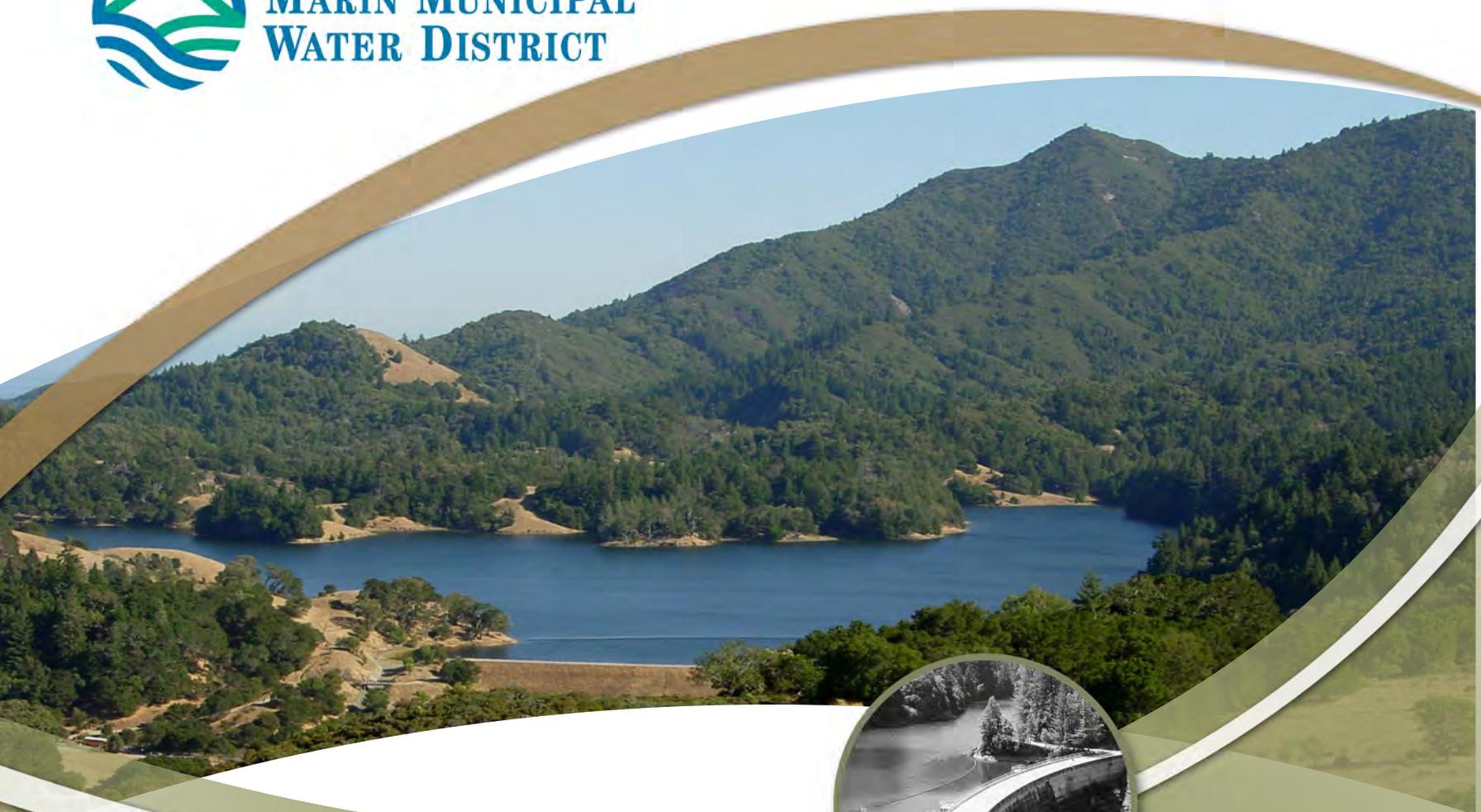
RELATED (HTTP://WWW.MERCURYNEWS.COM/)

Judge rules in favor of unsealing grand jury transcript in Sierra LaMar case (<http://www.mercurynews.com/2014/03/27/judge-rules-in-favor-of-unsealing-grand-jury-transcript-sierra>)

San Jose Sharks buy out Marty Havlat's contract ([http://www.mercurynews.com/sharks/ci\\_26049273/san-jose-sharks-buy-out-marty-havlats-contract](http://www.mercurynews.com/sharks/ci_26049273/san-jose-sharks-buy-out-marty-havlats-contract))



0.COM



**2010 Urban Water Management Plan**  
**Marin Municipal Water District**  
June, 2011



## Table of Contents

<b>1.0 Plan Preparation .....</b>	<b>1-1</b>
1.1 Resource Optimization .....	1-1
1.2 Coordination .....	1-2
1.2.1 City and County Notification .....	1-3
1.2.2 Public Participation .....	1-3
1.3 Plan Adoption, Submittal, and Implementation .....	1-3
<b>2.0 System Description .....</b>	<b>2-1</b>
2.1 Description of District and Service Area .....	2-1
2.1 Climate .....	2-4
2.2 Service Area Population .....	2-4
2.3 Past Drought and Emergency Conservation Information .....	2-6
<b>3.0 System Demands .....</b>	<b>3-1</b>
3.1 Baselines and Targets .....	3-1
3.1.1 Base Period Ranges .....	3-1
3.1.2 Base Daily Per Capita Water Use .....	3-2
3.1.3 Water Use Targets .....	3-3
3.2 Water Demands .....	3-4
3.2.1 Actual Water Deliveries .....	3-4
3.2.2 Projected Water Deliveries .....	3-6
3.2.3 Sales to Other Water Agencies .....	3-8
3.2.4 Additional Water Uses and Losses .....	3-8
3.2.5 Total Water Use .....	3-9
3.2.6 Lower-Income Projected Water Demands .....	3-9
3.3 Imported Water Demand Projections .....	3-10
3.4 Water Use Reduction Plan .....	3-10
3.5 Regional Alliance .....	3-14
<b>4.0 System Supplies .....</b>	<b>4-1</b>
4.1 Water Sources .....	4-1
4.2 Local Surface Water Supplies .....	4-1
4.3 Imported Water Supplies .....	4-4
4.4 Groundwater .....	4-5
4.5 Transfer Opportunities .....	4-6
4.6 Desalinated Water Opportunities .....	4-7
4.7 Recycled Water Opportunities .....	4-9
4.7.1 Pioneering New Uses for Recycled Water .....	4-9
4.7.2 Legislative Accomplishments and Awards .....	4-11
4.7.3 Ongoing District Water Recycling Activities .....	4-12
4.7.4 Description of Wastewater Agencies and Quantities .....	4-14
4.7.5 Recycled Water Expansion .....	4-19
4.7.6 Recycled Water Projections .....	4-22
4.7.7 2010 Recycled Water Use .....	4-23
4.7.8 Methods to Encourage Recycled Water Use .....	4-23
4.7.9 Recycled Water Planning .....	4-24
4.8 Future Water Supply Projects .....	4-25
<b>5.0 Water Supply Reliability and Water Shortage Contingency Planning .....</b>	<b>5-1</b>
5.1 Water Supply Reliability .....	5-1
5.2 Surface Water Operational Yield .....	5-2
5.3 Catastrophic Supply Interruption Plan .....	5-2



5.4 Water Conservation and Dry Year Water Use Reduction Program .....	5-3
5.4.1 Mandatory Rationing Allocation Plan .....	5-3
5.4.2 Water Waste Prohibitions.....	5-4
5.4.3 Penalties.....	5-4
5.4.4 Variances to Dry Period Regulations .....	5-5
5.4.5 Water Banking.....	5-6
5.4.6 Support Programs .....	5-6
5.4.7 Water Shortage Effects on Revenues and Expenditures.....	5-6
5.5 Water Quality .....	5-7
5.6 Drought Planning .....	5-8
5.6.1 Historic Conditions - Water Supply in Normal and Dry Years.....	5-9
5.6.2 Minimum Water Supply over the Next Three Years.....	5-9
5.6.3 Determination of Actual Water Reductions .....	5-10
5.6.4 Comparison of Supply and Demand .....	5-10
<b>6.0 Demand Management Measures .....</b>	<b>6-1</b>
<b>7.0 Climate Change.....</b>	<b>7-1</b>
7.1 Climate Variability .....	7-1
7.2 Climate Change .....	7-2
7.3 Climate Change Impact on Water Resources .....	7-3
<b>8.0 Completed UWMP Checklist .....</b>	<b>8-1</b>

## Figures

Figure 2-1. Service Area .....	2-2
Figure 2-2. Distribution System.....	2-3
Figure 3-1. Distribution of Water Use among Water Use Sectors .....	3-5
Figure 4-1. Annual Reservoir Inflow.....	4-2
Figure 4-2. Surface Water Reservoirs .....	4-3
Figure 4-3. Recycled Water System .....	4-10
Figure 4-4. Recycled Water System Growth.....	4-13
Figure 4-5. Average Recycled Water Use by Month .....	4-14
Figure 4-6. Peacock Gap Recycled Water Expansion Map.....	4-21
Figure 5-1. Combined Water Supply Reservoir Storage - Multiple Dry Year Period (1975 - 1978) .....	5-9

## Tables

Table 1-1 Coordination with Appropriate Agencies .....	1-2
Table 2-1 Summary of Potable Water Facilities.....	2-4
Table 2-2 Summary of Recycled Water Facilities .....	2-4
Table 2-3 Population and Consumption Trends within the District's Service Area.....	2-5
Table 2-4 Population — Current and Projected .....	2-5
Table 3-1 Base Period Ranges.....	3-2
Table 3-2 Base Daily Per Capita Water Use — 10-Year Range .....	3-2
Table 3-3 Base Daily Per Capita Water Use — 5-Year Range .....	3-3
Table 3-4 Baseline and Water Use Targets .....	3-4
Table 3-5 Water Deliveries — Actual, 2005.....	3-4
Table 3-6 Water Deliveries — Actual, 2010.....	3-5
Table 3-7 Water Deliveries — Projected, 2015.....	3-7
Table 3-8 Water Deliveries — Projected, 2020.....	3-7

and sanitation needs are met. Therefore, discretionary water uses, such as using potable water for irrigation, are expected to be reduced to a greater extent.

<b>Table 5-2 Water Shortage Contingency — Water Supply Conditions and Rationing Levels</b>		
Stage	Water Supply Conditions	% Reduction
Alert Stage (Voluntary Rationing)	Total reservoir storage is less than 50,000 ac-ft on April 1	10%
Mandatory Rationing	Total reservoir storage is less than 40,000 ac-ft on April 1	25%
Water Shortage Emergency	Total reservoir storage on December 1 is projected to be in the vicinity of, or less than 30,000 ac-ft	up to 50%

<b>Table 5-3 Allocation Plan — Proposed Cutbacks at Different Rationing Levels</b>					
Billing Codes	20% Rationing	25% Rationing	30% Rationing	40% Rationing	50% Rationing
Billing Code 1-5 (Residential)	25%	32%	32%	46%	55%
Billing Code 6 (Institutional)	20%	25%	30%	40%	50%
Billing Code 7 (Business)	15%	20%	25%	35%	45%
Billing Code 8 (Irrigation)	45%	50%	60%	75%	90%

#### 5.4.2 Water Waste Prohibitions

The District has implemented on-going prohibitions to reduce water waste. There are additional prohibitions that are put into action during dry periods. Table 5-4 provides a summary of on-going and dry period prohibitions.

#### 5.4.3 Penalties

Any customer violating the regulations and restrictions on water use set forth above shall receive a written warning for the first such violation. Upon a second violation, the customer shall receive a written warning and the District may cause a flow restrictor to be installed in the service. If a flow restrictor is placed, the cost of installation and removal shall be paid by the violator. Any willful violation occurring subsequent to the issuance of the second written warning shall constitute a misdemeanor and may be referred to the Marin County district attorney's office for prosecution. The District may also disconnect the water service. If water service is disconnected, it shall be restored only upon payment of the turn-on charge fixed by the District Board of Directors.

Appropriate rate penalties will be developed and presented to the Board at the time of rationing program implementation. In addition to financial penalties, these may include installation of flow restrictors and shut-off of service.

Title 13

WATER SERVICE CONDITIONS AND WATER CONSERVATION MEASURES

Chapters:

- 13.01 Eliminated (Ord. 346, 1993)
- 13.02 Water Conservation and Dry Year Water Use Reduction Program
- 13.03 Water Budgets and Related Conservation Measures

Chapter 13.02

WATER CONSERVATION AND DRY YEAR WATER USE REDUCTION PROGRAM\*

Sections:

- 13.02.010 Declaration of purpose.
- 13.02.015 Declaration of Water Shortage Emergency.
- 13.02.020 Water waste prohibitions.
- 13.02.021 Water Conservation: Normal Year Water Conservation
- 13.02.030 Water use reduction in dry periods.
- 13.02.040 Calculation of allowable water use.
- 13.02.050 Variances.
- 13.02.060 Enforcement.
- 13.02.065 Unauthorized water use.
- 13.02.070 Further prohibitions.
- 13.02.080 Penalty for violations.
- 13.02.090 Appeals.
- 13.02.100 Remedies/cumulative.
- 13.02.110 Chapter controlling.

13.02.010 Declaration of purpose. The purpose of this chapter is to provide a water conservation plan to minimize the effect of a shortage of water on the district's consumers and to adopt provisions that will significantly reduce the consumption of water during an extended dry weather period (drought), thereby extending the available water for the district's consumers while reducing the hardship on the general public to the greatest extent possible, voluntary conservation efforts having proved insufficient to achieve these ends. The programs developed in this chapter are triggered based on lake storages developed by computer simulations performed utilizing the district's seven reservoirs with approximately eighty thousand acre-feet of total capacity and up to nine thousand acre-feet per year of imported water. (Ord. 387 §1, 1999; Ord. 316 §2 (part), 1991).

---

\* Prior ordinance history: Ords. 279, 286, 290 and 314.

13.02.015 Declaration of Water Shortage Emergency. When the district's lake storage on December 1 is projected to be in the vicinity of, or less than, thirty thousand acre-feet, the board may declare by resolution a Water Shortage Emergency as defined in the Water Code and then advise the State Water Resources Control Board of the need to conserve local storage. (Ord. 387 §1, 1999)

13.02.020 Water waste prohibitions. No customer of the district shall make, cause, use or permit the use of potable water from the district for residential, commercial, industrial, agricultural, governmental or any other purpose in a manner contrary to any provision of this section.

(1) Prohibited Nonessential Uses Applicable to All Consumers. It is unlawful for any person, firm, partnership, association, corporation, or political entity to use water from the district for the following nonessential uses:

(A) The washing of sidewalks, walkways, driveways, parking lots and all other hard-surfaced areas by direct hosing, except as may be permitted by current regulations pertaining to urban water runoff pollution prevention as defined by the Marin County Stormwater Pollution Prevention Program and other controlling agencies;

(B) The escape of water through breaks or leaks within the consumer's plumbing or private distribution system for any substantial period of time within which such break or leak should reasonably have been discovered and corrected. It shall be presumed that a period of forty-eight hours after the consumer discovers such a leak or break, or receives notice from the district of such leak or break, whichever occurs first, is a reasonable time within which to correct such leak or break;

(C) Non-recycling decorative water fountains.

(D) Restrictions on Irrigation. Irrigation shall not be conducted in a manner or to an extent that allows water to run off or overspray the areas being watered. Every consumer is required to have his/her water distribution lines and facilities under control at all times to avoid water waste.

(E) Any excess water runoff flowing onto the public right of way at a rate of 1 gallon per minute or greater not caused by storm water or naturally occurring groundwater, is prohibited.

(2) Restrictions on Reverse-Osmosis Units. The installation of reverse-osmosis water purifying systems not equipped with an automatic shutoff unit is prohibited.

(3) The following are prohibited for new connections:

(A) Single-pass cooling systems for air conditioning or other cooling system applications unless required for health or safety reasons;

(B) Non-recirculating systems for conveyer carwash applications. (Ord. 421 §2, 2011; Ord. 387 §1, 1999; Ord. 332 §1, 1992; Ord. 316 §2 (part), 1991).

13.02.021 Water Conservation: Normal Year Water Conservation.

(1) Declaration of Purpose. The purpose of this chapter is to provide a water conservation plan to maximize the water supply during periods of relatively normal rainfall and to minimize the effect of a shortage of water on the district's consumers during an extended dry weather period (drought). The normal year conservation programs in this chapter are based on industry standards promulgated by the American Rainwater Catchment Systems Association (ARCSA), Bay-Friendly Landscape and Gardening Practices (Bay-Friendly), Best Management Practices developed by the California Urban Water Conservation Council (CUWCC), California Department of Water

- MMM.** Submeter: a separate meter that is located on the private side of the water system and is plumbed to measure all water that flows only through the irrigation system. This meter is to be used by the owner to monitor irrigation water use and will not be read or maintained by the District.
- NNN.** Swing Joint: an irrigation component that provides a flexible, leak-free connection between the emission device and lateral pipeline to allow movement in any direction and to prevent equipment damage.
- OOO.** Turf: A mat layer of monocotyledonous plants with shallow rooting structures requiring frequent watering during the growing season; i.e., cool or warm season grass consisting, but not limited to Blue, Rye, Fescue, Bent, Bermuda, Kikuyu, St. Augustine, Zoysia, and Buffalo.
- PPP.** Valve: a device used to control the flow of water in the irrigation system.
- QQQ.** Valve Manifold: a one-piece manifold for use in a sprinkler valve assembly that includes an intake pipe having a water inlet and a plurality of ports adapted for fluid connection to inlets.
- RRR.** Water Budget: an allocation of water based on plant water needs, used to determine the billing tiers for customers with dedicated landscape irrigation meters, for example.
- SSS.** Water Feature: a design element where open water performs an aesthetic or recreational function. Water features include ponds, lakes, waterfalls, fountains, artificial streams, spas and swimming pools (where water is artificially supplied). The surface area of water features is included in the high water use hydrozone of the landscape area.
- TTT.** Weather Based or Sensor Based Irrigation Control Technology: uses local weather and landscape conditions to tailor irrigation schedules to actual conditions on the site or uses historical weather data.
- UUU.** WUCOLS: the Water Use Classification of Landscape Species published by the University of California Cooperative Extension, the Department of Water Resources and the Bureau of Reclamation, 2000.

(Ord. 421 §3(part), 2011: Ord. 403 §4, 2004: Ord. 394 §1, 2001: Ord. 385 §1(part), 1999): Ord. 326 §1(part), 1991).

(3) Requirements for All Services.

- A.** Pressure Regulation. A pressure-regulating valve shall be installed and maintained by the consumer if static service pressure exceeds 80 pounds per square inch (psi), and be set at a maximum operating pressure of 60 psi at the regulator outlet. The pressure-regulating valve shall be located between the meter

and the first point of water use, or first point of division in the pipe, and pressure-relief valves and other plumbing safety devices shall be installed as required by local codes. The operating pressure requirement may be waived if the consumer presents evidence satisfactory to the District that high pressure is necessary in the design and that no water will be wasted as a result of higher pressure operation.

- B. Interior Plumbing Fixtures.** All plumbing installed, replaced or moved in any new or existing service shall be high-efficiency fixtures and shall meet the following minimum requirements:
1. **High-efficiency Clothes Washers:** Residential or commercial clothes washers that meet the current highest water efficiency standards as defined by the District. The General Manager shall have authority to grant a variance from the requirements of this section based upon financial hardship.
  2. **High-efficiency Lavatory Faucet:** The maximum flow rate shall not exceed 1.5 gallons per minute (gpm) at a pressure of 60 pounds per square inch (psi) at the inlet, when water is flowing.
  3. **High-efficiency Shower Head:** The manufacturer shall specify a maximum flow rate equal to or less than 2.0 gallons per minute (gpm), at a pressure of 60 pounds per square inch (psi) at the inlet, when water is flowing.
  4. **High-efficiency Toilet:** Any WaterSense listed toilet rated at an effective flush volume of no greater than 1.28 gallons.
  5. **High-efficiency Urinal:** The average water consumption shall not exceed 0.25 gallons per flush (gpf).
- C. Pool Covers.** Pool covers are required for all new outdoor swimming pools. (Ord. 421 §3(part), 2011; Ord. 385 §1(part), 1999); Ord. 326 §1(part), 1991).
- (4) **Non-Residential Interior Plumbing Fixtures.** All plumbing installed, moved or replaced in any new or existing service shall be high-efficiency fixtures and shall meet the following minimum requirements: (Ord. 421 §3(part), 2011).
- A. Faucets.** Lavatory faucets, other than public lavatory or metering faucets, shall deliver 1.5 gallons, or less of water per minute.
1. **Metered Faucets** Self-closing or self-closing metering faucets shall be installed on lavatories intended to serve the transient public, such as those in, but not limited to, service stations, train stations, airports, restaurants, and convention halls. Metered faucets shall deliver no more than .25 gallons of water per use. Self-closing faucets shall deliver no more than .5 gallon per minute.

2. **Public Lavatory** (other than metering) faucets shall deliver 0.5 gallons, or less, of water per minute.
3. **Kitchen, Bar and Utility/Service** (other than hand-washing sinks) faucets shall deliver 2.2 gallons, or less, of water per minute.

**B. Private Use, Public Use.** *Pursuant to the International Plumbing Code (IPC):* “In the classification of plumbing fixtures, “private” applies to fixtures in residences and apartments, and to fixtures in nonpublic toilet rooms of hotels and motels and similar installations in buildings where the plumbing fixtures are intended for utilization by a family or an individual...” “public” applies to fixtures in general toilet rooms of schools, gymnasiums, hotels, airports, bus and railroad stations, public buildings, bars public comfort stations, office buildings, stadiums, stores, restaurants and other installations where a number of fixtures are installed so that their utilization is similarly unrestricted”.

**C. Commercial Equipment Specifications.**

1. **Dishwashers.** Dishwashers are machines designed to clean and sanitize plates, glasses, cups, bowls, utensils, and trays by applying sprays of detergent solution (with or without blasting media granules) and a sanitizing final rinse. Dishwashers shall meet the current specifications set by the Consortium for Energy Efficiency’s (CEE) “High Efficiency Specifications for Commercial Dishwashers and any and all amendments thereto”.
2. **Steamers.** A “steamer” or “steam cooker” is a device with one or more food steaming compartments in which the energy in the steam is transferred to the food by direct contact. Steamers shall meet the current specifications set by the CEE’s “High Efficiency Specifications for Commercial Steamers and any and all amendments thereto”.
3. **Pre-Rinse Spray Valves.** Pre-rinse valves use a spray of water to remove food waste from dishes prior to cleaning in a dishwasher. Pre-rinse spray valves shall (1) deliver 1.3 gallons, or less, of water per minute based on tested performance by the FSTC and (2) meets the cleaning performance standard of 26 seconds per plate or less, based on the ASTM *Standard Test Method for Performance of Pre-Rinse Spray Valves and any and all amendment thereto.*
4. **Dipper Wells.** A “dipper well” is a basin into which clean tap water flows constantly to provide a fresh supply of water for soaking utensils. The run-off goes down the drain. Dipper well flow rate shall be .3 gallon, or less, per minute.
5. **Ice Machines.** Ice machine are a factory-made assembly (not necessarily shipped in one package) consisting of a condensing unit and ice-making section operating as an integrated unit, with means for making and

harvesting ice. It is an assembly that makes up to 4,000 lbs of ice per day at Standard Ratings Conditions, as defined in Section 5.2.1 of ARI Standard 810-2006, and may also include means for storing or dispensing ice, or both. Ice machines shall (1) be Energy Star qualified and (2) meet the current highest Tier specification set by the CEE's "High Efficiency Specifications for Air-Cooled Ice Machines and any and all amendments thereto".

6. **Clothes Washers.** "Commercial clothes washer" means a soft mount front-loading or soft mount top loading clothes washer with clothes container compartment no greater than 3.5 ft<sup>3</sup> for horizontal axis clothes washers, or nor greater than 4.0 ft<sup>3</sup> for vertical axis clothes washers, that is designed for use in (1) applications where the occupants of more than one household will be using it, such as multi-family housing common areas and coin laundries, or (2) other commercial applications. Commercial clothes washers shall meet the minimum Modified Energy Factor (MEF) and maximum Water Factor (WF) corresponding to the highest efficiency machines on the most recent CEE "High Efficiency Specification for Commercial, Family-Sized Clothes Washers and any and all amendments thereto". As of January 1, 2007, the highest efficiency machines have a minimum MEF of 2.20 and a maximum WF of 4.5.
  
7. **Heating, Ventilation and Air Conditioning (HVAC) Equipment.** HVAC Equipment shall eliminate all once-through cooling, replacing with an air-cooled system or a cooling tower. For cooling towers, the following are recommended:
  - (a) flow submeters on make-up and bleed-off lines; submeters should, at a minimum, be capable of totaling the flow.
  - (b) conductivity controllers that activate the blowdown valve for dissolved solids control.
  - (c) overflow sensors on the overflow pipes.
  - (d) baffles or drift eliminators.

All cooling towers shall be monitored and maintained in a manner consistent with applicable regulatory guidelines and manufacturers recommendations.

(5) Water Efficient Landscaping

- A. After January 1, 2011, this chapter shall apply to all of the following:
1. New construction and rehabilitated landscapes for public agency projects and private development projects with a landscape area equal to or greater than 1,000 square feet requiring a building or landscape permit, plan check or design review;
  2. New construction and rehabilitated landscapes which are developer or contractor-installed in single-family and multi-family projects with a landscape area equal to or greater than 1,000 square feet requiring a building or landscape permit, plan check, or design review;
  3. New construction and rehabilitated landscapes which are homeowner-provided in single family and multi-family residential projects with a total project landscape area equal to or greater than 2,500 square feet requiring a building or landscape permit, plan check or design review.
- B. This chapter shall not apply to:
1. Registered local, state or federal historical sites;
  2. Ecological restoration projects that do not require a permanent irrigation system;
  3. Mined-land reclamation projects that do not require a permanent irrigation system; or
  4. Plant collections, as part of botanical gardens and arboretums open to the public.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

- C. Landscape Design Plan. For each landscape project subject to this chapter applicants shall submit a landscape design plan in accordance with the following:
1. Amendments, Mulching and Soil Conditioning: A minimum of 8" of non-mechanically compacted soil shall be available for water absorption and root growth in planted areas.
  2. Incorporate compost or natural fertilizer into the soil to a minimum depth of 8" at a minimum rate of 6 cubic yards per 1000 square feet or per specific amendment recommendations from a soils laboratory report.

3. A minimum 3” layer of mulch shall be applied on all exposed soil surfaces of planting areas except in turf areas, creeping or rooting groundcovers or direct seeding applications.
4. Plants.
  - (a) Selected plants shall not cause the Estimated Total Water Use to exceed the Maximum Applied Water Allowance (see calculation in Appendix A).
  - (b) Plants with similar water use needs shall be grouped together in distinct hydrozones and where irrigation is required, the distinct hydrozones shall be irrigated with separate valves.
  - (c) Low and moderate water use plants can be mixed, but the entire hydrozone will be classified as moderate water use for MAWA calculations.
  - (d) High water use plants shall not be mixed with low or moderate water use plants.
  - (e) All non-turf plants shall be selected, spaced, and planted appropriately based upon their adaptability to the climatic, geologic, and topographical conditions of the project site.
  - (f) Turf shall not be allowed in the following conditions: Slopes exceeding 10%, planting areas 8 feet wide or less, street medians, traffic islands, planter strips adjacent to hardscape, or bulbouts of any size.
  - (g) Invasive plants as listed by the Cal-IPC are prohibited. Weedy species, listed as invasive in California at ([www.cal-ipc.org/ip/inventory/index.php](http://www.cal-ipc.org/ip/inventory/index.php)) shall not be planted. Please check the species you might be thinking of planting against these lists, broken out by plant type. Exemptions may be granted on a case by case basis if District staff determine that the proposed location, species, size, number of plants, and other cultural methods are not likely to cause harm to the watershed ecosystem.
  - (h) Fire Safe Landscape Practices. The requirements in this chapter are intended to support, and be in compliance with, all local and State requirements related to Fire Safe Landscaping practices, including, but not limited to, requirements for Wildlife Urban Interface zones as specified by the local authority.

- (i) Identify any applicable rain harvesting, graywater, or catchment technologies (e.g. rain gardens, cisterns, etc.). Applicants are encouraged to employ alternative irrigation techniques as appropriate, and where permitted by law.
- (j) Identify location and installation details of any applicable stormwater best management practices that encourage on-site retention and infiltration of stormwater. Appropriate stormwater best management practices are encouraged in the landscape design.

5. Water Features.

- (a) Re-circulating water systems shall be used for water features.
- (b) Recycled water shall be used when available and approved for use onsite.

D. Irrigation Design Plan.

1. For each landscape project subject to this chapter applicants shall submit an irrigation design plan that is designed, and installed, to meet irrigation efficiency criteria as described in Appendix A (MAWA) and in accordance with the following:
  - (a) Irrigation systems with meters 1 ½” or greater require a high-flow sensor that can detect high flow conditions and have the capabilities to shut off the irrigation system.
  - (b) Isolation valves shall be installed at the point of connection and before each valve or valve manifold.
  - (c) High-efficiency controllers, weather-based, or other sensor based self-adjusting irrigation controllers shall be required.
  - (d) Rain sensors shall be installed for each irrigation controller.
  - (e) Pressure regulation and/or booster pumps shall be installed so that all components of the irrigation system operate at the manufacturer’s recommended optimal pressure.
  - (f) Irrigation systems shall be designed to prevent runoff or overspray onto non-targeted areas, and wherever overhead irrigation is located directly adjacent to hardscape areas, where runoff water flows into the curb and gutter; all spray heads shall be setback a minimum of 24” from hardscape edges.

- (g) Low volume or bubbler irrigation is required where plant height at maturity will affect the uniformity of a high volume overhead spray system.
  - (h) Minimum 24" setback of overhead spray irrigation is required where turf is directly adjacent to a continuous hardscape area where runoff water flows into the curb and gutter.
  - (i) Slopes greater than 15% shall not be irrigated with an irrigation system with a precipitation rate exceeding 0.75 inches per hour (or lower if appropriate for site conditions as determined the District). This restriction may be modified if the irrigation designer specifies an alternative design or technology, as part of the Landscape Documentation Package, and clearly demonstrates no runoff or erosion will occur. Prevention of runoff and erosion must be confirmed during the irrigation audit.
  - (j) A single valve shall not irrigate hydrozones that mix high water use plants with moderate or low water use plants.
  - (k) Trees shall be placed on separate irrigation valves except when planted in turf areas.
  - (l) Sprinkler heads, rotors and other emission devices on a valve shall have matched precipitation rates.
  - (m) For all irrigation systems, coverage to sustain plant material in a healthy condition and provide irrigation efficiency shall be required. Head-to-head coverage is required for high volume spray systems unless otherwise directed by the manufacturer's specifications.
  - (n) Swing joints or other pipe protection components are required on above-ground irrigation piping.
  - (o) Check valves shall be installed to prevent low-head drainage.
- E. Separate District landscape water service meters shall be required for all new landscapes, other than single-family and two-unit residential landscapes, for which the irrigated area is equal to or greater than 1,000 square feet.
1. A private submeter shall be required for all rehabilitated landscapes, other than single-family and two-unit residential landscapes, for which the irrigated landscape area is equal to or greater than 1,000 square feet.
  2. A private submeter shall be required for all points of connection on single-family and two-unit residential sites for which the irrigated landscape area is equal to or greater than 2,500 square feet.

- F. Documentation for Compliance. The following documentation is to be presented to the District at each of the three steps of review defined below. This documentation shall be required for compliance with this chapter. 13.02.021
1. STEP 1: DESIGN REVIEW. For those landscape projects that require Design Review, applicants shall submit the following documentation to the District:
    - (a) Completed Appendix A, Maximum Applied Water Allowance (MAWA)
    - (b) A landscape planting design plan that accurately and clearly identifies and depicts new and existing trees, shrubs, groundcovers, turf, and any other planting areas; plants by botanical name, common name, and plant factor; plant sizes and quantities; property lines, new and existing building footprints, streets, driveways, sidewalks and other hardscape features; pools, fountains, water features.
    - (c) An irrigation design plan drawn at the same scale as the planting plan that:
      - (i) Accurately and clearly identifies and depicts irrigation system point(s) of connection;
      - (ii) Accurately and clearly identifies and depicts irrigation system components, e.g. controller, pipe, remote-control valves, sprinklers, rain shut-off device, check valves, pressure regulating devices, backflow prevention devices, and other required devices
      - (iii) Includes the Hydrozone Table (See Appendix B).
      - (iv) For the efficient use of water, grading of a project site shall be designed to minimize soil erosion, runoff, and water waste. A grading design plan drawn at the same scale as the planting design plan shall be submitted as part of the Landscape Documentation Package. Items 1(a-e) below are required for all projects.
        - (1) The project applicant shall submit a landscape grading plan that indicates finished configurations and elevations of the landscape area including:
          - (a) height of graded slopes:
          - (b) drainage patterns:
          - (c) pad elevations;
          - (d) finish grade: and
          - (e) stormwater retention improvements, if applicable.

- (2) It is highly recommended that, when site conditions allow, project applicants consider grading so that all irrigation and normal rainfall remains within property lines and does not drain on to non-permeable hardscapes.

The grading design plan shall contain the following statement: "I have complied with the criteria of this chapter and applied them accordingly for the efficient use of water in the grading design plan" and shall bear the signature of a licensed professional or contractor as authorized by law.

- (d) For homeowner-provided projects, a completed Homeowner's Irrigation Design Statement, Appendix B, which describes irrigation methods and design actions that will be employed to meet the irrigation specifications of this chapter, may be submitted in lieu of the irrigation design plan.
2. STEP 2: COMPLETION OF INSTALLATION. Upon installation and completion of the landscape, applicant shall submit Appendix D, the Certificate of Completion.

The certificate shall be accompanied by an irrigation audit that contains the following:

- (a) Operating pressure of the irrigation system.
- (b) Distribution uniformity of overhead irrigation.
- (c) Precipitation rate of overhead irrigation.
- (d) Report of any overspray or broken irrigation equipment.
- (e) Irrigation schedule including:
- (f) Plant establishment irrigation schedule.
- (i) Regular irrigation schedule by month including: plant type, root depth, soil type, slope factor, shade factor, irrigation interval (days per week), irrigation runtimes, number of start times per irrigation day, gallons per minute for each valve, precipitation rate, distribution uniformity and monthly estimated water use calculations.
- (ii) An irrigation maintenance schedule timeline shall be attached to the certificate of completion that includes: Routine inspections, adjustment and repairs to the irrigation system, aerating and dethatching turf areas, replenishing mulch, fertilizing, pruning and weeding.

3. **STEP 3: FINAL INSPECTION.** A final inspection shall be performed by District staff to verify compliance with this chapter. Once the completion form is received, the District will conduct an inspection to check for proper installation and operation of all landscape and irrigation elements per the approved plan; however, the District reserves the right to perform site inspections at any time before, during, or after irrigation system and landscape installation and to require corrective measures if requirements of this chapter are not satisfied. If corrective measures are necessary, the District will set the water budget to zero until corrective measures are completed.

Advanced notice is required for all inspections. Inspections can be requested for either morning or afternoon during regular business hours. Final approval shall not be completed until the landscape inspection is approved. An extension of the approval process, to complete landscape and irrigation installation, shall be requested and shall be approved District staff.

(Ord. 421 §3(part), 2011).

(6) Drinking Water Served Upon Request Only.

By January 1, 2011, eating or drinking establishments, including but not limited to a restaurant, hotel, café, cafeteria, bar, or other public place where food or drinks are sold, served, or offered for sale, are prohibited from providing drinking water to any person unless expressly requested.

(7) Commercial Lodging Establishments Must Provide Guests Option to Decline Daily Linen Services.

By January 1, 2011, hotels, motels and other commercial lodging establishments shall provide customers the option of not having towels and linen laundered daily. Commercial lodging establishments shall prominently display notice of this option in each bathroom using clear and easily understood language.

(8) Grey Water Systems. This section is reserved for future provisions regarding grey water systems.

(9) Rain Water Harvesting Systems. This section is reserved for future provisions regarding rain water harvesting systems.

- (10) Other Provisions. The General Manager will consider and may allow the substitution of design alternatives and innovation which may equally reduce water consumption for any of these requirements. The General Manager may accept documentation methods, water allowance determination, and landscape and irrigation design requirements of the State of California Model Water Efficient Landscape Ordinance instead of Chapters 14-30.040 and 14-30.050 of these requirements where it can be demonstrated that the State procedure will more effectively address the design requirements of the project.
- (11) Provisions For Appeal. The applicant or any affected person may appeal the final decision of staff regarding plan check or final inspection to the General Manager, The decision of the General Manager shall be final. An appeal regarding plan check shall be submitted prior to the installation of the landscape or it will be deemed to have been waived.
- (12) **Forms**. The following forms shall be submitted as described in this chapter: Appendix A, Maximum Applied Water Allowance; Appendix B, Homeowner's Irrigation Design Statement; Appendix C, Hydrozone Table; Appendix D, Certificate of Completion. (Ord. 421 §3(part), 2011; Ord. 414 §2, 2010)

## Rebates

### Get Paid to Save

Rebates are back! We're pleased to offer rebates on high-efficiency toilets, high-efficiency clothes washers, and smart irrigation controllers.

In addition to getting a rebate on your purchase, you will continue to save money, and water, in the long term by replacing old water-wasting toilets, clothes washers, and irrigation controllers with new water-efficient models.

For an overview of our rebate programs, see [our brochure \(/DocumentCenter/View/124\)](#). For program-specific information—including qualifying models, terms and conditions, and other important information—choose from the links below:

- [High-Efficiency Clothes Washer Rebates \(http://ca-marinwater.civicplus.com/164/Clothes-Washers\)](http://ca-marinwater.civicplus.com/164/Clothes-Washers)
- [High-Efficiency Toilet Rebates \(http://ca-marinwater.civicplus.com/166/Toilets\)](http://ca-marinwater.civicplus.com/166/Toilets)
- [Smart Irrigation Controller Rebates \(http://ca-marinwater.civicplus.com/165/Irrigation-Controllers\)](http://ca-marinwater.civicplus.com/165/Irrigation-Controllers)



### What's New

[High-efficiency urinal rebates \(http://ca-marinwater.civicplus.com/167/Urinals\)](http://ca-marinwater.civicplus.com/167/Urinals) are now available for commercial customers.

### Documents

- [Rebates: \(/DocumentCenter/View/124\)Get Paid to Save Brochure \(/DocumentCenter/View/124\)](#)

*Funding for this rebate comes from the Marin Municipal Water District and the Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006, administered by State of California, Department of Water Resources.*

*Bay Area water agencies are coordinating to provide this rebate program, funded in part*

## Drought Information

### July 1, 2014 Update

Total rainfall at Lake Lagunitas for the rainfall year ending June 30 will top out at 33.40 inches, which is about 64% of the annual average. This marks the third consecutive year of below average rainfall, and the reservoir storage levels reflect those low numbers.

The MMWD Board of Directors' call for 25% voluntary rationing is still in place. Customers who are already low water users (65 gallons per person per day for residential customers) do not need to reduce further.



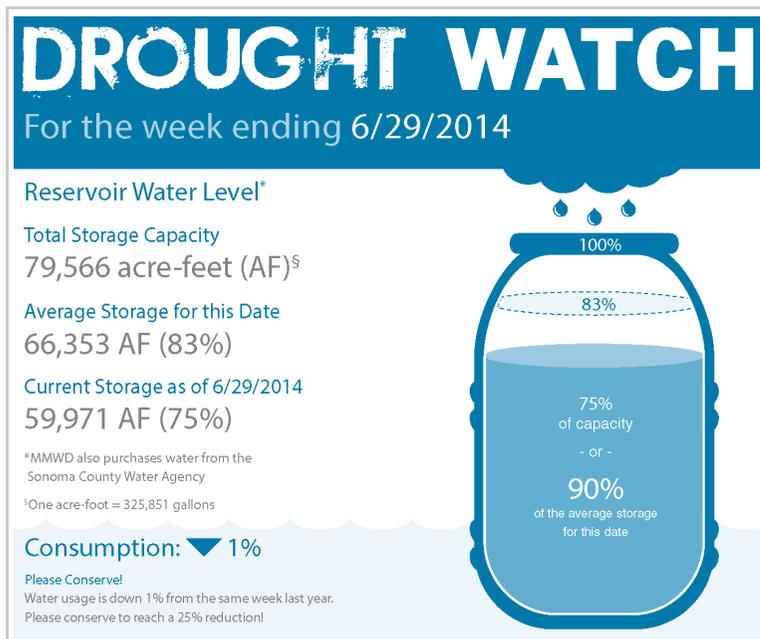
[http://visitor.constantcontact.com/manage/optin?v=001ZfiuR\\_73g8oCVVqiYN3qx5SoeVMq4Jl7oqzJYfADvMuzjFFePbZfJS3imozxauFhzn4\\_UXZ352mxagVA88TRiwdUjjZPovq6m2ltCIH-z0ScTlw3eC1YXYHZWlyBOBx\\_hPHUfTJA%3D](http://visitor.constantcontact.com/manage/optin?v=001ZfiuR_73g8oCVVqiYN3qx5SoeVMq4Jl7oqzJYfADvMuzjFFePbZfJS3imozxauFhzn4_UXZ352mxagVA88TRiwdUjjZPovq6m2ltCIH-z0ScTlw3eC1YXYHZWlyBOBx_hPHUfTJA%3D)

### Mailer

Feb 2014



[\(DocumentCenter/View/1264\)](#)



What is your water footprint? Take a tour with National Geographic's calculator.



[http://environment.nationalgeographic.com/environment/freshwater/change-the-course/water-footprint-calculator/?utm\\_source=NatGeom&utm\\_medium=Email&utm\\_content=multi\\_20140526&utm\\_campaign=](http://environment.nationalgeographic.com/environment/freshwater/change-the-course/water-footprint-calculator/?utm_source=NatGeom&utm_medium=Email&utm_content=multi_20140526&utm_campaign=)

**Note:** Although consumption is down only 1% compared with the same week last year, we received almost two inches of rain from June 23 - 25 in 2013.



Date Event Began: **June 2, 2014**

Report as of: **June 26, 2014**

EOC Activation level: County **OES Duty Officer Coordination only**

Event Location: **County of San Mateo**

Areas Affected:

- 1. Alpine Creek, County Service Area 7 (CSA7), La Honda**
- 2. Pescadero Creek, Redwood Glen Camp, Loma Mar**
- 3. Eucalyptus trees throughout the County/Op Area**

Weather: **Patchy fog overnight and mornings, drier daytime seasonal trend, highs in the 80s.**

Current Situation: **A couple of streams are beginning to dry up in the rural western part of the County affecting CSA7 in La Honda and the Redwood Glen Conference Center and Camp in Loma Mar.**

Overall Prognosis: **Worsening**

Name and Contact Information of Person Completing this Report: **Brian Molver, County OES Duty Officer**

CURRENT SITUATION	RESPONSE	LOCATIONS, COMMENTS, ETC.
<b>PUBLIC/ENVIRON. HEALTH</b>	<b>Monitoring</b>	Public Health is monitoring and Environmental Health is checking smaller water systems.
<b>AGGRICULTURE</b>	<b>Monitoring</b>	The County Agriculture Commissioner is in contact with the affected communities
<b>PRIVATE WATER SYSTEMS</b>	<b>Redwood Glen Loma Mar, CA</b>	Redwood Glen Christian Camp and Conference Center is struggling with increasing their drinking water infrastructure as for years, they have contracted with County Parks to pump potable water from Memorial Park. Their water system is being assessed for serviceability.
<b>PUBLIC WATER SYSTEMS</b>	<b>Conserving</b>	10 percent reduction by all consumers was asked by PUC and the County in February
<b>COUNTY WATER SYSTEMS</b>	<b>Alpine Creek</b>	County Service Area (CSA) 7 - La Honda, monitoring intake from creek to raw water reservoir. Threat of critical shortage if stream flow continues to diminish.
<b>WATER HAULING</b>	<b>Yes</b>	Some water hauling by area residences has been ongoing and CSA7 may begin hauling soon.
<b>PARK CLOSURES</b>	<b>Memorial Park</b>	Memorial Park closed Public Works reviewing cost of upgrading the water treatment plant.
<b>FIRE HAZARD</b>	<b>HIGH</b>	Very dry - Low to Moderate risk of large fires in the absence of a "High Risk" event.
<b>COUNTY PARKS</b>	<b>Eucalyptus Situation</b>	A situation exists not only in County but Statewide as thousands of stressed Eucalyptus trees dropping millions of seedpods where stands of trees already are considered an invasive problem.
<b>DROUGHT TASK FORCE</b>	<b>TBD</b>	Not formed at this time
<b>AMERICAN RIVERS AGENCY</b>	<b>Monitoring</b>	American Rivers and their partners are implementing an innovative approach to address the issue of water supply in the San Gregorio Watershed and the legal transfer of agricultural water rights from low-flow summer diversions to winter storage diversions and keeps County OES apprized of critical issues.
<b>SHERIFF'S OES</b>	<b>Coordinating</b>	OES Coordinator is reporting situations in Op Area WebEOC and CalEOC weekly and gathering intelligence. Also participates in weekly Coastal Region Drought Conference Calls.
<b>PUBLIC WORKS</b>	<b>Monitoring</b>	County Public Works Watershed Protection is monitoring the CSA7 situation and checking other services area for drought related issues

COUNTY PROCLAMATION	DATE REQUESTED	DATE GRANTED	COUNTY PROCLAMATION	DATE REQUESTED	DATE GRANTED
LOCAL	NA		GUBERNATORIAL	NA	
CAL OES SECRETARY'S	NA		PRESIDENTIAL	NA	

# Drought forces some campsite closures in San Mateo County parks

By Emilie Mutert



ggg\$e3rpeki

### RELATED STORIES

WU{ exdv\$wi\$ni\$iviewnk\$fyx  
qsvi\$eznkw\$riihh  
By Chris Roberts

[ exdv\$wi\$zaryiw\$ew\$svq ep  
hiwtnd\$egjvne\$ivsykx  
By Chris Roberts

JegDwe{ fiw}\$Dywg\$liwazep  
gergiph\$e\$eq t\$ exli\$iv\$ri  
x\$nkivmk\$eg tegw\$veq \$vq  
Jwi  
By Laura Dudnick

Xli\$eq tkvyrhw\$eQ iq svne\$voth\$Psq eQ ev\$eziz\$fiir\$dyxvnh\$sv\$li\$iq emrhiv\$3li\$45B  
viewr\$ve\$ivyp\$e\$ark\$ark\$veyk\$e\$erhmsrv2

The San Mateo County Parks Department has announced that the campsites at its Memorial Park grounds in Loma Mar will be closed for the duration of the 2014 camping season due to ongoing drought conditions.

Park officials were forced to shutter the popular site for the first time in response to the statewide drought that has reduced water levels in Pescadero Creek, the main water source for the park. Lower creek levels, combined with increasing water temperatures, have also led to an algae bloom in the creek, officials said.

But the primary driving force for the closure is that with the limited supply of creek water, the department is not able to properly operate the campsites, Parks Director Marlene Finley said.

"The main reason is lack of water," Finley said. "We've been monitoring water levels, and we thought we had a few more inches before we would have to close the campground. But the low water combined with the algae made it so we couldn't keep the water flowing."

Finley remains hopeful that camping can resume in the redwood-dense, 499-acre park in 2015.

"It all depends on whether we continue in this drought cycle or get a sufficient amount of rain," she said.

In the meantime, the 2,250 people who made reservations to camp in the park this season are being contacted by staff members and given the option of either receiving a refund, transferring their reservations to the 2015 season or, in some cases, making reservations to camp at other county parks.

"It was a difficult decision because so many people count on their summer vacation at Memorial campground. For some, they've been coming to Memorial to camp for generations," Finley said.

This season's closure is the first in the history of Memorial Park, which is dedicated to the memory of World War I soldiers and this year celebrates 90 years of being a park. The camping fees lost this year are expected to cost the Parks Department about \$300,000 to \$350,000, Finley said.

The 26.6-mile-long Pescadero Creek, which flows from the Santa Cruz Mountains, is the county's longest stream and also the only water source to Memorial Park.

Park rangers will continue to monitor the creek water levels and track its further developments. The Parks Department is in the process of hiring a contractor to install 10,000-gallon holding tanks in Memorial Park to help alleviate the lack of creek water.

An application for state funding has also been submitted by the Resource Conservation District for San Mateo County. The application requests funding for a 2 million-gallon holding tank, which would collect water throughout the year and replace the current half-million-gallon tank, which is nonfunctioning due to a crack. Installation of such a container could take up to two years, Finley said.

There are two other parks within the Pescadero Creek Complex: Sam McDonald Park, at which youth campsites have also been closed this season due to drought-related reasons, and Pescadero Creek Park, which remains open to visitors. All the day-use areas at Memorial Park currently remain open as well, but visitors are advised to bring their own drinking water.

[More Peninsula »](#)

Tags: [Peninsula](#), [San Mateo County Parks Department](#), [Memorial Park](#), [campsites](#), [Pescadero Creek](#), [Marlene Finley](#), [Sam McDonald Park](#)



Contact Us

Tweet 4 Favorite Share

# U.S. Drought Monitor

## California

### June 24, 2014

(Released Thursday, Jun. 26, 2014)

Valid 8 a.m. EDT

#### Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	0.00	100.00	100.00	100.00	76.69	32.98
<b>Last Week</b> <i>6/17/2014</i>	0.00	100.00	100.00	100.00	76.69	32.98
<b>3 Months Ago</b> <i>3/25/2014</i>	0.00	100.00	99.80	95.21	71.78	23.42
<b>Start of Calendar Year</b> <i>12/31/2013</i>	2.61	97.39	94.25	87.53	27.59	0.00
<b>Start of Water Year</b> <i>10/1/2013</i>	2.63	97.37	95.95	84.12	11.36	0.00
<b>One Year Ago</b> <i>6/25/2013</i>	0.00	100.00	98.21	92.61	0.00	0.00

#### Intensity:

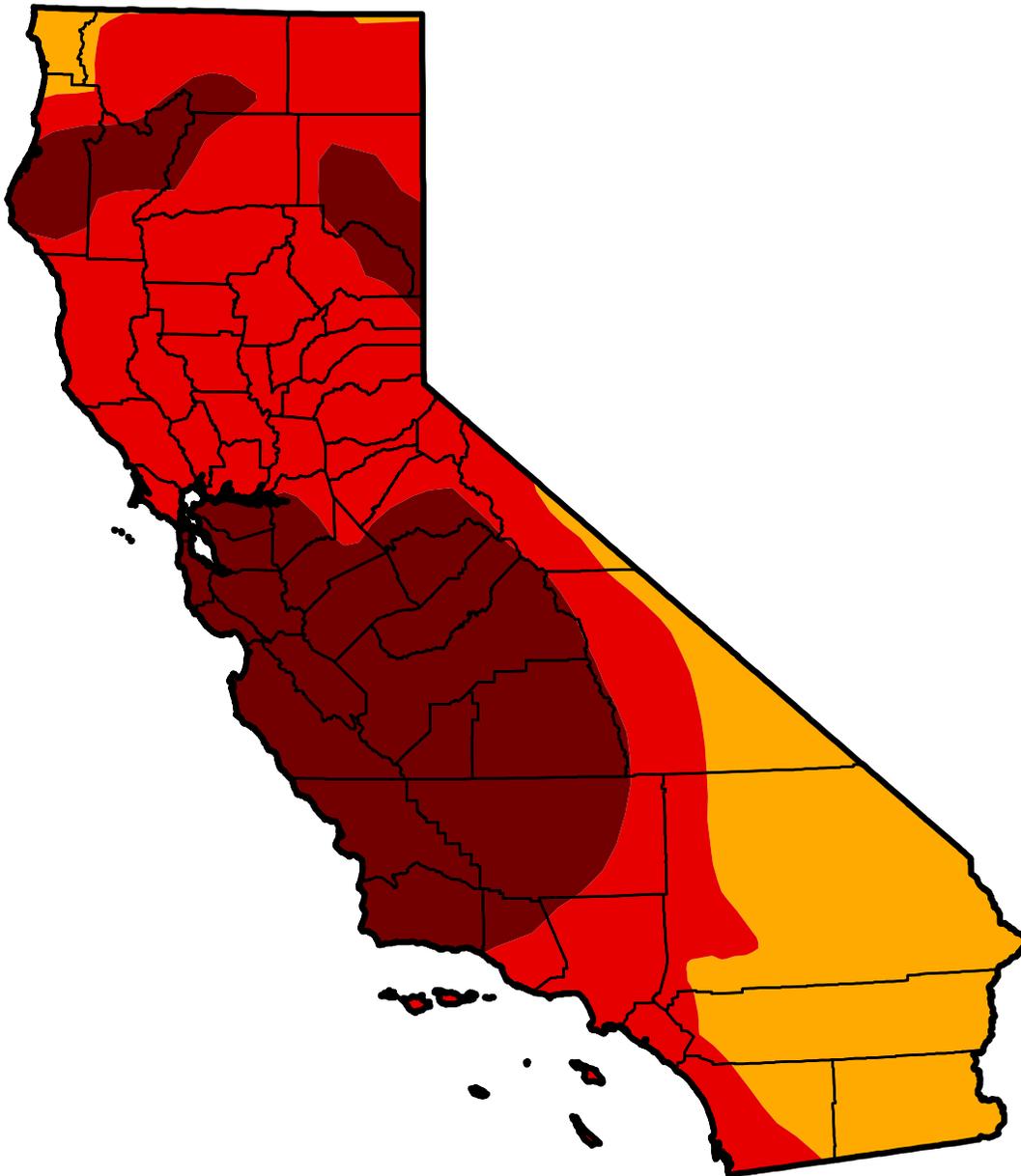
 D0 Abnormally Dry	 D3 Extreme Drought
 D1 Moderate Drought	 D4 Exceptional Drought
 D2 Severe Drought	

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

#### Author:

Eric Luebehusen

U.S. Department of Agriculture





**Executive Directive 14-01**  
**Water Conservation – City Departments**  
*February 10, 2014*

San Francisco is a leader in using water wisely. Our citizens have some of the lowest water use in California, and the City has taken steps to help residents and businesses become even more efficient in their water use. In 2009, the City and County of San Francisco passed two water conservation ordinances for residential and commercial properties to install high-efficiency plumbing fixtures. The San Francisco Public Utilities Commission (SFPUC) offers financial incentives and technical assistance to replace inefficient plumbing fixtures for retail water customers. Additionally, San Francisco is diversifying our water supply by developing groundwater and recycled water.

Snowmelt from the Sierra Nevada is the primary drinking water source for 2.6 million people in the Bay Area. In 2013, California experienced one of the driest years on record, setting the stage for reduced water storage levels and possible first year drought conditions. These conditions have persisted in 2014, which could be the driest water year in the state's history. Precipitation has been less than 10 percent of normal so far for the year. After two years of below-average rainfall in California, Governor Jerry Brown declared a statewide drought in January 2014.

Given the current conditions in California, the City and County of San Francisco is requesting its water customers to reduce overall water consumption by 10 percent. Reducing water usage is essential to stretching our water supplies during this time of drought.

City agencies have made great strides to use less water. Since the last period of voluntary rationing in 2007, water use by City departments has declined by 22%. While many departments have implemented water conservation measures, there is still room to improve and save more water. Therefore, with this Executive Directive, I am outlining actions City departments should pursue to further reduce their consumption of water.

**Further reduce consumption by 10 percent.** All departments are directed to take steps immediately to reduce their water consumption with a goal of achieving a 10 percent reduction. Department heads are requested to report innovative conservation strategies to the SFPUC (contacts below) for the purpose of sharing best practices with other Departments. This reporting will be voluntary.

**Develop a Water Conservation Plan.** By August 1, 2014 all departments shall develop a Water Conservation Plan that includes:

- A departmental contact for water conservation efforts.
- An inventory of all departmental plumbing fixtures and their flow rates, including toilets, urinals, faucets, and showerheads.
- Timeline for retrofitting inefficient plumbing fixtures with high-efficiency models.
- A list of best management practices that departments will implement to achieve water-efficient operations and maintenance of parks, medians and other irrigated landscapes.

**Educate staff and visitors on water conservation practices.** Effective immediately, all departments shall educate employees and facility visitors about the efficient use of water at City facilities and the need to conserve.

**Explore the use of non-potable water for street cleaning.** City departments should explore the feasibility of replacing potable water with non-potable water sources for street cleaning.

**Develop alternative sources of water supply.** The SFPUC is directed to develop alternative sources of water supplies for both potable and non-potable uses. All departments shall cooperate with the SFPUC in developing these alternative water supplies. These alternatives shall include, but not be limited to: Cherry Lake; groundwater; recycled water; and foundation drainage.

The SFPUC can provide departments with assistance to comply with this Executive Directive. Please contact Steven Ritchie, Assistant General Manager, SFPUC (415-934-5736, [sritchie@sflower.org](mailto:sritchie@sflower.org)) or Paula Kehoe, Director of Water Resources, SFPUC (415-554-0792, [pkehoe@sflower.org](mailto:pkehoe@sflower.org)).

This Executive Directive shall be effective immediately, and remain in place until rescinded or amended by future Directive.



Edwin M. Lee  
Mayor, City & County of San Francisco

# Urban Water Management Plan 2010



# 2010 URBAN WATER MANAGEMENT PLAN

## Table of contents

### Sections

<b>1</b>	<b>Introduction</b>	<b>6</b>	<b>Water Shortage Contingency Planning</b>
<b>2</b>	<b>Service area and Water Supply System</b>	<b>7</b>	<b>Water Recycling</b>
<b>3</b>	<b>Water Supply Sources</b>	<b>8</b>	<b>Water Quality</b>
<b>4</b>	<b>Historical Water Use and Demand Projections</b>	<b>9</b>	<b>Addressing Threats to Supply Reliability</b>
<b>5</b>	<b>Demand Management Measures</b>	<b>10</b>	<b>Water Supply Reliability</b>
		<b>11</b>	<b>Appendices</b>

#### **Prepared Under the Direction of:**

Jim Fiedler  
*Chief Operating Officer, Water Utility Enterprise*

Sandy Oblonsky  
*Deputy Operating Officer, Water Utility Operations  
and Maintenance Division*

#### **Contributors:**

Behzad Ahmadi  
Terri Anderson  
Hossein Ashktorab  
Erin Baker  
Jerry de la Piedra  
Vanessa de la Piedra  
Amy Fowler  
Kent Haake  
Tracy Hemmeter  
Pam John  
Barbara Judd  
Cindy Kao  
Bassam Kassab  
Jeannine Larabee  
Tracy Ligon  
Joan Maher  
Jeff Micko  
James O'Brien  
Miguel Silva  
Toni Vye  
Ray Wong

#### **Board of Directors:**

Donald Gage, Chair – District 1  
Linda J. LeZotte, Vice Chair – District 4  
Joe Judge – District 2  
Richard Santos – District 3  
Patrick Kwok – District 5  
Tony Estremera – District 6  
Brian Schmidt – District 7

#### **Graphic Design:**

Joy O. Lim  
Michael Sierra, Intern

**Table 6-1 Water Shortage Contingency Plan**

Stage	Stage Title	Projected GW Reserves	Response	Suggested Reduction in Water Use <sup>(1)</sup>	Communication and outreach effort
<b>Stage 1</b>	Normal	Above 300,000 AF	Continue regular outreach activities in this stage to promote ongoing implementation of conservation and implementation of BMPs.		<ul style="list-style-type: none"> <li>• Maintain public information and outreach focused on long term, ongoing conservation actions (e.g., water saving appliances, repairing leaks, and low-water use landscaping).</li> </ul>
<b>Stage 2</b>	Alert	250,000 to 300,000 AF	This stage is meant to warn customers that current water use is tapping into groundwater reserves – a signal that groundwater levels are dropping to meet demands. Communications are needed to set the tone for the onset of shortages. Request water users to reduce water use by as much as 10%. Coordinate ordinances with cities and warn and prepare for a stage 3 situation.	0-10% demand reduction	<ul style="list-style-type: none"> <li>• Expand on Stage 1 efforts</li> <li>• Intensify public information and advertising campaign</li> <li>• Focus messages on shortage situation and immediate behavioral changes</li> </ul>
<b>Stage 3</b>	Severe	200,000 to 250,000 AF	Shortage conditions are worsening, requiring close coordination with retailers and cities to enact ordinances and water use restrictions. Requires significant effort and behavioral change by water users. Increase outreach campaign to save water.	10-20% demand reduction	<ul style="list-style-type: none"> <li>• Expand and intensify Stage 2 activities</li> <li>• Further expand outreach efforts</li> <li>• Modify messages to reflect more severe shortage condition and need for immediate behavioral changes</li> </ul>
<b>Stage 4</b>	Critical	150,000 to 200,000 AF	This is the most severe stage in a multiyear drought. Encourage retailers and cities to enforce their plans which could include fines for repeated violations.	20-40% demand reduction	<ul style="list-style-type: none"> <li>• Strengthen and expand Stage 3 activities</li> <li>• Further expand outreach efforts</li> <li>• Open drought information center</li> </ul>
<b>Stage 5</b>	Emergency	Below 150,000 AF	This last stage is meant to address a more immediate crisis such as a major infrastructure failure. Water supply would be available only to meet health and safety needs.	Up to 50% demand reduction	<ul style="list-style-type: none"> <li>• Daily updates on water shortage emergency (media briefings, web update, social media outlets)</li> <li>• Activate EOC</li> </ul>

Notes:

(1) When the District Board calls for short-term water conservation, the cities and water retailers will consider the implementation of water contingency plan actions identified in their Urban Water Management Plans in order to achieve the necessary shortage response. The District works with the water retailers and cities to help coordinate these activities.

Reference 28

Santa Clara Valley  
Water District



42nd Annual Report

**FY 2013-14**  
**Protection and Augmentation**  
**of Water Supplies**

February 2013

# Protection and Augmentation of Water Supplies

## 42<sup>nd</sup> Annual Report

2013-2014

### Sections

**1** Present Water Requirements and Water Supply Availability

**2** Future Water Requirements and Water Supply Availability

**3** Programs to Sustain Supply Reliability

**4** Financial Outlook of Water Utility System

**5** Appendices

#### Prepared Under the Direction of:

Jim Fiedler  
*Chief Operating Officer, Water Utility Enterprise*

#### Contributors:

Terri Anderson	Michele Keefhaver
Behzad Ahmadi	Mala Magill
Linda Arluck	Joan Maher
Erin Baker	Frank Maitiski
Tracy Broadway	Mark Merritt
Gerald De La Piedra	Judy Nam
Vanessa De La Piedra	James O'Brien
Hemang Desai	Eric Olson
Beth Dyer	Debra Osikominu
Tracy Hemmeter	Katherine Oven
Cindy Kao	Miguel Silva
Bassam Kassab	Lisa Stine
	Darin Taylor

#### Board of Directors:

Nai Hsueh – District 5, Chair  
Tony Estremera – District 6, Vice Chair  
Dennis Kennedy – District 1  
Barbara Keegan – District 2  
Richard P. Santos – District 3  
Linda J. LeZotte – District 4  
Brian Schmidt – District 7

#### Graphic Design:

*Graphic Services*  
Benjamin Apolo III  
Joy O. Lim  
Marty Grimes

#### Cover photos:

*Photo on left - Silicon Valley Advanced Water Purification Center*  
*Photo on right - Main Avenue Ponds facing northward*

However, two retailers (the City of San Jose and the City of Santa Clara) have interruptible contracts. San Francisco is scheduled to make a decision about whether to provide supply guarantees to these water retailers by 2018.

Recycled Water

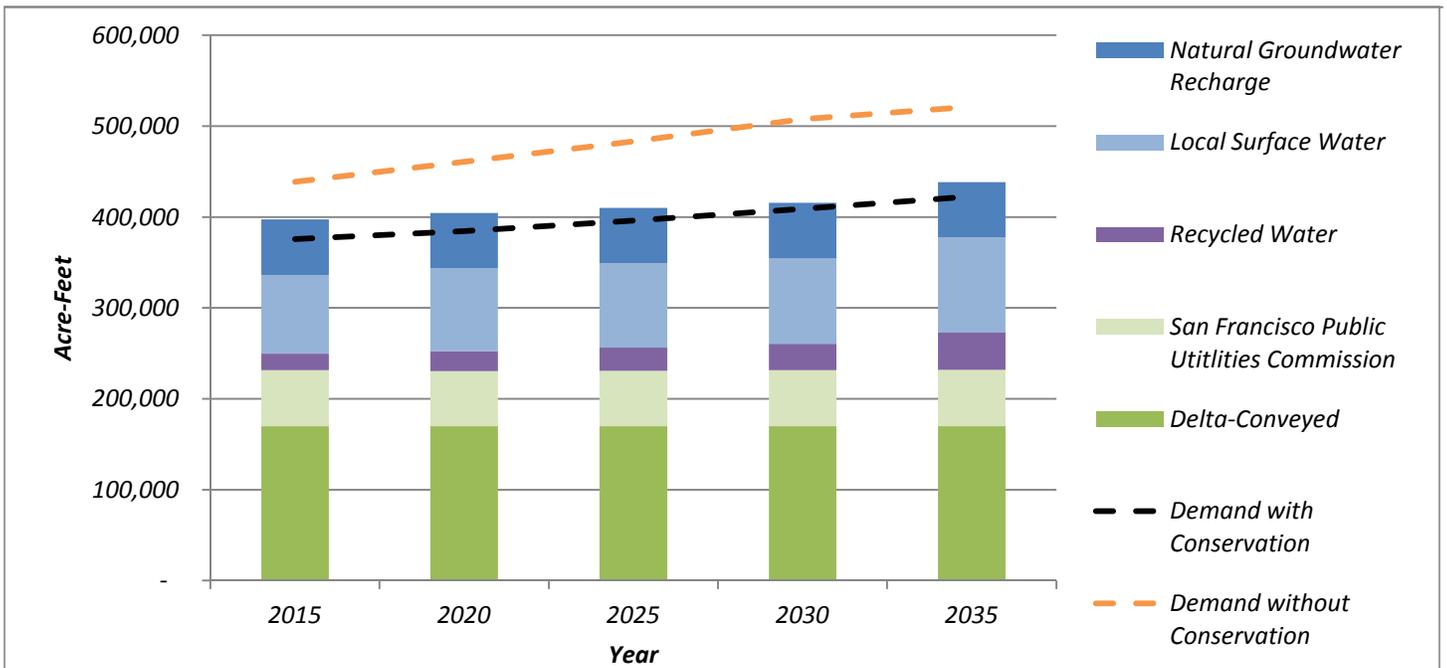
Recycled water use is expected to increase in the long-term. The UWMP projects that approximately 29,200 acre-feet per year of year 2030 demands will be met with recycled water. In addition, the water supply strategy in the board-adopted 2012 Water Supply and Infrastructure Master Plan (Water Master Plan) includes developing another 20,000 acre-feet per year of advanced treated recycled water for potable reuse by 2030. Additional studies and outreach are necessary before the water district can begin project-specific planning.

Local Surface Water and Natural Groundwater Recharge

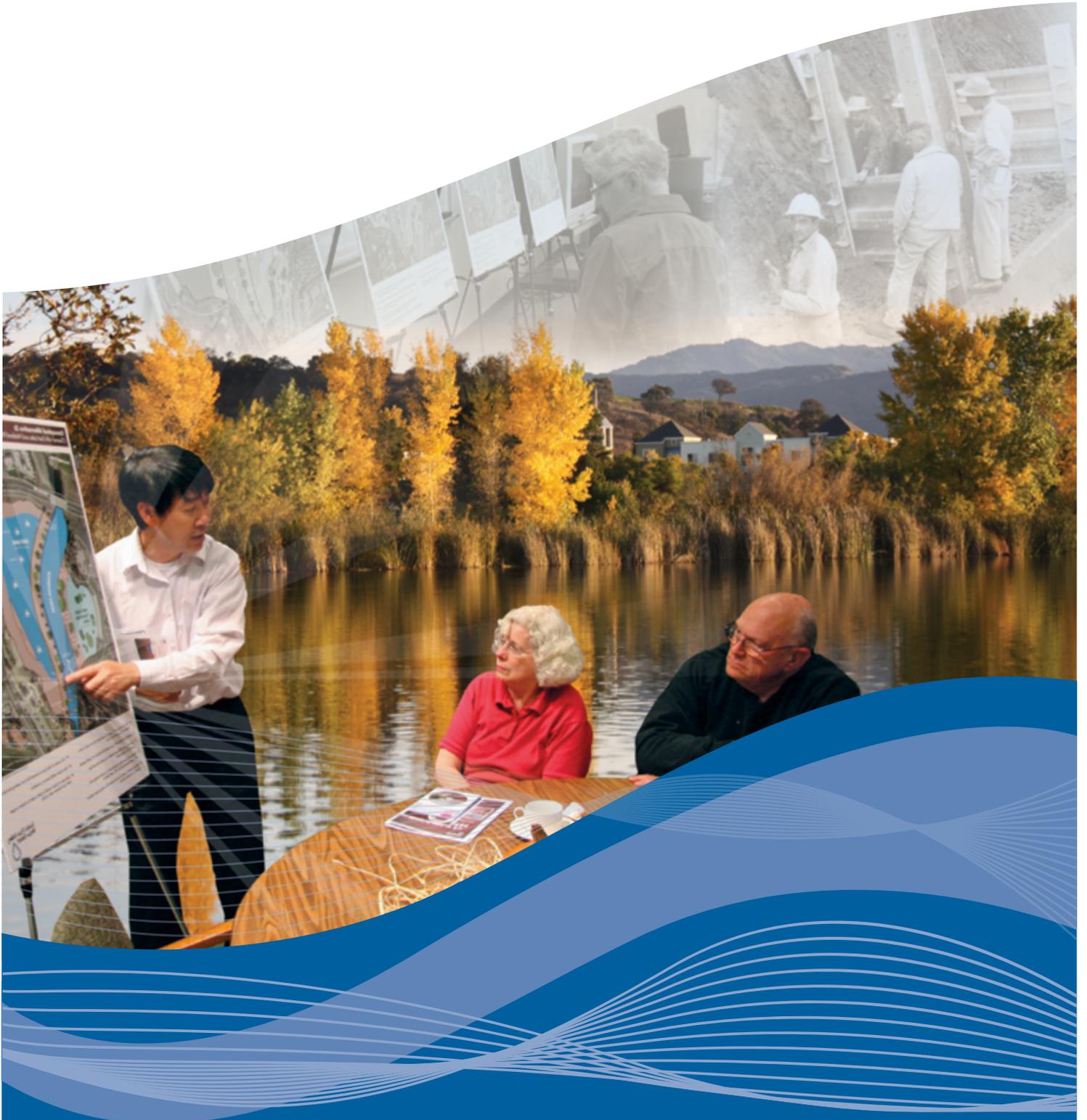
Local surface water supplies are expected to increase over current levels after the water district completes seismic retrofits on several dams so the dams can be operated at full capacity. In addition, the Water Master Plan calls for constructing and rehabilitating pipelines between reservoirs and groundwater recharge ponds and constructing new groundwater recharge ponds. These new and rehabilitated facilities will increase the water district’s ability to use local runoff to meet water demands. Natural groundwater recharge is not expected to change over the planning horizon.

Figure 2-2.1 shows projected average supplies and demands through year 2035. The projection assumes existing supplies and infrastructure are maintained and that the Water Master Plan is fully implemented. In this case, average water supplies will be sufficient to meet future water demands.

**Figure 2-2.1 Average Supply & Demand Comparison, Santa Clara County**



# FY 2012-13 Annual Report



# The mission of the district

is to provide Silicon Valley safe, clean water for a healthy life, environment, and economy.



## District at a glance

**Cities served:** 15

**Water retailers served:** 12

**Population served:** 2 million residents and commuters

**Budget:** \$285.2 million FY 2012–13

**Water used in the county:**

Approximately 362,700 acre-feet (AF) FY 2012–13

**Water imported:** 188,000 AF FY 2012–13

**Groundwater recharged:** 90,000 AF FY 2012–13

**Reservoirs:** 10, combined capacity of 169,000 AF

**Treatment plants:** 3, delivered 129,500 AF FY 2012–13

**Pumping plants:** 3

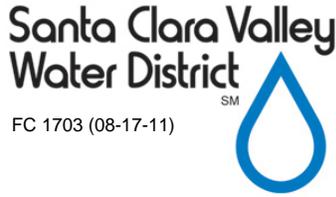
**Miles of streams maintained:** 275

**Miles of pipelines:** 143

**Mercury removed from waterways:**

More than 4,200 pounds since 2000

**Acres of wildlife habitat restored:** 569



Meeting Date: 3/25/14  
 Agenda Item No.: 4.1  
 Manager: J. Maher  
 Extension: 2073  
 Director: All

**SUPPLEMENTAL BOARD AGENDA MEMORANDUM**

**SUBJECT:** Update on 2014 Water Supply and Drought Response

**REASON FOR SUPPLEMENTAL MEMORANDUM:**

To allow for inclusion of the most current water supply information.

**RECOMMENDATION:**

Receive, review, and discuss updated information on 2014 water supply and drought response.

**SUMMARY:**

Severe drought continues to impact both statewide and local water supply conditions. On February 25, the Board approved a resolution setting a county-wide water use reduction target equal to 20 percent of 2013 water use, or approximately 72,000 acre-feet, and recommending that retail water agencies, municipalities and the county implement mandatory measures as needed to accomplish the target. This action was based on the District’s Water Shortage Contingency Plan<sup>1</sup> and estimated 2014 water supply conditions that showed groundwater reserves could reach the Stage 3 (“Severe”) level by the end of the year if water use reduction measures are not implemented. Updated information on 2014 water supply and operations is presented, along with an update on the District’s drought response strategies.

**A. Update on 2014 Water Supply and Operations**

Despite some precipitation since the last update on February 25, water supply conditions statewide and locally have not measurably improved. Table 1 shows updated estimates of 2014 water supply and use in Santa Clara County. End-of-year groundwater storage is still projected to drop to the Stage 3 “Severe” range (200,000 to 250,000 acre-feet) if the 20 percent water use reduction target is not achieved.

**1. Imported Water Supply**

In this update, District imported water supplies have been reduced by 5,420 acre-feet to reflect more conservative estimates of 2013 State Water Project (SWP) carryover deliveries and supplemental water. The Bureau of Reclamation’s (Reclamation’s) February announcement of 2014 Central Valley Project (CVP) allocations provided 50% of “historic use” for municipal and industrial water service, confirmed by letter to equal 65,000 acre-feet for the District. However, the unprecedented allocations of only 40% to senior water rights holders and wildlife refuges, along with the State Water Resources Control Board’s

<sup>1</sup> Santa Clara Valley Water District’s 2010 Urban Water Management Plan, <http://www.valleywater.org/Services/WaterSupplyPlanning.aspx>

**SUBJECT:** Update on 2014 Water Supply and Drought Response

In order to conserve the limited supplies of imported water for the treatment plants, nearly all releases of imported water to creeks and ponds for groundwater recharge were discontinued at the end of January, with the exception of releases to Madrone Channel and upper Coyote Creek. Staff has been coordinating with the regulatory agencies and other stakeholders regarding the District's raw water operations. A March 2014 version of the Reservoir and Creek Dry Back Conditions Neighborhood Update (Attachment 2) has been prepared, posted at many of the recharge facilities, distributed to the public and placed on the District's Drought 2014 website (<http://www.valleywater.org/drought2014/>).

### **3. Untreated Surface Water Deliveries**

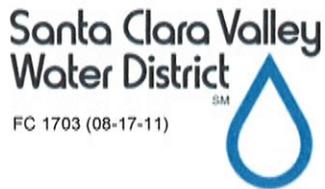
In addition to eliminating nearly all groundwater recharge to conserve limited surface water supplies for drinking water, the District's operations plans include curtailment of untreated surface water deliveries. Over the years, a limited number of permits have been issued by the District to allow untreated surface water to be diverted from District facilities and creeks to irrigate landscape, agriculture, golf courses and other non-potable uses. Water delivered under current permits (99 total) is approximately 3,500 acre-feet annually, and represents approximately 1 percent of county's municipal and industrial water use, and 5 percent of the county's agricultural water use. Since February 25, staff has initiated communication with these surface water customers to let them know that alternate sources of supply will need to be used in 2014, and that alternate sources will need to be developed if not readily available.

On March 13, a meeting was held with surface water permittees that receive deliveries from District pipelines to discuss the curtailment of surface water. After receiving feedback from the surface water permittees, a letter was prepared and sent to all (72) pipeline surface water users on March 21, 2014. The letter notifies them that releases of District surface water will cease on May 1, 2014, but provides for extensions of time to develop alternate sources of supply. Extensions of time will be considered for agricultural and commercial users that need to refurbish a well or undertake other work to access groundwater or another source of supply. Staff is prepared to assist surface water permittees with pursuit of grants or other drought relief funding, expedited well permitting, and other actions.

The District currently has 27 permittees that divert surface water from creeks. Given reduced releases from District reservoirs, elimination of imported water releases and lack of rainfall, the ability to divert from creeks has already been severely limited for some time. Staff has been in communication with creek diverters and will be following up with a formal letter shortly notifying them of the unavailability of District supply.

### **4. Treated Water Operations**

With limited surface water supplies, the District expects to be able to meet only 80% of treated water contract demands from March through December 2014. Staff has been proactively working with the treated water retailers, meeting individually with each retailer and scheduling joint retailer subcommittee meetings, to inform them of the need to cut back treated water deliveries by 20%. On March 20, a formal letter and water delivery schedule reflecting 20% reductions from March through December were sent to each retailer requesting concurrence with the reduced schedule.



Meeting Date: 2/25/14  
Agenda Item No.: 2.1  
Manager: J. Maher  
Extension: 2073  
Director: All

**CONFORMED COPY**  
**SUPPLEMENTAL BOARD AGENDA MEMORANDUM**

**SUBJECT:** Update on 2014 Water Supply Outlook

**REASON FOR SUPPLEMENTAL MEMORANDUM:**

To allow for inclusion of the most current water supply information.

**RECOMMENDATION:**

- A. Receive, review, and discuss updated information on the 2014 water supply outlook; and
- B. \*Adopt a resolution calling for 20 percent water use reductions through December 31, 2014.

**SUMMARY:**

This provides the monthly update on the 2014 water supply outlook as directed by the Board. On January 28, 2014, the Board received the initial water supply outlook and took the following actions:

1. Pursuant to the District's Water Shortage Contingency Plan<sup>1</sup>, the Board set a preliminary water use reduction target equal to 10 percent of 2013 county-wide water use, or approximately 36,000 acre-feet; and,
2. Approved a budget adjustment of \$500,000 to augment the District's Water Conservation Program and related public outreach; and,
3. Authorized the CEO to pursue engagement in administrative and legislative efforts that support drought response.
4. Directed the CEO to provide monthly updates on 2014 water supply conditions, along with additional recommendations as needed.

This update presents changes to water supply conditions that have occurred since January 28, and recommends that the Board adopt a resolution calling for 20 percent water use reductions through December 31, 2014.

**A. 2014 Water Supply Outlook**

Although one or two storms have occurred since the initial 2014 water supply outlook, conditions both statewide and locally have not improved, and the extent of water supply and operational challenges is becoming clearer. Developments since January 28 are summarized in the following section, and the resulting changes in estimated 2014 water supply and use are shown in Table 1. Compared to the initial 2014 water supply outlook, it is now projected that an additional 69,000 acre-feet would be withdrawn from groundwater reserves if additional water

<sup>1</sup> Santa Clara Valley Water District 2010 Urban Water Management Plan, <http://www.valleywater.org/Services/WaterSupplyPlanning.aspx>

**ADOPTED**

FEB 25 2014

**SUBJECT:** Update on 2014 Water Supply Outlook

Table 1. Estimated 2014 Water Supply and Use

Estimated Supplies (AF)	Jan. 28, 2014 Initial Outlook	Feb. 25, 2014 Updated Outlook
	Dry Conditions (90% exceedence)	Critically Dry Conditions (99% exceedence)
Local surface water	34,000	26,300
Natural groundwater recharge	47,100	38,600
Imported – District	149,000	106,200
Imported – Hetch Hetchy	57,000	44,000
Recycled water	23,000	23,000
<b>Total</b>	<b>310,100</b>	<b>238,100</b>
Estimated Use (AF)		
Groundwater pumping	173,200	201,200
Treated water deliveries--District	121,000	107,300
Surface water, SJWC treated water	5,000	300
Imported—Hetch Hetchy	57,000	44,000
Recycled water	23,000	23,000
<b>Total</b>	<b>379,200</b>	<b>375,800</b>
<b>Net from Groundwater Reserves (AF)</b>	<b>69,100</b>	<b>137,700</b>
<b>Estimated End-of-Year Groundwater Storage (AF)</b>	<b>273,900</b>	<b>205,300</b>

## B. Operational Challenges

### 1. Delta Water Quality

A primary objective of the District is continued delivery of safe, clean drinking water from its treatment plants. With critically dry conditions and limited storage available in Sacramento valley reservoirs, Delta outflow has not been sufficient to maintain water quality, which can effectively limit or eliminate imported water as a source of supply for the treatment plants. In late January and early February, concentrations of chloride, bromide and total dissolved solids increased substantially in the interior Delta, with Electroconductivity (EC), an indicator of salinity, exceeding standards set at Clifton Court in the south Delta. The elevated bromide concentrations associated with higher EC and high concentrations of total organic carbon are difficult to treat at the District's drinking water treatment plants, particularly if source water is also affected by algal growth in the south Delta. Treatment concerns include not only taste and odor issues, but elevated levels of disinfection byproducts that may be challenging to maintain below the maximum contaminant level (MCL). Staff is currently working with the retail water agencies and optimizing treatment processes to deal with these issues.

Following State Water Resource Control Board approval on January 31 of the Temporary Urgency Petition submitted by DWR and Reclamation, the Delta Cross Channel gates were opened for a week to allow more fresh water from the Sacramento River to flow into the interior Delta. The rainfall that occurred on February 7-10 also helped to improve water



Meeting Date: 5/27/14  
 Agenda Item No.: 4.1  
 Manager: J. Maher  
 Extension: 2073  
 Director: All

**SUPPLEMENTAL BOARD AGENDA MEMORANDUM**

**SUBJECT:** Update on 2014 Water Supply and Drought Response

**REASON FOR SUPPLEMENTAL MEMORANDUM:**

To allow for inclusion of the most current drought response information and include an additional recommendation\*.

**RECOMMENDATION:**

- A. Receive, review, and discuss updated information on 2014 water supply and drought response efforts;
- B. Authorize the Chief Executive Officer (CEO) to approve budget adjustments in FY14 and FY15 totaling up to \$500,000 from the Water Utility Operating and Capital Reserve to augment the Water Conservation Program and related outreach;
- \*C. Determine, by a four-fifths vote, that there is a need to continue the emergency action declared by the CEO on May 14, 2014, pursuant to Public Contract Code §22050 and District Resolution 05-67 in support of the California Aqueduct Reverse Flow Project.

**SUMMARY:**

The District's comprehensive drought response is being implemented through fifteen strategies grouped into four general categories: (A) water supply and operations; (B) water use reduction; (C) drought response opportunities; and (D) administrative and financial management. Highlights of new information for each strategy are included in Attachment 1 (May 2014 Drought Response Strategy Updates). The staff presentation (Attachment 2) for this month's update will focus on four key topics:

<b>Topic</b>		<b>Drought Response Strategy</b>
1	Water Use Reduction Program	#4, Reduce water use by 20%
2	Environmental Management of Raw Water Operations	#2, Manage and deliver raw water supplies
3	Untreated Surface Water Customers	#2, Manage and deliver raw water supplies
4	California Aqueduct Reverse Flow Project	#1, Secure imported water supplies

**SUBJECT:** Update on 2014 Water Supply and Drought Response

(05/27/14)

## **1. Water Use Reduction Program**

On January 31, 2014, the Board set a preliminary countywide water use reduction target of 10 percent, and on February 25, 2014, set the final target of 20 percent. Staff has been working with water retailers, municipalities and the county to increase water conservation efforts and public outreach, and implement other actions to reduce water use. As these efforts begin to take effect, preliminary water use data for the months of February and March indicate that cumulative countywide savings of approximately 12 percent were realized, compared to the same period in 2013. Water use and savings reports by retailer are included in Attachment 3. A summary of the District's new programs and updated conservation rebates is included in Attachment 4, and a summary of conservation programs and actions undertaken by water retailers and municipalities is included in Attachment 5.

On April 22, the Board approved a budget adjustment of \$250,000 to plan, develop and initiate a major summer conservation marketing campaign before July 1, 2014. At that time, staff informed the Board that additional funding up to \$500,000 would be needed in FY15 to fully implement the plan and launch the campaign through the summer months. Staff expected to make a subsequent budget recommendation in FY15. However, staff has learned that there is a need to secure media buys earlier than planned, and is now requesting CEO authority to approve budget adjustments in FY14 and FY15 totaling up to \$500,000 from the Water Utility Capital and Operating Reserve as needed to implement the summer conservation marketing campaign.

## **2. Environmental Management of Raw Water Operations**

Due to very limited local and imported surface water supplies, the District's managed groundwater recharge program is significantly curtailed this year. In total, only 25% of the amount normally released for groundwater recharge, or about 25,000 acre-feet, will be available for recharge this year. Dry conditions in creeks and recharge ponds and resulting impacts on aquatic species are a concern of fish and wildlife regulatory agencies, local municipalities and the general public who see these visible signs of the drought. The current public information fact sheets on "Reservoir and local stream conditions" and "Groundwater recharge pond maintenance" are included in Attachment 6.

At the April 22, 2014, Board meeting, a Board Member Request was made for "a report on the mortality of aquatic species in percolation ponds, streams and creeks as a result of the drought, and to include the feasibility of moving these species above reservoirs." (R-14-0016). The District has been working closely with the California Department of Fish and Wildlife (CDFW) and other regulatory agency staff to address fish and wildlife impacted by the drought. In normal rainfall years, District water utility operations provide aquatic habitat for native and non-native species alike. In drought conditions, aquatic habitats are impacted first and more severely than other habitats, causing some animals to migrate, change behavior, or die off. District biologists are providing stream condition reports to agency staff to assist in documenting the effects of the drought, but neither the District nor CDFW has an estimate of fish and wildlife losses. Over the years, many non-native species have colonized local streams, reservoirs and recharge ponds, sometimes through releases by the local community. Losses of these non-native species will likely benefit local fish and wildlife species that have evolved to withstand the climate extremes of their native habitat.

**SUBJECT:** Update on 2014 Water Supply and Drought Response

(05/27/14)

CDFW is the state agency responsible for managing local fish and wildlife resources and issuing appropriate permits to allow work in habitat areas and to rescue or relocate species when warranted. The widespread nature of the drought has made relocation of native species difficult to support, and as a result, CDFW has developed a policy that severely limits the instances where rescue or relocation of fish species can be approved (CDFW Departmental Bulletin No. 2013-04, Issued March 20, 2013). The permit approved by CDFW for the District's pond maintenance work will not include rescue or relocation of wildlife, with the exception of western pond turtles that may be present in Alamitos or Los Capitancillos ponds.

### **3. Untreated Surface Water Customers**

Due to very limited local and imported surface water supplies, on March 21, 2014, notices were sent to 72 water users that currently have District permits for delivery of untreated surface water from raw water pipelines informing them that service would be discontinued on May 1. The notice provided a process for agricultural and commercial water users to apply for extensions of time, if needed, to put in place alternate sources of supply. In total, the District received and granted 25 applications from agricultural and commercial water users for extension of service to June 30, 2014, including five golf courses in northern Santa Clara County and 15 agricultural accounts on the Half Road Lateral in south county (six accounts for parcels owned or leased by the Mariani family). Due to operational limitations on the Half Road Lateral, which is a privately owned system, extending service for agricultural water users essentially means that service is continuing for the whole system (38 accounts), but the amount provided during the 2-month extension will be 80 percent of metered 2013 water use and intended for agricultural use only. Staff is continuing to work with Half Road Lateral customers not only on the immediate issue of establishing an alternate supply, but on options for more viable long-term operation and management of this system.

The District also received a total of nine applications from non-commercial municipal and industrial accounts which did not meet the criteria for a time extension. Generally, these accounts use untreated surface water for domestic landscape irrigation. Over the years, several untreated surface water accounts have installed hydrants despite being informed that the District does not operate or maintain the raw water system in a manner that can be relied upon for fire protection, and that under the District's "Rules and Regulations for Delivery of Surface Water", the service is interruptible and at the user's risk. The turnouts for these accounts will remain unsecured, but water users are being informed that landscape irrigation and other non-qualifying uses must cease until further notice.

### **4. California Aqueduct Reverse Flow Project**

This District participates in the Semitropic Water Bank (Semitropic), which is located in Kern County, about 200 miles south of the Delta on the California Aqueduct (see location map). Because the District is located "upstream" of Semitropic, the return of banked water is normally accomplished by exchanges within the State Water Project (SWP): Semitropic pumps groundwater into the California Aqueduct for delivery to other SWP contractors downstream, and the District takes delivery of an equal amount of SWP water pumped from the Delta that would otherwise go to those contractors.

Neighborhood Update - May 2014

## Reservoir and local stream conditions



*Los Capitancillos groundwater recharge ponds in South San Jose are at its lowest level in years.*

### Lack of rainfall continues to affect creeks and reservoirs

To conserve water in the midst of one of the driest seasons on record, the Santa Clara Valley Water District is modifying its operations. Because of the lack of local rainfall and cut backs in water imported from state and federal water projects, groundwater recharge operations in ponds and creeks have been cut back to conserve drinking water supplies for use this summer.

A priority of the water district is continued delivery of safe, clean water from its drinking water treatment plants to local water providers and municipalities. Imported water typically provides more than 85 percent of the supply for the water district's three drinking water treatment plants. In dry and critically dry years, when local water is limited, up to 99 percent of treated water is from imported water sources.

To ensure adequate drinking water supplies through the summer, imported and local water is being stored in Anderson, Coyote and Calero reservoirs. Despite the few spring storms there has been little local runoff, and all other district reservoirs continue to drop to minimum storage levels. As a result water releases to creeks and ponds are being curtailed.

### Reservoir and creek conditions in your area

#### **Cupertino/Saratoga/Los Gatos area:**

- Releases from Stevens Creek Reservoir will provide limited flows in Stevens Creek until reservoir water levels fall below intake structures later in the year.
- Rodeo, Regnart, Calabazas and Saratoga creeks will remain dry until significant rainfall occurs.
- Los Gatos Creek flows will be reduced as water levels in Lexington Reservoir fall.
- McClellan, Page, Sunnyoaks, Budd, McGlincy, Oka and Camden ponds will go dry during the spring and are scheduled for maintenance this summer.

#### **South San Jose/Almaden area:**

- Alamos and Calero creeks will remain dry until significant rainfall occurs.
- Almaden Lake's elevation will continue to fall over the summer and water quality will decline in the lake.
- Los Capitancillos, Alamos and Guadalupe ponds will likely be dry by May and are scheduled for maintenance in May and June.

#### **East San Jose area:**

- Upper Penitencia Creek and most adjacent recharge ponds will remain dry until significant rainfall occurs.
- Piedmont, Capitol and Helmsley ponds will dry back this summer. Ponds at Penitencia Creek Park (City of San José), Penitencia Creek County Park (County of Santa Clara), and Overfelt Garden Park (City of San José) will not be supplied with water until drought conditions end.

#### **Gilroy/Morgan Hill/South San Jose area:**

- Releases of imported water to Coyote Creek and Madrone Channel are expected to continue at the current rate, but may be further reduced depending on water supply conditions.
- Releases of local water from Uvas and Chesbro dams will provide limited flows in Uvas and Llagas creeks, but expect drying creeks as the water in the reservoir is exhausted this summer.
- Main Avenue and San Pedro ponds will be dry by June and are scheduled for maintenance this summer.

continued on back »

## Wildlife impacts

Throughout the drought, the water district has worked closely with California Department of Fish and Wildlife (CDFW) to address fish and wildlife impacted by the drought. CDFW is the state agency that is responsible for managing local fish and wildlife resources and issuing appropriate permits to allow work in habitat areas and to rescue or relocate species when warranted.

In normal rainfall years, water supply operations in local streams and recharge ponds provide water and aquatic habitat for native and non-native species alike. It is district policy to conduct its water supply operations and maintenance activities in an environmentally sensitive manner, including reservoir releases, stream and pond recharge operations and maintenance.

When water is lacking, aquatic habitats are impacted first and more severely than other habitats, causing migration, behavior changes and die-off of some animals. Lack of water means wildlife become concentrated in any remaining suitable habitat, increasing competition for remaining resources and increasing the chances for disease outbreaks due to close contact.

The widespread nature of the drought has made relocation of any native species difficult to support and, as a result, CDFW has developed a policy that severely limits the instances where rescue or relocation of fish species can be approved.

Operations and recharge pond maintenance will not include rescue or relocation of wildlife from streams or ponds. There are many non-native species that have colonized local streams and reservoirs. The loss of non-native species will likely have a long term benefit to the local fish and wildlife that have evolved to withstand the climate extremes of their native habitat.

Unfortunately, these dry creek and pond conditions are occurring statewide. The water district will continue to coordinate with CDFW staff in addressing the drought effects on native and non-native species.



Guadalupe Creek during the week of March 17, 2014.

**Save Water. Save Money.**  
For water saving rebate programs, go to:  
[Save20Gallons.org/rebates](http://Save20Gallons.org/rebates)

Many Rebates Now Doubled!

[save20gallons.org](http://save20gallons.org)  
Santa Clara Valley Water District

**Drought Watch**  
Find out more about the 2014 drought at:  
<http://www.valleywater.org/drought2014>

**NORMAL**    **ALERT**    **SEVERE**    **CRITICAL**    **EMERGENCY**

Santa Clara Valley Water District  
PROTECTING YOUR FUTURE

Save Water. Save Money.  
Find out if you qualify for rebates and programs >>>

The Santa Clara Valley Water District  
...manages an integrated water conservation system that includes a variety of clean, safe water, best practices and distribution of resources on behalf of Santa Clara County's 1.8 million residents. The district maintains and distributes water to the community through a network of pipes and pumps. The district also provides water to the community through a network of pipes and pumps. The district also provides water to the community through a network of pipes and pumps.

**CONTACT US**  
For more information, contact the **Drought Hotline** at **(408) 630-2000**, or visit our website at [valleywater.org](http://valleywater.org) and use our **Access Valley Water** customer request and information system. With three easy steps, you can use this service to find out the latest information on district projects or to submit questions, complaints or compliments directly to a district staff person.

Follow us on:



/scvwd



/valleywater



/valleywater



To get eNews, email [info@valleywater.org](mailto:info@valleywater.org)

A monthly assessment of trends in water supply and use for Santa Clara County, California

## Outlook as of May 1, 2014

Severe drought conditions continue throughout California. With very little local watershed runoff, many of the District's 10 reservoirs are at less than 40% of their 20-year average storage. Many creeks and recharge ponds are drying as a result of the lack of surface water available. Anderson Reservoir is currently being filled with imported water to ensure adequate treatment plant supplies this summer and is expected to reach the maximum storage limit on May 5th. Both the federal Central Valley Project and State Water Project continue to face regulatory and water quality challenges due to limited Central Valley runoff, and this will continue to affect imported water deliveries to the county in coming months. On February 25th, the Board passed a resolution calling for retail water agencies, municipalities, and the county to implement mandatory measures as needed to reach a 20% water use reduction target in 2014. Achieving the 20% target will avoid groundwater dropping to the "Severe" range and ensure adequate reserves for 2015.

### Weather



Rainfall in San Jose

- Month of April = 0.67 inch
- Total-to-date = 6.10 inches or 44% of average to date  
(Rainfall year is July 1 to June 30)

May 1 Northern Sierra snowpack water content is about 7% of average for this date

### Local Reservoirs



- Total May 1 storage = 82,824 acre-feet\*
  - » 67% of 20-year average for this date
  - » 49% of total capacity
  - » 67% of restricted capacity storage (169,009 acre-feet total storage capacity limited by seismic restrictions to 122,924 acre-feet)
- Low storage levels in Chesbro, Guadalupe, Uvas, and Stevens Creek reservoirs at 9%, 12%, 13%, and 15% of their total capacities, respectively

\*Total includes approximately 34% imported water, including 13,200 acre-feet stored in April

### Imported Water



- 2014 State Water Project (SWP) and Central Valley Project (CVP) allocations:
  - » SWP allocation: 5% = 5,000 acre-feet (increased from Zero% to 5% on April 18)
  - » CVP allocations: 50% for Municipal and Industrial uses and Zero% for Irrigation for an approximate total of 65,000 acre-feet
- 2013 SWP and CVP estimated carryover supplies available for 2014: 31,227 acre-feet
- Reservoir storage information, as of May 1, 2014:
  - » Shasta Reservoir at 53% of capacity (61% of average for this date)
  - » Oroville Reservoir at 53% of capacity (65% of average for this date)
  - » San Luis Reservoir at 47% of capacity (52% of average for this date)
- Semitropic groundwater bank reserves: approximately 262,665 acre-feet as of May 1. Withdrawal of banked reserves may be limited by SWP operational constraints, with the available quantity to be determined
- Exchanges and transfers executed in FY14: continuing to pursue several potential agreements; one small transaction completed in April to support San Joaquin River flows
- Estimated Hetch Hetchy deliveries to Santa Clara County:
  - » Month of April = 2,900 acre-feet
  - » 2014 Total = 12,300 acre-feet, or 98% of the five-year average
  - » 2014 preliminary reduction = 10% announced by SFPUC on January 31

## Treated Water



- Below average demands of 6,500 acre-feet delivered in April
- This total is 74% of the five-year average for April
- Estimated year-to-date = 25,600 acre-feet or 87% of the five-year average

## Groundwater



- Groundwater Storage: Total storage at the end of 2014 is projected to be 208,000 acre-feet, which falls within Stage 3 (Severe) of the Water Shortage Contingency Plan. If the 20% water use reduction target set by the Board on February 25 is achieved, 2014 end-of-year storage will be within the range of Stage 2 (Alert) and near Stage 1 (normal)
- Santa Clara Plain:
  - » The April managed recharge estimate is 600 acre-feet. The year-to-date managed recharge estimate is 7,100 acre-feet, or 44% of the five-year average
  - » The April groundwater pumping estimate is 13,100 acre-feet. The year-to-date groundwater pumping estimate is 37,300 acre-feet, or 190% of the five-year average
  - » The groundwater level in Santa Clara Plain (San Jose) is about 22 feet lower than last year and 21 feet lower than the five-year average
- Coyote Valley:
  - » The April managed recharge estimate is 540 acre-feet. The year-to-date managed recharge estimate is 2,700 acre-feet, or 76% of the five-year average
  - » The April groundwater pumping estimate is 930 acre-feet. The year-to-date groundwater pumping estimate is 3,200 acre-feet, or 95% of the five-year average
  - » The groundwater level in Coyote Valley is about 3 feet lower than last year and 8 feet lower than the five-year average
- Llagas Subbasin:
  - » The April managed recharge estimate is 520 acre-feet. The year-to-date managed recharge estimate is 3,200 acre-feet, or 42% of the five-year average
  - » The April groundwater pumping estimate is 3,400 acre-feet. The year-to-date groundwater pumping estimate is 13,400 acre-feet, or 155% of the five-year average
  - » The groundwater level in Llagas Subbasin (San Martin) is about 21 feet lower than last year and 27 feet lower than the five-year average

## Conserved Water

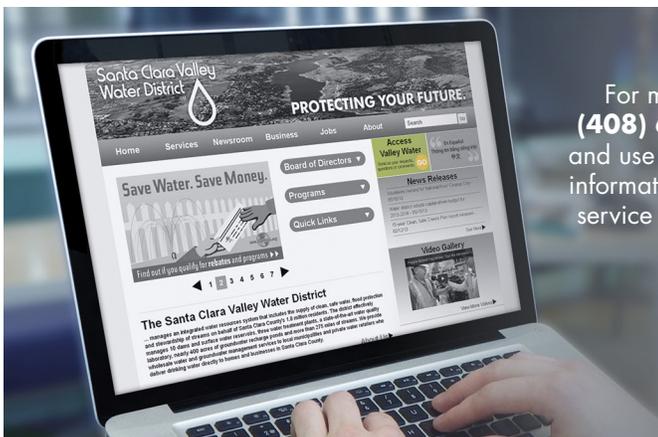


- Saved 56,000 acre-feet in FY13 from long-term program (baseline year is 1992)
- Long-term program goal is to save nearly 60,000 acre-feet in FY14
- Based on the District's Water Shortage Contingency Plan, the Board set a 2014 water use reduction target of 20%, in addition to long-term program savings
- District will be reporting on progress towards meeting the call for 20%, starting in May

## Recycled Water



- Estimated April 2014 production = 1,800 acre-feet (billed semi-annually)
- Estimated year-to-date = 5,700 acre-feet or 167% of the five-year average
- Silicon Valley Advanced Water Purification Center was completed and began delivery of high quality treated recycled water for blending with existing nonpotable water on March 25, 2014



## CONTACT US

For more information, contact **Customer relations** at **(408) 630-2880**, or visit our website at [valleywater.org](http://valleywater.org) and use our **Access Valley Water** customer request and information system. With three easy steps, you can use this service to find out the latest information on district projects or to submit questions, complaints or compliments directly to a district staff person.



To get eNews, email [info@valleywater.org](mailto:info@valleywater.org)

Follow us on:



/scvwd



/valleywater



/valleywater

SAFE, CLEAN WATER PROGRAM

CLEAN SAFE CREEKS PLAN

WATER CONSERVATION

- Rebates
  - Homes
  - Businesses
  - Landscaping
- Agriculture
- Free Conservation Items
- Events And Workshops
- Conservation Program Reports & Studies

GRANTS

TEACHERS & STUDENTS

ADOPT A CREEK

FIVE-YEAR CAPITAL IMPROVEMENT PROGRAM (CIP)

CREEKSIDE PROPERTY PROGRAM

COMPREHENSIVE WATER RESOURCES MANAGEMENT PLAN

DAM SAFETY PROGRAM

Programs > Water Conservation

# Water Conservation

In consideration of the worsening water supply outlook for Santa Clara County, the Santa Clara Valley Water District Board of Directors unanimously passed a resolution calling for mandatory measures to reach a water use reduction target equal to 20 percent of 2013 water use.

- [Read complete news release here](#)

PRINT Font Size: A A A

Related Information

- [Water Saver Home](#)
- [Water Use Efficiency Strategic Plan - Phase I](#)
- [Water Conservation Program Updates July 2014](#)

## New Rebate Increases:

Water conservation rebates have increased! As of April 22, certain rebate amounts for several key programs have doubled, while others have increased significantly. These increases are temporary, through September 30, 2014, and certain restrictions apply.

- **Landscape Conversion Rebate Program.** Rebates have increased to \$2 per square foot for converting high water using landscape to qualifying low water using landscape. The rebate amount within a cost-sharing partner area increased to \$3 to \$4 per square foot. For more information, please call the Water Conservation Hotline at (408) 630-2554. [Click here for more information.](#)
- **Irrigation Hardware Upgrades Rebate Program.** Several irrigation hardware rebates have increased, for dedicated landscape meters, flow sensors and hydrometers, and Weather-Based Irrigation Controllers. [Click here for more information.](#)
- **Graywater Laundry to Landscape Rebate Program.** Receive up to \$200 per residential site for properly connecting a clothes washer to a graywater irrigation system. [Click here for more information](#) or call the Water Conservation Hotline at (408) 630-2554 to schedule a pre-inspection.
- **Commercial Rebate Programs:** Several rebates for commercial facilities have increased, including the rebate for Connectionless Food Steamers, Commercial High-Efficiency Clothes Washers and the Custom/Measured Rebate Program. [Click here for more information.](#)

## Program Changes, As of January 1st:

As of January 1st, these programs were added or had their rebate increased:

- **NEW High Efficiency Toilet Rebate Program.** Replace your inefficient toilets and you may be eligible to receive up to \$125 per PREMIUM model High-Efficiency Toilet and up to \$50 per Non-PREMIUM High-Efficiency Toilet, no pre-inspection required. [Click here for more information.](#)
- **New rebate amounts for the Residential High-Efficiency Clothes Washer Rebate Program.** Purchase and install a qualifying high-efficiency clothes washer and you may be eligible to receive up to \$200 for a combined Water Agency and PG&E Rebate on a qualifying Energy Star Most Efficient clothes washer, or up to \$50 for a Water Agency Rebate on a qualifying CEE Tier 3 qualifying clothes washer. [Click here for more information.](#)
- **NEW Safe, Clean Water and Natural Flood Protection Program.** Water conservation research grants for agencies and organizations to study and pilot-test new and innovative water conservation programs and efficient technologies are now being offered. The primary goal is to identify water savings devices and strategies that can assist the district in meeting its long-term water savings goal of 98,500 acre-feet per year by 2030. [Click here for more information.](#)
- **NEW rebate amounts for the Submeter Rebate Program.** As of Jan 1, 2014, rebate amounts have increased for submeters. Mobile home parks and condominium complexes can receive up to \$150 per installed submeter for changing from a master water meter to individual water submeters. [Click here for more information.](#)



# TABLE OF CONTENTS

<b>Contact Sheet</b> .....	<b>ix</b>
<b>Abbreviations</b> .....	<b>x</b>
<b>Preface</b> .....	<b>1</b>
<b>Section 1: Plan Preparation</b> .....	<b>3</b>
<b>1.1 Agency Coordination</b> .....	<b>3</b>
<b>1.2 Public Participation</b> .....	<b>4</b>
<b>1.3 Plan Adoption, Submittal and Implementation</b> .....	<b>5</b>
<b>Section 2: System Description</b> .....	<b>7</b>
<b>2.1 SFPUC Water System Overview</b> .....	<b>7</b>
2.1.1. Historical Development of the RWS .....	8
2.1.2. Water Distribution .....	8
2.1.3. Water Treatment .....	11
2.1.4. Water Storage .....	12
<b>2.2 Service Area</b> .....	<b>14</b>
<b>2.3 Climate</b> .....	<b>14</b>
<b>2.4 Retail Customer Demographic and Economic Trends</b> .....	<b>14</b>
<b>2.5 Wholesale Customer Population &amp; Job Growth Estimates</b> .....	<b>18</b>
<b>Section 3: System Supplies</b> .....	<b>19</b>
<b>3.1 SFPUC Regional Water Supply Sources</b> .....	<b>19</b>
3.1.1 SFPUC Water System Improvement Program .....	19
3.1.2 Phased WSIP Variant .....	22
3.1.3 Future Regional Supplies .....	23
3.1.4. Summary of RWS Supplies .....	24
<b>3.2 SFPUC Retail Water Supply Sources</b> .....	<b>24</b>
3.2.1 Local Groundwater .....	24
3.2.2 Local Recycled Water .....	25
<b>3.3 Future Retail Water Supply Sources</b> .....	<b>27</b>
3.3.1 San Francisco Groundwater Supply Project .....	27
3.3.2 Recycled Water Supply Projects .....	27
3.3.3 Proposed Actions to Encourage Use of Recycled Water .....	29
3.3.4 Recycled Water Optimization Plan .....	29
3.3.5 Summary of Current and Future Retail Water Supplies .....	30
<b>3.4 Water Quality</b> .....	<b>31</b>

3.4.1	Quality of Regional Water System Supplies .....	31
3.4.2	Quality of Local Water Supplies .....	31
<b>Section 4:</b>	<b>System Demands .....</b>	<b>33</b>
<b>4.1</b>	<b>Retail Water Demands .....</b>	<b>33</b>
4.1.1	Current Retail Demand .....	34
4.1.2	Projected Retail Water Demands .....	35
4.1.3	Non-residential Water Demands .....	36
4.1.4	Water Demands of Lower Income Households .....	37
4.1.5	Methodology Used to Project Retail Water Demands .....	38
4.1.6	Differences between 2005 and 2010 Water Demand Projections .....	39
<b>4.2</b>	<b>Per Capita Water Use: Baseline and Target .....</b>	<b>40</b>
4.2.1	Baseline Daily Per Capita Water Use .....	40
4.2.2	Urban Water Use Target .....	43
4.2.3	Confirmation of Urban Water Use Target .....	43
4.2.4	Water Use Reduction Plan .....	45
<b>4.3</b>	<b>Wholesale Water Demands .....</b>	<b>45</b>
4.3.1	Wholesale Water Contractual Obligations and Demands .....	46
<b>Section 5:</b>	<b>Water Supply Reliability .....</b>	<b>49</b>
<b>5.1</b>	<b>RWS Supply Reliability .....</b>	<b>49</b>
5.1.1	Estimating the Frequency and Magnitude of SFPUC RWS Supply Deficiencies .....	50
5.1.2	SFPUC's Normal Year and Design Drought .....	50
<b>5.2</b>	<b>Dry Year Water Supply Options .....</b>	<b>51</b>
5.2.1	Restoration of Calaveras Reservoir Capacity .....	52
5.2.2	Restoration of Crystal Springs Reservoir Capacity .....	53
5.2.3	Regional Groundwater Storage and Recovery Project .....	53
5.2.4	Water Transfer with Modesto Irrigation District/Turlock Irrigation District .....	53
5.2.5	Summary of Dry Year Supplies .....	54
<b>5.3</b>	<b>Bay Area Regional Efforts to Improve Water Supply Reliability .....</b>	<b>55</b>
5.3.1	Desalination .....	56
5.3.2	Regional Interties .....	56
5.3.3	Bay Area Integrated Regional Water Management Plan .....	56
<b>5.4</b>	<b>Drought Response .....</b>	<b>57</b>
5.4.1	Past Experience with Water Shortages .....	57
5.4.2	Water Shortage Allocation Plan .....	58
5.4.3	Mechanisms to Determine Reductions in Water Use .....	63

5.4.4	Revenue and Expenditure Impacts During Water Shortages. . . . .	63
<b>5.5</b>	<b>Preparation for Catastrophic Water Supply Interruption . . . . .</b>	<b>63</b>
5.5.1	Emergency Preparedness Plans . . . . .	63
5.5.2	Emergency Drinking Water Planning . . . . .	64
5.5.3	Power Outage Preparedness and Response. . . . .	65
5.5.4	Capital Projects for Seismic Reliability and Overall System Reliability . . . . .	65
<b>5.6</b>	<b>Supply &amp; Demand Comparison of the Retail Water System . . . . .</b>	<b>66</b>
<b>5.7</b>	<b>Supply and Demand Comparison of the Wholesale Water System . . . . .</b>	<b>70</b>
<b>5.8</b>	<b>Future Actions Affecting Water Supply and Demand. . . . .</b>	<b>73</b>
<b>Section 6:</b>	<b>Demand Management Measures. . . . .</b>	<b>75</b>
<b>6.1</b>	<b>Introduction . . . . .</b>	<b>75</b>
<b>6.2</b>	<b>Demand Management BMPs . . . . .</b>	<b>76</b>
DMM A (BMP 3.1 & 3.2):	Water Survey Programs for Residential Customers . . . . .	78
DMM B (BMP 3.1):	Residential Plumbing Retrofit . . . . .	79
DMM C (BMP 1.2):	Metering with Commodity Rates for All New Connections and Retrofit of Existing Connections. . . . .	80
DMM D (BMP 1.3):	Water Loss Control . . . . .	80
DMM E (BMP 5):	Large Landscape Conservation Programs and Incentives . . . . .	81
DMM F (BMP 3.3):	HECW Financial Incentive Programs . . . . .	82
DMM G (BMP 2.1):	Public Information Programs . . . . .	83
DMM H (BMP 2.2):	School Education Programs . . . . .	84
DMM I (BMP 4):	Conservation Programs for CII Accounts . . . . .	85
DMM J (BMP 1.1.3):	Wholesale Agency Assistance Programs . . . . .	86
DMM K (BMP 1.4):	Conservation Pricing . . . . .	86
DMM L (BMP 1.1.1):	Water Conservation Coordinator. . . . .	87
DMM M (BMP 1.1.2):	Water Waste Prohibition. . . . .	87
DMM N (BMP 3.4):	WaterSense Specification Toilets & ULFT Replacement Program. . . . .	88
<b>6.3</b>	<b>Beyond BMPs and DMMs. . . . .</b>	<b>89</b>
<b>6.4</b>	<b>Regional Coordination . . . . .</b>	<b>89</b>
<b>Section 7:</b>	<b>Climate Change . . . . .</b>	<b>91</b>
<b>Section 8:</b>	<b>UWMP Checklist . . . . .</b>	<b>93</b>

## SECTION 4: SYSTEM DEMANDS

This section focuses on the projection of the SFPUC's water demands. Retail demands are based on recent demographic information and a detailed analysis of the SFPUC's retail water use characteristics. Wholesale Customer demands for SFPUC supplies are based on projections developed by Wholesale Customers. This section also presents the baseline and target per capita water consumption rate, as required by SB X7-7.

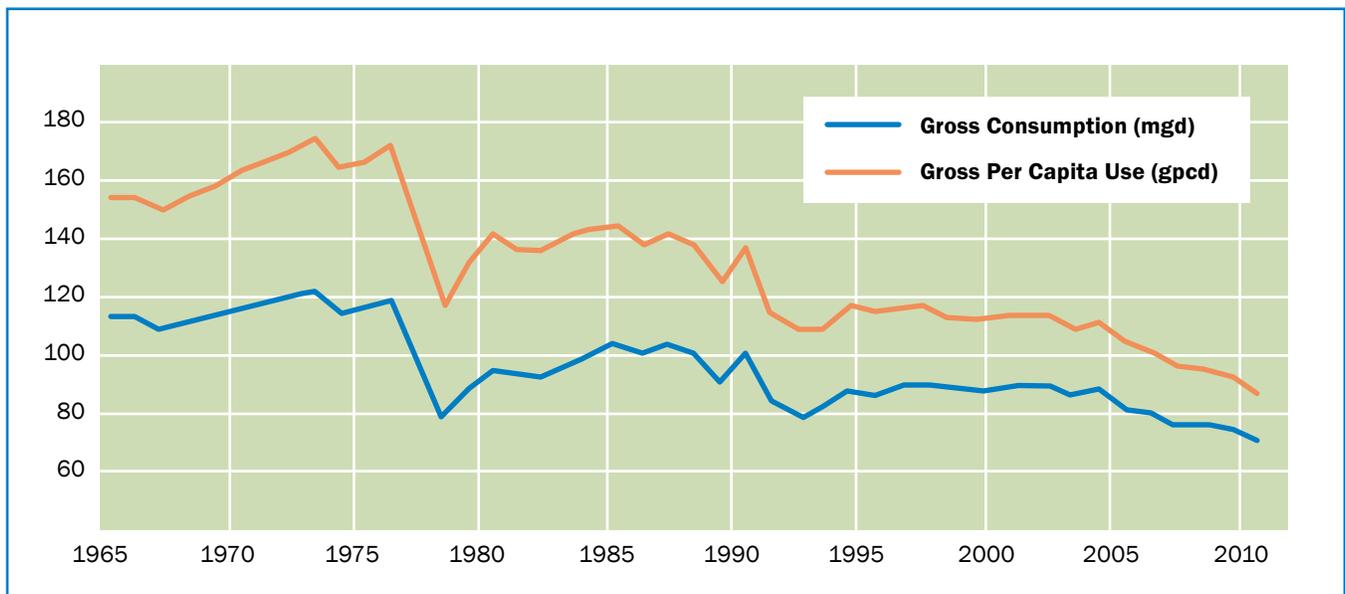
### 4.1 RETAIL WATER DEMANDS

Water use within San Francisco is currently below historic consumption. Both the total consumption and the per capita use of water have been on a general decline in San Francisco since the mid-1970s. Many factors have contributed to this reduction in water use, including significant changes to the mix of industrial and commercial businesses and their associated water demand, and the general characteristics of water use by San Francisco water customers. In particular, the severe droughts of 1976-77 and 1987-92, changes in plumbing codes, and conservation programs (either voluntarily embraced by residents and businesses or mandated by San Francisco), have apparently affected water demands.

**Figure 6** shows the historical record of retail water deliveries by San Francisco for the 1965 through 2010 period in terms of both total deliveries and gross per capita consumption (gallons per capita per day, or gpcd).

While the gross per capita consumption is not a true measure of the water used by an individual (since it includes water use by all categories of customers, e.g., industrial, commercial and losses), it does provide insight when comparing water use among regions. The current per capita consumption rate by San Francisco in-City water customers is 85.6 gpcd, one of the lowest in the state.

**Figure 6: Historical San Francisco Water Consumption**



### 4.1.1 Current Retail Demand

All of the SFPUC's Retail Customers have been metered since 1916. In 2010, total SFPUC retail water use was 77.7 mgd. Of this demand, in-City Retail Customers used approximately 71 million gallons per day (mgd)<sup>10</sup>. Water use by suburban Retail Customers totaled approximately 4.1 mgd, and groundwater irrigation use was approximately 2.2 mgd.

Water use in 2010 was lower than expected. This decreased demand can be attributed to three main reasons. First, the very wet spring and cool summer California experienced in 2010 depressed urban water demand across the state. Second, 2008 and 2009 were both dry and the SFPUC asked its customers to reduce their water consumption by 10%. While rainfall returned to normal or above normal in 2010, the reductions in water use have continued. Third, the sharp economic decline which started in 2008 pushed down commercial and industrial demands. When preparing the 2005 UWMP, the number of jobs in 2010 was projected to be 692,420. According to the 2010 estimates from the California Employment Development Department, the number of jobs in 2010 was closer to 545,000.

**Residential Water Use:** Single-family units comprise approximately 32% of the total households in San Francisco, and use approximately 40% of the total water delivered to the residential sector. The remainder of residential water (60%) is used by multi-family units such as apartments.

Combined, the single-family and multi-family residential sectors have a current per capita consumption rate of approximately 50 gpcd. Due to San Francisco's moderate climate and high density housing, residential water use is used almost entirely indoors. For multi-family units, the average outdoor water use is considered negligible. Outdoor water use makes up less than 10% of single-family residential uses, on average.

**Non-residential Water Use:** Non-residential water use accounts for approximately 30% of San Francisco's retail water demands. This includes all sectors of water users not designated as residential, such as manufacturing, transportation, trade, finance, and government employment sectors, and the large services sector.

**Unaccounted for Water Loss:** Unaccounted for Water Loss represents both unbilled authorized consumption (including metered high pressure fire fighting consumption, unmetered main flushing, street cleaning and dust control and low pressure fire hydrant use) and unbilled unauthorized consumption (including water lost to the system through all types of leaks, breaks and overflows). These losses are assumed to be approximately 6.9% of total in-City demand. Meter under-registration is also considered unbilled unauthorized consumption and is captured in the demand calculations for each billing sector. It is assumed that meter under-registration is 2.2% of residential demand and 2.1% of non-residential demand. Total loss in the City due to meter under-registration, unbilled authorized consumption and unbilled unauthorized consumption is approximately 9% of in-City demand.

<sup>10</sup> This only refers to in-City retail demand, not total retail demand (which includes Retail Customers outside of the city and county boundary, such as Lawrence Livermore National Laboratory), and this does not include groundwater.

**Table 27: SFPUC Retail Water Shortage Stages of Action**

STAGE	ACTIONS	TRIGGER PT. (% SYSTEM SHORTAGE)	TARGET WATER USE REDUCTION (%)
<b>1 - Voluntary</b>	<ul style="list-style-type: none"> <li>Voluntary rationing request of customers</li> <li>Customers are alerted to water supply conditions</li> <li>Remind customers of existing water use prohibitions</li> </ul>	10-20%	5 - 10%
	<ul style="list-style-type: none"> <li>Customers are alerted to water supply conditions</li> <li>Remind customers of existing water use prohibitions</li> </ul>		
	<ul style="list-style-type: none"> <li>Education on, and possible acceleration of, incentive programs (e.g., toilet rebates)</li> </ul>		
<b>2 - Mandatory</b>	<ul style="list-style-type: none"> <li>All Stage 1 actions implemented</li> </ul>	21-50%	11 - 20%
	<ul style="list-style-type: none"> <li>All customers receive an “allotment” of water based on the Inside/Outside allocation method (based on base year water usages for each account)</li> </ul>		
	<ul style="list-style-type: none"> <li>Water use above the “allocation” level will be subject to excess use charges, installation of flow restrictor devices and shut-off of water</li> </ul>		
<b>3 - Mandatory</b>	<ul style="list-style-type: none"> <li>Same actions as in Stage 2 with further reduced allocations</li> </ul>	>50%	>20%

**Table 28** summarizes potential prohibitions that may be enforced during a drought. **Appendix E** discusses various measures employed during the 1987-92 drought in an attempt to achieve a 45% reduction in Retail Customer demands (as applied to the pre-drought demand). These measures included absolute limitations on water use based on residential customer classification and a proportion of historical use within the non-residential sectors. Although not anticipated to be required in the near-term, San Francisco would employ similar procedures to accommodate system-wide water shortages in excess of 20%, if necessary.

The Retail Water Shortage Allocation plan is provided in **Appendix F**.

**Table 28: Potential Prohibitions That May Be Enforced During a Drought**

#	WATER SHORTAGE CONTINGENCY – MANDATORY PROHIBITIONS <sup>1</sup>	STAGE
1	Water waste, including but not limited to, any flooding or runoff into the street or gutters, was prohibited.	2, 3
2	Hoses could not be used to clean sidewalks, driveways, patios, plazas, homes, businesses, parking lots, roofs, awnings or other hard surfaces areas.	2, 3
3	Hoses used for any purpose had to have positive shutoff valves.	2, 3
4	Restaurants served water to customers only upon request.	2, 3
5	Potable water was not to be used to clean, fill or maintain levels in decorative fountains.	2, 3
6	Use of additional water was not allowed for new landscaping or expansion of existing facilities unless low water use landscaping designs and irrigation systems were employed.	2, 3
7	Water service connections for new construction were granted only if water saving fixtures or devices were incorporated into the plumbing system.	2, 3
8	Use of potable water for consolidation of backfill, dust control or other non-essential construction purposes was prohibited.	2, 3
9	Irrigation of lawns, play fields, parks, golf courses, cemeteries, and landscaping of any type with potable water would be reduced by at least the amount specified for outside use in the adopted rationing plan.	2, 3
10	Verified water waste as determined by the Water Department would serve as prima facie evidence that the allocation assigned to the water account is excessive; therefore, the allocation was subject to review and possible reduction, including termination of service.	2, 3
11	Water used for all cooling purposes was to be recycled.	2, 3
12	The use of groundwater and/or reclaimed water for irrigation of golf courses, median strips, and similar turf areas was strongly encouraged.	2, 3
13	The use of groundwater and/or reclaimed water for street sweepers/washers was strongly encouraged.	2, 3

1. Prohibitions prescribed in the 1987-92 drought that **may be** enforced during a future drought.

**Wholesale Customer Water Shortage Plan (Tier 2 Drought Implementation Plan, or DRIP):**

Section 3.11.C of the WSA authorizes the Wholesale Customers to adopt a methodology for allocating the collective wholesale allocation among the individual Wholesale Customers. In 2000, the Wholesale Customers adopted the Interim Water Shortage Allocation Plan among Suburban Customers, which details how the SFPUC water allocated to wholesale customers collectively was to be allocated to each individual Wholesale Customer. The Tier 2 Drought Implementation Plan (DRIP), which was adopted by the Wholesale Customers, provides an update to the 2000 Interim Water Shortage Allocation Plan Among Suburban Customers. The allocation included in the DRIP is based on a formula that takes two primary factors into account: (1) each agency’s Supply Assurance from SFPUC, with certain exceptions, and (2) each agency’s purchases from SFPUC during the 3 years preceding adoption of the Plan. **Appendix G** contains a copy of the Tier 1 WSAP.

## Save Resources and Money



### Residential Toilet

Single and multi-family residents are eligible for cash rebates when they replace their high-flow toilets with qualifying high-efficiency toilets.

#### More Rebates and Incentives

- Rainwater Harvesting
- Commercial Toilet
- Commercial Washer
- Commercial Equipment Grants



### Residential Washer

Residential customers can receive a cash rebate for the purchase of select high-efficiency clothes washers.



### Solar

Applicable to commercial, industrial and other general uses served through a separate meter or battery of meters.

- Direct High-Efficiency Toilet Installation
- Commercial Urinal
- Commercial Solar



### Laundry-to-Landscape Graywater Program

Use your clothes washer water for irrigation! For just \$5 you can purchase a laundry-to-landscape graywater starter kit that includes a 3-way valve, piping, fittings, and more. [Click here for more information!](#)

SHARE THIS PAGE

- [About](#)

## [Menu](#)

- [QUEST](#)
- [Science on the SPOT](#)

## [Science | KQED Public Media for Northern CA](#)

Explore award-winning multimedia coverage of science and environment news, trends and events from the Bay Area and beyond

# Record Drought Could Hurt Water Quality

[Lauren Sommer](#), [KQED Science](#) | February 11, 2014 | [1 Comment](#)

- 
- Share:
- 
- 
- 
- 
- 
- 
- 



Low water levels in the reservoir behind Shasta Dam in November. (Molly Samuel/KQED)

This weekend's heavy rainfall was a welcome sight, but it wasn't enough to end California's record drought. State officials are still facing tough choices about how to make the low water supply last through the year.

But with little water in streams and rivers, declining water quality could be an even bigger challenge, potentially raising problems for drinking water and causing harmful algal blooms.

State officials made their [first major water quality decision](#) at the end of January, ordering that reservoir operators in Northern California limit water releases from dams. About 144,000 acre-feet of water will be held back this month, water that's normally required to flow into rivers and the [Sacramento-San Joaquin Delta](#).

The freshwater will be used later in the year to keep seawater away from drinking water intakes. The Delta is where freshwater from rivers mixes with saltwater from San Francisco Bay. When there isn't enough freshwater pushing against the Bay's tides, saltwater creeps into the Delta, where canals and aqueducts draw water that

supplies 25 million Californians.

“Failing to take this action could result in our reservoirs running out of water later in the year, which means no available water to prevent saltwater intrusion in the Delta,” said Mark Cowin of the Department of Water Resources. “That would result in ruined water supplies both in the Delta and south of the Delta and major environmental impacts.”

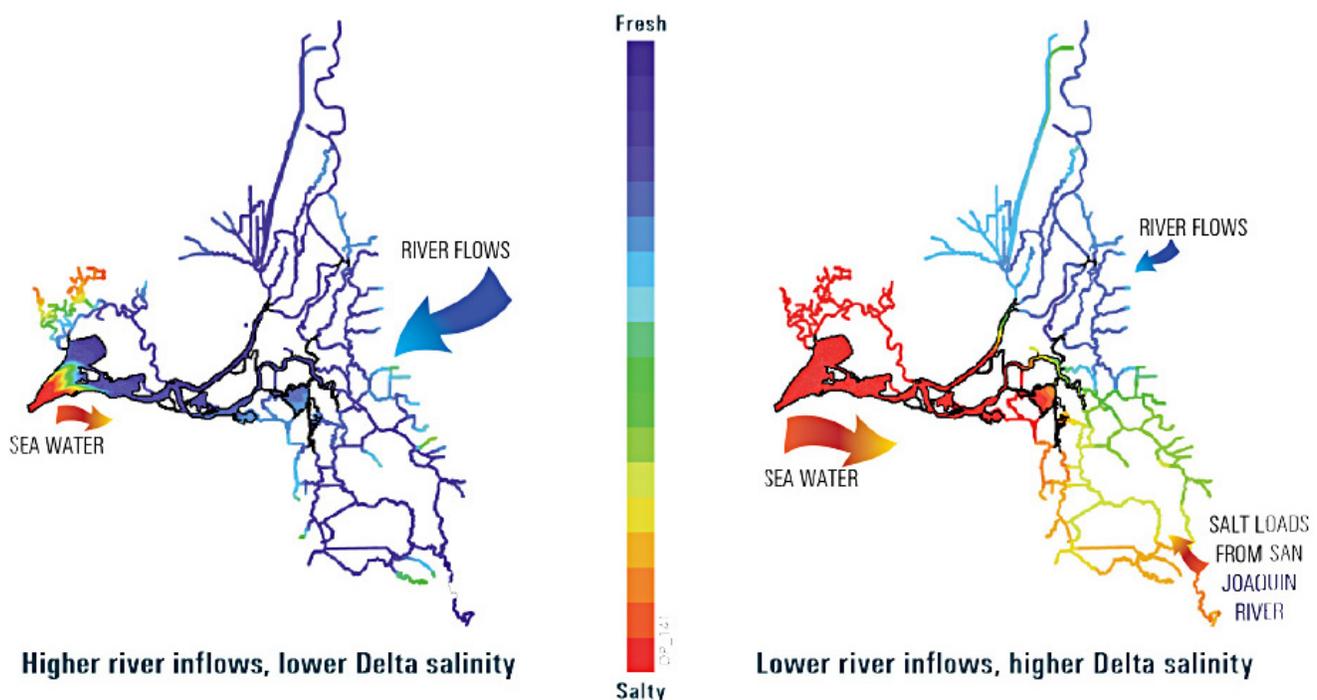
### Challenges for Water Districts

Even beyond saltwater intruding, water quality in the Delta is likely to suffer due to salty agricultural runoff, which is concentrated as the slow-moving water evaporates.

“The San Joaquin River at this point is primarily agricultural drainage and wastewater treatment effluent,” explained William Fleenor of UC Davis’s Center for Watershed Sciences. “Those concentrations will be in the Delta and we won’t be flushing them out as fast.”

Water districts that rely on the Delta for drinking water say it’s a cause for concern.

“We’re watching salinity levels very closely,” said Jennifer Allen, spokesperson for the Contra Costa Water District.



Seawater (in red) from San Francisco Bay pushes into the Delta when freshwater from rivers is low (blue). (Resource Management Associates, cited in Delta Plan)

[Contra Costa Water District](#) gets 100 percent of its supply from the Delta and serves 500,000 people in Antioch, Concord, Martinez and Pittsburg. The district withdraws that water through the Contra Costa Canal, which taps into the Delta not far from the saltwater-freshwater mixing zone.

During the 1976-77 drought, salt levels in [their water exceeded public health limits](#), prompting water rationing

orders.

The district has since built the [Los Vaqueros Reservoir](#), which stores higher quality water from the wet months that can be blended with lower quality water coming from the Delta in dry months.

That's something the district normally does, but "what's different this year is that we've notice the salt levels rising earlier than normal," said Allen. Los Vaqueros Reservoir is in relatively good shape this year, holding 79 percent of its storage capacity.

The poor water quality could also reach massive pumps in the South Delta that feed water to the Bay Area, Central Valley and Southern California. That includes Santa Clara County and East Bay cities like Fremont and Livermore. But officials have announced that very little water will be delivered through that system, simply because of the dry conditions.

Water treatment plants are built to handle salt, as well as other contaminants like bromide and organic carbon, but poor water quality raises their operating costs.

"It'll cost them more to treat," said Fleenor. "It's quite expensive to remove chloride"

Water quality problems are only expected to get worse with sea level rise, which would push saltwater farther into the Delta. A UC Davis study found that [water treatment costs could more than double](#) with a one-foot rise in sea level.

## Effects on Agriculture

More on Water:



## [Sacramento-San Joaquin Delta](#)



## [Drought Watch 2014](#)



## [What is California's Delta?](#)

Farmers and residents living in the Delta itself also have an eye on their water supply.



RECEIVED

JUN 02 2014

WATER RESOURCES PLANNING DIV.

Reference 39



EDMUND G. BROWN JR.  
GOVERNOR



MATTHEW RODRIGUEZ  
SECRETARY FOR  
ENVIRONMENTAL PROTECTION

**State Water Resources Control Board**

May 27, 2014

EAST BAY MUNICIPAL UTILITY DISTRICT  
PO BOX 24055 MS 901  
OAKLAND, CA 94623

In Regards to Water Right(s): S020476, S020477

**NOTICE OF UNAVAILABILITY OF WATER AND IMMEDIATE CURTAILMENT FOR THOSE DIVERTING WATER IN THE SACRAMENTO AND SAN JOAQUIN RIVER WATERSHEDS WITH A POST-1914 APPROPRIATIVE RIGHT**

On January 17, 2014, Governor Edmund G. Brown, Jr. proclaimed a State of Emergency (Proclamation) to address the record dry conditions around the State. On the same day, as directed by the Proclamation, the State Water Resources Control Board (State Water Board) issued a statewide notice of water shortages and potential for future curtailment of water right diversions.

**Curtailment of Post-1914 Water Rights:**

Based upon the most recent reservoir storage and inflow projections, along with forecasts for future precipitation events, the State Water Board has determined that the existing water supply in the Sacramento and San Joaquin River watersheds is insufficient to meet the needs of all water rights holders. With this notice, the State Water Board is notifying all holders of post-1914 appropriative water rights within the Sacramento and San Joaquin River watersheds of the need to immediately stop diverting under their post-1914 water rights, with the exceptions discussed below. This condition of curtailment will continue until water conditions improve. Even if there is water physically available at your point of diversion, that water is necessary to meet senior water right holders' needs or is water released from storage that you are not entitled to divert. If precipitation occurs in the following weeks or months, you should not commence diversion before being notified by the State Water Board that water is legally available for diversion under your priority of right.

Permission to initiate diversions during or following significant rainfall events may be posted at: [http://www.waterboards.ca.gov/waterrights/water\\_issues/programs/drought/index.shtml#notices](http://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/index.shtml#notices). You can get immediate email updates from the State Water Board about these notices by subscribing to "Drought Updates" at: [http://www.waterboards.ca.gov/resources/email\\_subscriptions/](http://www.waterboards.ca.gov/resources/email_subscriptions/)

**Compliance Certification Required:**

Curtailed post-1914 diverters are required to document receipt of this notice by completing an online Curtailment Certification Form (Form) within seven days. The Form confirms cessation of diversion under the specific post-1914 water right, and, if applicable, identifies the alternate water supply to be used in lieu of the curtailed water right. Completion of the Form and identification of alternate rights can avoid unnecessary enforcement proceedings.

FELICIA MARCUS, CHAIR | THOMAS HOWARD, EXECUTIVE DIRECTOR

Please complete the Form for each post-1914 water right identified through this curtailment at:  
[http://www.waterboards.ca.gov/waterrights/water\\_issues/programs/ewrims/curtailment/](http://www.waterboards.ca.gov/waterrights/water_issues/programs/ewrims/curtailment/)

If you are unable to complete the form online, you should download the Form at:  
[http://www.waterboards.ca.gov/waterrights/water\\_issues/programs/ewrims/curtailment/curtailment\\_certification\\_form.pdf](http://www.waterboards.ca.gov/waterrights/water_issues/programs/ewrims/curtailment/curtailment_certification_form.pdf)  
and email your response to: [SWRCB-Curtailment-Certification@waterboards.ca.gov](mailto:SWRCB-Curtailment-Certification@waterboards.ca.gov).

**Warning of Potential Future Curtailment of Senior Rights:**

You may have received this notice because the State Water Board's records show you divert water under a riparian or pre-1914 water right. As such, it is important that you conserve water due to declining supplies. If current conditions persist, the State Water Board may curtail some pre-1914 and riparian water rights in the near future. If you are a riparian or pre-1914 water right holder located downstream of major reservoir operations (such as the Central Valley Project or State Water Project) which are releasing water from storage and you do not have a contract or transfer order authorizing diversion of the released water, you are not permitted to divert the released water quantity.

**Exceptions to Curtailment:**

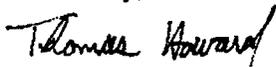
If your post-1914 diversion is your only source for human health and safety purposes, you may contact the State Water Board with information supporting that there is no other available supply and maximum conservation has been implemented. The State Water Board may be able to assist with identifying alternatives on a case-by-case basis. Additionally, if your diversion is for hydroelectric generation and all water diverted is returned to the stream, you may continue to divert under your post-1914 permit or license. If you continue to divert under either of the above circumstances, you must identify that on the Form and provide the information requested.

**Potential Enforcement:**

Those who are found to be diverting water beyond what is legally available to them may be subject to administrative fines, cease and desist orders, or prosecution in court. The State Water Board may levy fines of \$1,000 per day of violation and \$2,500 for each acre-foot diverted or used in excess of a valid water right. (See Water Code, §§ 1052, 1055.) Additionally, if the State Water Board issues a Cease and Desist Order against an unauthorized diversion, violation of any such order can result in a fine of \$10,000 per day. (See Water Code, §§ 1831, 1845.)

The State Water Board is encouraging diverters to work together to reach local voluntary agreements that not only provide solutions that help local communities with water shortages, but also prevent impacts to other legal users of water and do not cause unreasonable effects on fish and wildlife. If you have any questions, please call our Curtailment Hotline at (916) 341-5342, contact us by email at: [SWRCB-Curtailment-Certification@waterboards.ca.gov](mailto:SWRCB-Curtailment-Certification@waterboards.ca.gov), or review our drought year webpage at:  
[http://www.waterboards.ca.gov/waterrights/water\\_issues/programs/drought/index.shtml](http://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/index.shtml)

Sincerely,



Thomas Howard  
Executive Director

Water-Data Report 2013

**11162570 San Gregorio Creek at San Gregorio, CA**

San Gregorio Creek Basin

LOCATION.--Lat 37°19'33", long 122°23'08" referenced to North American Datum of 1927, San Mateo County, CA, Hydrologic Unit 18050006, in San Gregorio Grant, on right bank, at downstream side of bridge on Stage Road (Old Coast Highway), 0.1 mi south of town of San Gregorio, and 1.4 mi upstream from mouth.

DRAINAGE AREA.--50.9 mi<sup>2</sup>.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--October 1969 to September 1994, May 2001 to September 2005, July 2007 to current year.

SEDIMENT DATA: Water years 1986, 1990-1993.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 11.40 ft above NGVD of 1929.

REMARKS.--Records rated good except for flows below 5 ft<sup>3</sup>/s, which are rated fair. No regulation or known diversion upstream from station. Low flow affected by domestic use.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,910 ft<sup>3</sup>/s, Jan. 4, 1982, gage height, 21.28 ft, from rating curve extended above 560 ft<sup>3</sup>/s, on basis of contracted-opening measurement of peak flow; no flow for many days in some years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 22, 1955, reached a stage of 15.6 ft, from floodmarks, discharge, 3,620 ft<sup>3</sup>/s, based on contracted-opening measurement of peak flow.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft<sup>3</sup>/s and (or) maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Dec 2	1315	3,540	16.14
Dec 23	1830	*4,960	*18.66

## 11162570 San Gregorio Creek at San Gregorio, CA—Continued

**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013**  
**DAILY MEAN VALUES**

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	1.1	1.8	119	69	16	11	9.5	4.8	3.1	1.7	0.72	0.20
2	0.90	3.1	918	60	15	10	9.8	4.0	3.0	1.3	0.49	0.49
3	0.71	2.5	169	52	15	10	9.2	3.9	3.0	1.2	0.51	0.34
4	0.41	1.8	64	47	15	10	14	3.8	2.9	1.3	0.88	0.34
5	0.45	1.6	133	44	15	10	14	4.0	3.0	1.4	0.95	0.13
6	0.45	1.4	80	52	14	14	11	4.1	3.1	1.3	0.79	0.00
7	0.54	1.3	49	43	14	12	11	4.1	3.1	1.4	0.68	0.01
8	0.64	1.3	36	39	16	21	11	4.1	3.1	1.2	0.87	0.03
9	0.54	1.3	29	37	15	15	11	4.1	2.9	0.97	1.4	0.10
10	0.55	1.6	24	37	14	12	9.6	4.1	2.7	0.95	1.5	0.03
11	0.80	1.5	20	34	13	11	9.0	4.2	2.8	1.2	1.3	0.23
12	0.99	1.4	25	32	13	11	8.8	4.3	2.7	1.1	1.4	0.15
13	1.2	1.4	21	30	13	10	8.6	4.2	2.4	1.2	0.65	0.01
14	1.1	1.4	17	28	12	10	8.3	3.9	2.3	1.5	0.64	0.08
15	1.1	1.3	16	26	12	9.8	8.6	3.9	2.3	1.5	0.43	0.23
16	1.1	1.3	17	26	12	9.7	8.1	4.0	2.1	1.2	0.96	0.20
17	0.86	5.6	45	25	12	9.5	7.8	4.0	1.8	1.3	0.57	0.12
18	0.77	18	42	24	12	9.4	7.3	3.3	1.6	1.4	0.58	0.09
19	0.85	7.7	29	23	15	9.2	6.9	3.4	1.5	1.4	0.79	0.12
20	0.84	4.8	24	22	17	9.3	6.5	3.6	1.5	1.6	0.34	0.13
21	0.85	18	82	21	13	9.3	6.5	3.3	1.5	1.6	0.39	0.57
22	2.0	8.8	625	20	12	9.2	6.3	3.1	1.5	1.2	0.26	3.2
23	4.2	5.2	1,730	20	12	8.8	6.2	3.2	1.7	1.1	0.13	1.8
24	3.3	4.2	689	20	12	8.4	6.3	3.1	2.4	0.92	0.15	0.93
25	2.5	4.0	315	19	11	8.4	6.3	3.2	3.0	0.75	0.33	0.67
26	2.4	3.7	427	19	11	8.1	6.3	3.3	2.9	0.79	0.50	0.40
27	2.2	3.5	230	18	11	7.9	6.3	3.2	2.9	0.51	0.46	0.29
28	1.8	24	144	17	10	7.8	6.3	3.5	2.5	1.0	0.39	0.29
29	1.6	15	185	17	---	7.8	5.9	3.6	2.2	1.3	0.06	0.22
30	1.2	249	107	16	---	7.8	5.0	3.4	2.1	0.69	0.17	0.20
31	1.2	---	83	16	---	9.0	---	3.2	---	0.59	0.19	---
<b>Total</b>	39.15	397.5	6,494	953	372	316.4	251.4	115.9	73.6	36.57	19.48	11.60
<b>Mean</b>	1.26	13.2	209	30.7	13.3	10.2	8.38	3.74	2.45	1.18	0.63	0.39
<b>Max</b>	4.2	249	1,730	69	17	21	14	4.8	3.1	1.7	1.5	3.2
<b>Min</b>	0.41	1.3	16	16	10	7.8	5.0	3.1	1.5	0.51	0.06	0.00
<b>Ac-ft</b>	78	788	12,880	1,890	738	628	499	230	146	73	39	23

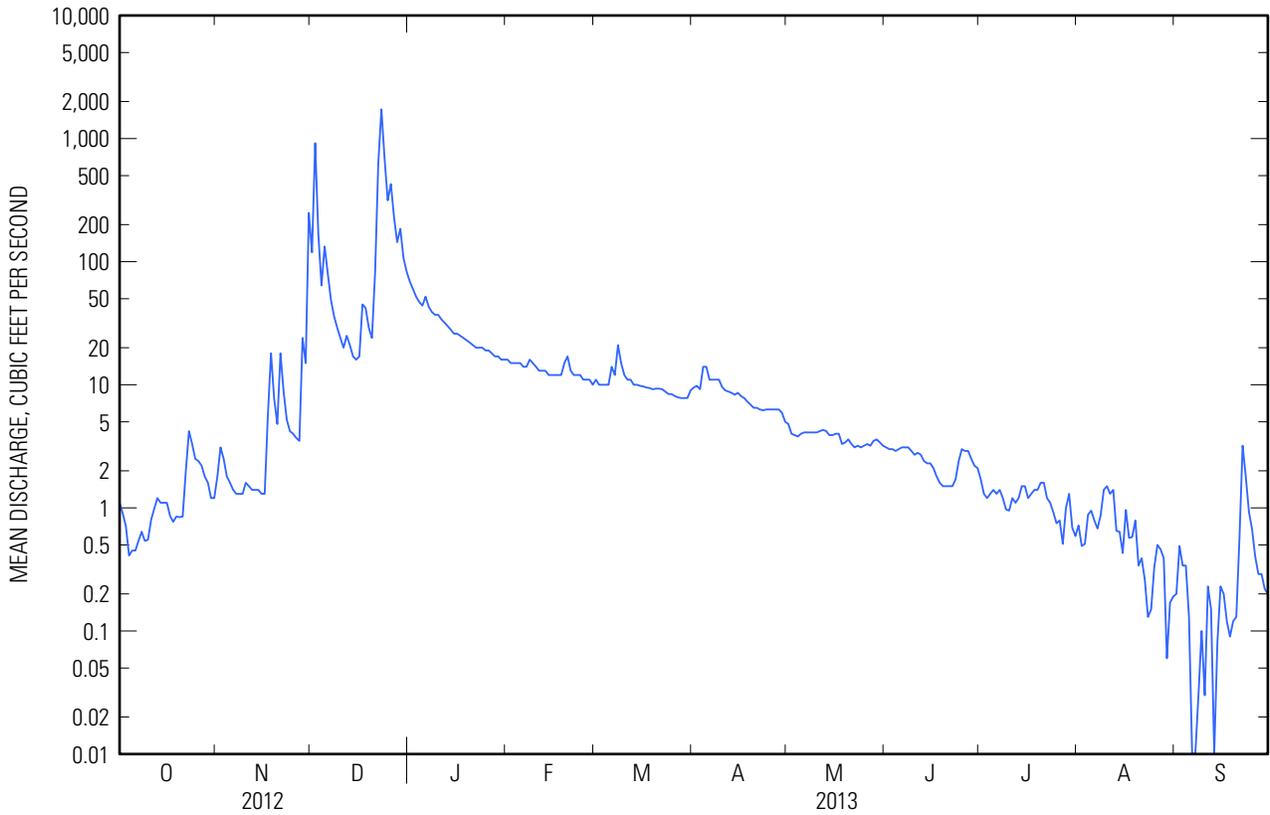
**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 2013, BY WATER YEAR (WY)**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	3.01	19.8	55.7	84.3	96.0	86.9	39.7	12.6	6.09	3.02	1.65	1.25
<b>Max</b>	11.6	162	297	345	379	432	259	68.5	20.5	11.7	6.68	4.46
<b>(WY)</b>	(1984)	(1973)	(1984)	(1982)	(1986)	(1983)	(1982)	(1983)	(1982)	(1974)	(1982)	(1983)
<b>Min</b>	0.00	0.71	1.70	1.17	2.21	2.98	1.05	1.42	0.35	0.02	0.00	0.00
<b>(WY)</b>	(1978)	(1977)	(1977)	(1991)	(1977)	(1977)	(1977)	(1977)	(1981)	(1988)	(1977)	(1977)

11162570 San Gregorio Creek at San Gregorio, CA—Continued

SUMMARY STATISTICS

	Calendar Year 2012		Water Year 2013		Water Years 1970 - 2013	
<b>Annual total</b>	14,353.47		9,080.60			
<b>Annual mean</b>	39.2		24.9		33.9	
<b>Highest annual mean</b>					111	1983
<b>Lowest annual mean</b>					1.16	1977
<b>Highest daily mean</b>	1,730	Dec 23	1,730	Dec 23	4,120	Jan 4, 1982
<b>Lowest daily mean</b>	0.41	Oct 4	0.00	Sep 6	0.00	Aug 11, 1972
<b>Annual seven-day minimum</b>	0.51	Oct 4	0.08	Sep 5	0.00	Aug 11, 1972
<b>Maximum peak flow</b>			4,960	Dec 23	7,910	Jan 4, 1982
<b>Maximum peak stage</b>			18.66	Dec 23	21.28	Jan 4, 1982
<b>Instantaneous low flow</b>					0.00	Sep 16, 1992
<b>Annual runoff (ac-ft)</b>	28,470		18,010		24,580	
<b>10 percent exceeds</b>	84		29		65	
<b>50 percent exceeds</b>	5.1		3.6		4.9	
<b>90 percent exceeds</b>	0.87		0.44		0.35	



Reference 41

```
# ----- WARNING -----
#
# The data you have obtained from this automated U.S. Geological Survey database
# have not received Director's approval and as such are provisional and subject to
# revision. The data are released on the condition that neither the USGS nor the
# United States Government may be held liable for any damages resulting from its
# use.
# Additional info: http://waterdata.usgs.gov/nwis/?provisional
#
# File-format description: http://waterdata.usgs.gov/nwis/?
# tab_delimited_format_info
# Automated-retrieval info: http://help.waterdata.usgs.gov/faq/automated-retrievals
#
# Contact: gs-w_support_nwisweb@usgs.gov
# retrieved: 2014-07-11 16:54:54 EDT (sdww02)
#
# Data for the following 1 site(s) are contained in this file
# USGS 11162570 SAN GREGORIO C A SAN GREGORIO CA
# -----
```

```
# Data provided for site 11162570
# DD parameter statistic Description
# 01 00060 00003 Discharge, cubic feet per second (Mean)
```

```
# Data-value qualification codes included in this output:
# A Approved for publication -- Processing and review completed.
# P Provisional data subject to revision.
```

agency_cd	site_no	datetime	01_00060_00003	01_00060_00003_cd
5s	15s	20d	14n	10s
USGS	11162570	2014-01-01	0.83	A
USGS	11162570	2014-01-02	0.87	A
USGS	11162570	2014-01-03	0.83	A
USGS	11162570	2014-01-04	0.82	A
USGS	11162570	2014-01-05	0.83	A
USGS	11162570	2014-01-06	0.76	A
USGS	11162570	2014-01-07	0.82	A
USGS	11162570	2014-01-08	0.85	A
USGS	11162570	2014-01-09	0.86	A
USGS	11162570	2014-01-10	0.85	A
USGS	11162570	2014-01-11	0.87	A
USGS	11162570	2014-01-12	0.87	A
USGS	11162570	2014-01-13	0.87	A
USGS	11162570	2014-01-14	0.88	A
USGS	11162570	2014-01-15	0.86	A
USGS	11162570	2014-01-16	0.77	A
USGS	11162570	2014-01-17	0.66	A
USGS	11162570	2014-01-18	0.59	A
USGS	11162570	2014-01-19	0.55	A
USGS	11162570	2014-01-20	0.47	A
USGS	11162570	2014-01-21	0.45	A
USGS	11162570	2014-01-22	0.48	A
USGS	11162570	2014-01-23	0.52	A
USGS	11162570	2014-01-24	0.51	A
USGS	11162570	2014-01-25	0.44	A

USGS	11162570	2014-01-26	0.38	A
USGS	11162570	2014-01-27	0.41	A
USGS	11162570	2014-01-28	0.41	A
USGS	11162570	2014-01-29	0.54	A
USGS	11162570	2014-01-30	0.56	A
USGS	11162570	2014-01-31	0.70	A
USGS	11162570	2014-02-01	0.74	A
USGS	11162570	2014-02-02	1.4	A
USGS	11162570	2014-02-03	3.1	A
USGS	11162570	2014-02-04	2.7	A
USGS	11162570	2014-02-05	2.1	A
USGS	11162570	2014-02-06	4.4	A
USGS	11162570	2014-02-07	7.5	A
USGS	11162570	2014-02-08	12	A
USGS	11162570	2014-02-09	62	A
USGS	11162570	2014-02-10	59	A
USGS	11162570	2014-02-11	16	A
USGS	11162570	2014-02-12	8.0	A
USGS	11162570	2014-02-13	5.5	A
USGS	11162570	2014-02-14	4.3	A
USGS	11162570	2014-02-15	3.6	A
USGS	11162570	2014-02-16	3.4	A
USGS	11162570	2014-02-17	3.3	A
USGS	11162570	2014-02-18	2.7	A
USGS	11162570	2014-02-19	2.5	A
USGS	11162570	2014-02-20	2.4	A
USGS	11162570	2014-02-21	2.2	A
USGS	11162570	2014-02-22	2.1	A
USGS	11162570	2014-02-23	2.0	A
USGS	11162570	2014-02-24	1.9	A
USGS	11162570	2014-02-25	1.9	A
USGS	11162570	2014-02-26	2.1	A
USGS	11162570	2014-02-27	9.6	A
USGS	11162570	2014-02-28	28	A
USGS	11162570	2014-03-01	42	A
USGS	11162570	2014-03-02	24	A
USGS	11162570	2014-03-03	15	A
USGS	11162570	2014-03-04	12	A
USGS	11162570	2014-03-05	9.1	A
USGS	11162570	2014-03-06	9.9	A
USGS	11162570	2014-03-07	9.7	A
USGS	11162570	2014-03-08	7.9	A
USGS	11162570	2014-03-09	6.9	A
USGS	11162570	2014-03-10	5.9	A
USGS	11162570	2014-03-11	5.2	A
USGS	11162570	2014-03-12	4.5	A
USGS	11162570	2014-03-13	4.2	A
USGS	11162570	2014-03-14	4.0	A
USGS	11162570	2014-03-15	3.6	A
USGS	11162570	2014-03-16	3.5	A
USGS	11162570	2014-03-17	3.3	A
USGS	11162570	2014-03-18	3.2	A
USGS	11162570	2014-03-19	3.0	A
USGS	11162570	2014-03-20	2.9	A
USGS	11162570	2014-03-21	2.9	A
USGS	11162570	2014-03-22	2.8	A
USGS	11162570	2014-03-23	2.7	A

USGS	11162570	2014-03-24	2.7	A
USGS	11162570	2014-03-25	2.7	A
USGS	11162570	2014-03-26	2.9	A
USGS	11162570	2014-03-27	4.2	A
USGS	11162570	2014-03-28	3.6	A
USGS	11162570	2014-03-29	3.5	A
USGS	11162570	2014-03-30	8.0	A
USGS	11162570	2014-03-31	7.3	A
USGS	11162570	2014-04-01	24	A
USGS	11162570	2014-04-02	41	A
USGS	11162570	2014-04-03	18	A
USGS	11162570	2014-04-04	13	A
USGS	11162570	2014-04-05	12	A
USGS	11162570	2014-04-06	9.0	A
USGS	11162570	2014-04-07	7.4	A
USGS	11162570	2014-04-08	6.2	A
USGS	11162570	2014-04-09	5.2	A
USGS	11162570	2014-04-10	4.7	A
USGS	11162570	2014-04-11	4.2	A
USGS	11162570	2014-04-12	3.9	A
USGS	11162570	2014-04-13	3.8	A
USGS	11162570	2014-04-14	3.8	A
USGS	11162570	2014-04-15	3.6	A
USGS	11162570	2014-04-16	3.4	A
USGS	11162570	2014-04-17	3.3	A
USGS	11162570	2014-04-18	3.2	A
USGS	11162570	2014-04-19	3.1	A
USGS	11162570	2014-04-20	3.0	A
USGS	11162570	2014-04-21	2.7	A
USGS	11162570	2014-04-22	2.6	P
USGS	11162570	2014-04-23	2.6	P
USGS	11162570	2014-04-24	2.4	P
USGS	11162570	2014-04-25	2.7	P
USGS	11162570	2014-04-26	4.8	P
USGS	11162570	2014-04-27	3.5	P
USGS	11162570	2014-04-28	2.9	P
USGS	11162570	2014-04-29	2.5	P
USGS	11162570	2014-04-30	2.2	P
USGS	11162570	2014-05-01	2.0	P
USGS	11162570	2014-05-02	2.0	P
USGS	11162570	2014-05-03	2.0	P
USGS	11162570	2014-05-04	1.9	P
USGS	11162570	2014-05-05	1.9	P
USGS	11162570	2014-05-06	1.9	P
USGS	11162570	2014-05-07	1.9	P
USGS	11162570	2014-05-08	2.0	P
USGS	11162570	2014-05-09	2.1	P
USGS	11162570	2014-05-10	2.1	P
USGS	11162570	2014-05-11	1.4	P
USGS	11162570	2014-05-12	1.2	P
USGS	11162570	2014-05-13	0.74	P
USGS	11162570	2014-05-14	0.65	P
USGS	11162570	2014-05-15	0.72	P
USGS	11162570	2014-05-16	0.72	P
USGS	11162570	2014-05-17	0.72	P
USGS	11162570	2014-05-18	0.70	P
USGS	11162570	2014-05-19	0.67	P

USGS	11162570	2014-05-20	0.59	P
USGS	11162570	2014-05-21	0.45	P
USGS	11162570	2014-05-22	0.58	P
USGS	11162570	2014-05-23	0.80	P
USGS	11162570	2014-05-24	0.83	P
USGS	11162570	2014-05-25	0.79	P
USGS	11162570	2014-05-26	0.88	P
USGS	11162570	2014-05-27	0.80	P
USGS	11162570	2014-05-28	0.70	P
USGS	11162570	2014-05-29	0.30	P
USGS	11162570	2014-05-30	0.17	P
USGS	11162570	2014-05-31	0.24	P
USGS	11162570	2014-06-01	0.57	P
USGS	11162570	2014-06-02	0.56	P
USGS	11162570	2014-06-03	0.17	P
USGS	11162570	2014-06-04	0.26	P
USGS	11162570	2014-06-05	0.60	P
USGS	11162570	2014-06-06	0.50	P
USGS	11162570	2014-06-07	0.24	P
USGS	11162570	2014-06-08	0.27	P
USGS	11162570	2014-06-09	0.38	P
USGS	11162570	2014-06-10	0.14	P
USGS	11162570	2014-06-11	0.08	P
USGS	11162570	2014-06-12	0.06	P
USGS	11162570	2014-06-13	0.04	P
USGS	11162570	2014-06-14	0.04	P
USGS	11162570	2014-06-15	0.00	P
USGS	11162570	2014-06-16	0.05	P
USGS	11162570	2014-06-17	0.02	P
USGS	11162570	2014-06-18	0.05	P
USGS	11162570	2014-06-19	0.06	P
USGS	11162570	2014-06-20	0.03	P
USGS	11162570	2014-06-21	0.05	P
USGS	11162570	2014-06-22	0.02	P
USGS	11162570	2014-06-23	0.01	P
USGS	11162570	2014-06-24	0.03	P
USGS	11162570	2014-06-25	0.06	P
USGS	11162570	2014-06-26	0.04	P
USGS	11162570	2014-06-27	0.12	P
USGS	11162570	2014-06-28	0.02	P
USGS	11162570	2014-06-29	0.00	P
USGS	11162570	2014-06-30	0.00	P
USGS	11162570	2014-07-01	0.00	P
USGS	11162570	2014-07-02	0.02	P
USGS	11162570	2014-07-03	0.02	P
USGS	11162570	2014-07-04	0.00	P
USGS	11162570	2014-07-05	0.02	P
USGS	11162570	2014-07-06	0.01	P
USGS	11162570	2014-07-07	0.00	P
USGS	11162570	2014-07-08	0.00	P
USGS	11162570	2014-07-09	0.00	P
USGS	11162570	2014-07-10	0.00	P

# 2010 URBAN WATER MANAGEMENT PLAN

*December 15, 2010*



**Zone 7 Water Agency  
Livermore, CA**

7.5 Reliability of BBID Contract .....	7-8
7.6 Additional Reliability Provided with Storage.....	7-10
7.7 Total Supply Reliability .....	7-13
<b>8. Water Transfers – Supplies and Storage.....</b>	<b>8-1</b>
8.1 Additional Supplies Through Water Transfers.....	8-1
8.2 Water Storage Outside Zone 7 .....	8-2
8.3 Total Water Transfer and Storage Agreements .....	8-2
<b>9. Past, Present, and Projected Water Demands.....</b>	<b>9-1</b>
9.1 Past Water Demands Served by Zone 7.....	9-1
9.2 Breakdown of Water Accounts and Use by Sector in 2009.....	9-5
9.3 Projected Water Demands.....	9-6
<b>10. Water Demand Management Measures .....</b>	<b>10-1</b>
10.1 Implementation of Demand Management Measures .....	10-2
<b>11. Planned Water Supply Programs and Projects .....</b>	<b>11-1</b>
11.1 Long-term “Delta Fix” .....	11-1
11.2 Water System Master Plan Update .....	11-2
11.3 Key Water Supply Facility Improvements .....	11-3
11.4 New Supply Assumptions for the UWMP.....	11-5
<b>12. Development of Desalinated Water .....</b>	<b>12-1</b>
12.1 Overview.....	12-1
12.2 Completed Work.....	12-2
12.3 Ongoing Efforts .....	12-2
<b>13. Water Shortage Contingency Plan.....</b>	<b>13-1</b>
13.1 Stages of Action.....	13-2
13.2 Three-Year Minimum Water Supply .....	13-3
13.3 Catastrophic Water Supply Interruption .....	13-4
13.4 Prohibitions and Ordinances .....	13-5
13.5 Impacts of Drought Actions on Revenues and Expenditures .....	13-5
13.6 Reduction Measuring Mechanisms.....	13-6
<b>14. Recycled Water Plan.....</b>	<b>14-1</b>
14.1 Coordination .....	14-1
14.2 Wastewater Quantity, Quality and Current Uses.....	14-2
14.3 Potential and Projected Use, Optimization Plan with Incentives .....	14-3
<b>15. Water Quality Impacts on Reliability .....</b>	<b>15-1</b>

# TABLE OF CONTENTS

<b>1. Introduction.....</b>	<b>1-1</b>
1.1 Previous Urban Water Management Plans .....	1-1
1.2 The Purpose of the 2010 UWMP.....	1-1
1.3 Plan Contents and Organization.....	1-2
1.4 Changes from the 2005 UWMP.....	1-2
<b>2. General Service Area.....</b>	<b>2-1</b>
2.1 Background.....	2-1
2.2 Service Area.....	2-3
2.3 Existing Water Use Sectors .....	2-6
2.4 Population Growth.....	2-6
2.5 Climate.....	2-9
2.6 Zone 7’s Conveyance, Treatment, and Transmission System .....	2-11
<b>3. Agency Coordination.....</b>	<b>3-1</b>
3.1 Coordination with Other Agencies .....	3-1
3.2 Resource Maximization and Import Minimization.....	3-3
<b>4. Public Participation .....</b>	<b>4-1</b>
4.1 Public Participation.....	4-1
<b>5. Water Supply Sources and Storage Options .....</b>	<b>5-1</b>
5.1 Imported Surface Water Supply.....	5-1
5.2 Local Surface Water Runoff .....	5-3
5.3 Local Storage .....	5-4
5.4 Non-Local Storage .....	5-5
5.5 Total Supply and Storage.....	5-6
<b>6. Groundwater .....</b>	<b>6-1</b>
6.1 The Livermore Valley Groundwater Basin.....	6-1
6.2 Groundwater Quantity .....	6-2
6.3 Groundwater Quality .....	6-8
<b>7. Reliability of Supplies.....</b>	<b>7-1</b>
7.1 Zone 7’s Existing Water Supply Reliability Policy .....	7-1
7.2 Basis of Water Year Data .....	7-1
7.3 Reliability of Local Runoff from Arroyo del Valle .....	7-2
7.4 Reliability of Supply from the State Water Project .....	7-4

15.1 Imported Surface Water Supply.....	15-1
15.2 Local Surface Water Runoff .....	15-2
15.3 Local Storage .....	15-2
15.4 Non-Local Storage .....	15-3
<b>16. Water Service Reliability .....</b>	<b>16-1</b>
<b>17. UWMP Adoption and Implementation.....</b>	<b>17-1</b>

## 2.3 EXISTING WATER USE SECTORS

Zone 7's service area is home to a diverse, vibrant, and rapidly growing community that supports a population of approximately 216,000 people and a myriad of vital and dynamic commercial, agricultural, and industrial enterprises. The eastern reaches of Zone 7's service area include oil wells and acres of energy generating windmills, while other areas include large employers such as AT&T, Oracle, Providian Financial, SAP, and Lawrence Livermore National Laboratory. This area also supports a number of award-winning wineries. Examples of industrial water users include: Applied Biosystems (biotech), Clorox Services Company (chemical company), Roche Molecular Systems (medical research and development), and A-1 Enterprise (waste hauler).

As discussed previously, Zone 7 provides wholesale treated water to the Retailers, who use this water for M&I purposes within their service areas; through this arrangement, Zone 7 indirectly serves approximately 66,000 residential, commercial, industrial, institutional, and landscape water use accounts. Two of the Retailers—DSRSD and Livermore—also provide recycled water for landscape irrigation to supplement treated water supply. In addition to supplying treated water, Zone 7 also supplies raw or untreated water for agricultural purposes to 3,500 acres in the service area, primarily consisting of vineyards in the southern portion of the Livermore Valley. Agriculture in the Livermore area also produces olives, pistachios, and prime beef.

As shown in Table 2-1, water accounts within Zone 7's service area are primarily residential (90%). Water use details are further discussed in Chapter 9.

**Table 2-1. 2009 Accounts by Water Use Sectors Directly and Indirectly Served by Zone 7<sup>(a)</sup>**

Water Use Sector	Accounts	% of Total
Single-Family Residential	57,198	86%
Multi-Family Residential	2,327	4%
Commercial/Institutional	3,807	6%
Industrial	175	0.3%
Landscape	1,844	3%
Agriculture	14	0.02%
Other	868	1%
<b>TOTAL</b>	<b>66,233</b>	<b>100%</b>

<sup>(a)</sup> Based on data provided by Cal Water, DSRSD, Livermore, and Pleasanton, and Zone 7's annual water supply reports. These values do not include recycled water, but do include untreated surface water provided to agriculture.

## 2.4 POPULATION GROWTH

As shown on Figure 2-2, the population within Zone 7's service area has increased by 65% between 1990 and 2009, and is projected to grow by another 35% by 2040, from 216,000 in 2009 to 291,000; a majority of the projected growth occurs within the next 10 years. Population projections within Zone 7's service area over the next 20 years are presented in Table 2-2. As

