

Section 4

Water Shortage Contingency Plan

In April, 2004, the DWP Board of Commissioners (Board) adopted a resolution to update the General Water Conservation Guidelines and add regulations for water shortage emergencies in the Big Bear Valley. This resolution superseded two previous conservation resolutions, passed in June 1989, and November 2003. The resolution updates the General Water Conservation Guidelines, establishing policies and requirements, as well as instituting penalties and an appeal process for failure to comply. This resolution also adds regulations for Non-Water Shortage Emergencies (such as wildfires, earthquakes, emergencies other than drought) establishing policies and regulations to be followed in the event of an emergency. This resolution also contains a Water Shortage Emergencies section, which establishes policies and regulations to be followed, and implements conservation stages in the event the Board declares a water shortage emergency.

The Board may declare a Water Shortage Emergency when below average precipitation results in declining water levels in DWP production wells to such a point that continued delivery of water to the DWP customers is projected to be threatened, immediately or within the foreseeable future. The Board, after declaring an emergency, shall determine the Conservation Stage that is appropriate at the time, based on the resolution, and consultation with the Technical Review Team. The Board will consider the following when determining the Conservation Stage:

- Current ground water levels
- Recent trends in ground water levels.
- The previous winter's precipitation.
- The previous year's water demand.
- Current and anticipated demand for water by DWP customers.
- Current and anticipated production capacity of DWP water sources.
- Damage to the DWP's water system.
- Anticipated ability to optimize use of above-ground water storage.
- Predicted weather patterns.

The Board will consider these conditions and declare one of four water conservation stages, depending on the severity of the emergency as determined by the Board. The water use restrictions listed under each Conservation Stage, provide general water use regulations to be implemented during water shortage emergencies. Additional restrictions may be recommended by the Technical Review Team, as they are determined necessary. Additional restrictions may be issued by the Board, whenever it convenes, to review new emergency conditions and/or reevaluate appropriate Conservation Stages.

4.1 Stages of Action

Water Code section 10632 (a)

The plan shall provide an urban water shortage contingency analysis that includes each of the following elements that are within the authority of the urban water supplier: (a) Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply, and an outline of specific water supply conditions which are applicable to each stage.

The DWP Water Shortage Emergencies resolution establishes four water conservation stages, depending on the severity of the emergency as determined by the Board. Each stage of action has a set of conservation measures.

Water code section 10632 of the Urban Water Management Plan Act requires a shortage situation of 50 percent reduction in water supply to be addressed. Presented below are the four water stages and the actions that are taken for each stage. Conservation Stage IV, will provide adequate conservation during a water shortage of up to a 50 percent reduction in water supply and is discussed below.

Conservation Stage I

1. All DWP residential and commercial customers shall reduce their water consumption by a minimum of 5% below their average monthly consumption during Conservation Stage I.
2. Outdoor water-use shall be reduced by at least 15% below their monthly consumption during Conservation Stage I.
3. Landscape irrigation will be permitted only on odd or even days of the month, depending on whether the last number of the customer's street address is odd or even.
4. Landscaping permits will be required for all new or retrofitted turn installations.
5. The square footage of turf shall be limited to 1,000 square feet for new or retrofitted landscapes.

6. DWP will promote indoor water-use conservation.
7. All water used for construction will be metered.
8. All new landscapes and modifications to existing landscapes greater than 1,000 square feet, shall be required to obtain a landscaping permit prior to beginning work.
9. DWP customers using 8 ccfs/month or less, for all billings during the previous 12 months, shall be exempt from the water use reductions described in items 1 and 2 above, provided their water use remains at this level or lower for the duration of the water emergency.

Conservation Stage II

1. All DWP residential and commercial customers shall reduce their water consumption by a minimum of 10% below their average monthly consumption during Conservation Stage II.
2. Outdoor water-use shall be reduced by at least 30% below their average monthly consumption during Conservation Stage II.
3. Indoor water-use shall be reduced by at least 5% below their average monthly consumption during Conservation Stage II.
4. Outdoor irrigation will be permitted only on days authorized by the DWP.
5. All new landscapes and modifications to existing landscapes greater than 1,000 square feet, shall be required to obtain a landscaping permit prior to beginning work.
6. No new turf will be permitted at any location, new or existing.
7. No DWP water may be used for soil compaction or dust control.
8. DWP customers using 8 ccfs/month or less, for all billings during the previous 12 months, shall be exempt from the stipulations in items 1, 2 and 3 above, provided their water use remains at this level or lower for the duration of the water emergency.

Conservation Stage III

1. All DWP residential and commercial customers shall reduce their water consumption by a minimum of 25% below their average monthly consumption during Conservation Stage III.
2. Outdoor water-use shall be reduced by at least 60% below their monthly average consumption during Conservation Stage III.

3. Indoor water-use shall be reduced by at least 10% below their average monthly consumption during Conservation Stage III.
4. Landscape irrigation will be permitted only two days per week, on days designated by the DWP.
5. No DWP water shall be used for ponds, streams, or fountains with a capacity greater than 50 gallons.
6. No new turf will be permitted at any location, new or existing.
7. All new landscapes and modifications to existing landscapes, greater than 1,000 square feet shall be required to obtain a landscaping permit prior to beginning work. All new plant material must be low water use (Xeriscape).
8. No DWP water may be used for soil compaction or dust control.
9. DWP customers using 8 ccfs/month or less, for all billings during the previous 12 months, shall be exempt from the stipulations in items 1, 2 and 3 above, provided their water use remains at this level or lower for the duration of the water emergency.

Conservation Stage IV

1. All DWP residential and commercial customers shall reduce their water consumption by a minimum of 45% below their average monthly consumption during Conservation Stage IV.
2. Outdoor water-use shall be reduced at least 90% below their monthly consumption during Conservation Stage IV.
3. Indoor water-use shall be reduced at least 20% below their average monthly consumption during Conservation Stage IV.
4. No outdoor water use shall be permitted, except commercial car washes that recycle water.
5. No landscape irrigation shall be permitted.
6. No DWP water shall be used for ponds, streams, fountains and new or unfilled swimming pools.
7. No new turf will be permitted.
8. No DWP water may be used for soil compaction or dust control.

9. All new landscapes and modifications to existing landscapes greater than 1,000 square feet shall be required to obtain a landscaping permit prior to beginning work. Only landscape items requiring no water to establish or maintain may be installed.

10. DWP customers using 8 ccfs/month or less, for all billings during the previous 12 months shall be exempt from the stipulations in items 1, 2 and 3 above, provided their water use remains at this level or lower for the duration of the water shortage emergency.

4.2 Estimate of Minimum Supply for Next Three Years

Water Code section 10632 (b)

An estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply.

To estimate the three year minimum water supply, the historic three-year sequence used was from 2001-2003, the same time period used in Section 7, Water Service Reliability. The normal year data was derived from data for 2005. The estimates are included in Table 4-1, below.

Table 4-1				
Three-Year Estimated Minimum Water Supply				
Source	Year 1 -2006	Year 2 - 2007	Year 3 - 2008	Normal
Groundwater	2,733	2,469	2,498	2,939
Imported Water	66	66	66	66
Transfers/exchanges	0	0	0	0
Recycled Water	11	11	11	11
Total	2,810	2,546	2,575	3,016

Based on the driest three-year historic period, the estimated minimum supply for the next three years (2006-2008) will not meet the demand for the years 2007 and 2008. The deficit of supply would be drawn from ground water in storage in the basins. Following implementation of the Recycled Water Plan in 2010, these supply deficits will be reduced.

4.3 Catastrophic Supply Interruption Plan

Water Code section 10632 (c)

Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.

As part of the resolution passed on April, 2004 establishing general water use guidelines, and water shortage emergencies, the DWP Board also adopted regulations concerning non-water shortage emergencies. Non-water shortage emergencies include such emergencies as wildfires, earthquakes, terrorist acts, and any other emergencies other than drought which could affect water supply or delivery. In addition, the DWP has prepared a Water System Emergency Response Plan (February 2005) that contains procedures to be followed in the event of a declared emergency.

These regulations provide a framework for an organized response to a non-water shortage emergency. The primary objectives of these regulations is to provide guidelines and procedures for responding to emergencies, other than those related to drought, that have the potential to disrupt the DWP's ability to deliver water to its customers. All decisions associated with this resolution will be determined by the Board, when possible, the General Manager of the DWP, or his authorized representative.

All declared emergencies will be dealt with in three phases:

- The Assessment Phase
- The Emergency Phase
- The Recovery Phase

The Assessment Phase is defined as beginning upon the declaration of an emergency at the inception of the event (e.g. an earthquake) or when an event is imminent (e.g. wildfire). Upon declaration of an emergency, the following procedures shall be followed:

- DWP staff shall assess the emergency and its potential effects on the DWP's ability to provide water for human consumption, sanitation, and fire protection. This assessment should be completed within 48 hours or less. Under exceptional circumstances or changing conditions, the assessment may require additional time to complete. Nonetheless, assessment of the situation shall be completed as quickly and efficiently as possible under prevailing conditions.
- Use of water outdoors for other than emergency purposes shall be prohibited.
- Use of water indoors for purposes other than human consumption, sanitation, and fire protection shall be prohibited.
- All water use shall be minimized.

Upon completion of the Assessment Phase, the Emergency Phase shall begin and continue as long as emergency conditions persist. For the duration of the Emergency Phase, the following procedures shall be followed.

- Use of water outdoors for other than emergency purposes shall be prohibited.
- Use of water indoors for purposes other than human consumption, sanitation, and fire protection shall be prohibited.
- All water use shall be minimized.

When emergency conditions end, the Board, when possible, or General Manager shall declare an end to the Emergency Phase, which will signal the beginning of the Recovery Phase. The Recovery Phase shall last until normal conditions return to the DWP service. For the duration of the Recovery Phase, the following procedures shall be followed.

- Use of water outdoors for other than emergency purposes shall be prohibited, unless the General Manager determines that restricted outdoor water use is reasonable given the current state of DWP's water system. When restricted outdoor use is permissible, the public will be provided with a specific list of approved outdoor water uses.
- All water use shall be minimized.

When recovery is complete, water use guidelines shall return to the regulations that were in effect immediately prior to the declaration of the emergency, unless otherwise specified.

Action responses to specific types of non-drought related emergencies are outlined in the DWPs Emergency Response Plan (ERP), completed in February 2005. The ERP outlines the responses for emergencies such as earthquakes, power outages, wildfires, and so forth.

4.4 Prohibitions, Penalties and Consumption Reduction Methods

Water Code section 10632 (d-f)

- (d) Additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.*
- (e) Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.*
- (f) Penalties or charges for excessive use, where applicable.*

In addition to the prohibitions listed above in relation to water shortage emergencies, the DWP and City of Big Bear Lake have several general water conservation regulations that are in place at all times. These regulations are intended to conserve the available water supply and achieve an overall per capita reduction in water use.

- All structures in new developments shall be equipped with low flow faucets, showerheads and toilets. All three items must have flow rates or gallons per flush that are 2.0 gallons per minute/flush or less.
- All structures in new residential developments shall be equipped with low water use dishwashers (10 gallons/load or less) and washing machines (25 gallons/load or less).
- Residential customers in existing developments shall be encouraged to install water efficient dishwashers (10 gallons/load or less) and washing machines (25 gallons/load or less).
- All hot water lines shall be insulated.
- Customers shall be encouraged to use native and water conserving plants for landscaping.
- Customers shall be encouraged to minimize the use of turf at all new and retrofitted commercial and residential landscapes.
- The DWP shall continue development of water conservation customer outreach program.
- The DWP shall encourage and promote water recycling and reuse.
- Water conservations will be required as set forth herein.
- The DWP shall encourage and promote development of water conservation plans for all customers whose water use exceeds reasonable guidelines developed by the DWP.
- The DWP shall require repair of all leaks, once they are detected.
- No business or public place where food is sold shall serve drinking water to any person unless drinking water is specifically requested.
- All businesses and public places that offer sleeping facilities shall implement a program restricting linen changes for each guest to once every three days.
- All outdoor irrigation shall be shut off and winterized between November 1st and April 1st each year.
- Between November 1st and April 1st of each year, all homes and businesses left unoccupied for four or more consecutive days must shut off and winterize their water system.

- The DWP will establish reasonable water use standards for all residential and commercial customers in its service area. Any customer whose water use exceeds the reasonable water use established by DWP for their home or business will be requested to explain their excessive use of water to DWP staff, upon request.

In the event that the DWP must implement the water shortage emergency plan, regardless of the stage, certain mandatory prohibitions and consumption reduction methods become necessary (Table 4-2). These prohibitions and reduction methods are discussed in detail above in Section 4.1.

Table 4-2 Mandatory Prohibitions and Consumption Reduction Methods	
Prohibitions*	Stage when Prohibition becomes Necessary
Landscape Irrigation prohibited other than during specified hours and/or days	Stage I
No DWP for soil compaction / construction	Stage II
No new turf grass installations	Stage II
No DWP water for ponds, streams, or fountains	Stage III
No outdoor water use	Stage IV
No landscape irrigation	Stage IV
5% overall reduction in consumption	Stage I
10% overall reduction in consumption	Stage II
25% overall reduction in consumption	Stage III
45% overall reduction in consumption	Stage IV

* some examples of prohibitions. See 4.1 for more detailed information.

As part of the resolution passed on April, 2004 establishing general water use guidelines, and water shortage emergencies, the DWP Board also adopted regulations concerning the penalties and charges for failure to comply with the resolution adopted. These penalties and charges are outlined in Table 4-3 below, and further discussed in detail below. Per the resolution, they are intended to apply to all the water conservation regulations, not just those implemented in a water shortage emergency.

Table 4-3 Penalties and Charges		
Violation	Penalty or Charge	Stage when penalty takes effect
First Violation	Notification	All Conservations Stages
Second Violation	Notification + \$50 surcharge	All Conservations Stages
Third Violation	Notification + \$250 surcharge + report to Board	All Conservations Stages

Table 4-3 (Continued) Penalties and Charges		
Violation	Penalty or Charge	Stage when penalty takes effect
Fourth Violation	Notification + \$500 surcharge and related expenses + flow restrictor on water service + report to Board	All Conservations Stages
Fifth Violation	Notification + Discontinuation of Water Service + agreement to comply	All Conservations Stages

The penalties for failure to comply with any of the provisions of Resolution No. DWP 2004-03 are as follows:

- **First Violation.** The DWP will contact the violator by certified mail explaining the violation, the need for regulation that was violated, a list of penalties associated with continued violation, and request voluntary compliance.
- **Second Violation.** The DWP will contact the violator by certified mail explaining the violation, the need for regulation that was violated, inform the customer of his previous violations, provide a list of penalties associated with continued violation, and add a \$50 surcharge to the customer’s water bill.
- **Third Violation.** The DWP will contact the violator by certified mail explaining the violation, the need for regulation that was violated, inform the customer of his previous violations, provide a list of penalties associated with continued violations, add a \$250 surcharge to the customer’s water bill, and notify the Board.
- **Fourth Violation.** The DWP will contact the violator by certified mail explaining the violation, the need for regulation that was violated, inform the customer of his previous violations, provide a list of penalties associated with continued violations, install a flow restrictor in the customer’s water service, add a \$500 surcharge and all associated expenses to the customer’s water bill, and notify the Board.
- **Fifth Violation.** The DWP will contact the violator by certified mail explaining the violation, the need for regulation that was violated, inform the customer of his previous violations, and, upon approval of the Board, discontinue water service to the customer until the customer delivers a notarized written agreement to abide by all water use regulations established by DWP and such other requirements as the Board may determine to be appropriate under the circumstances.

The resolution also includes provisions for the removal of the flow restrictor and/or the restoration of water service upon a Hearing held where the customer demonstrates to the satisfaction of the DWP General Manager that the causes of the violations have been corrected and all fines, fees and surcharges have been paid.

4.5 Analysis of Revenue Impacts of Reduced Sales During Shortages

Water Code Section 10632(g)

An analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f) inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.

The projected impact of water sales for each one year period during a water shortage condition would result in an overall decrease in water sales revenue approximately equal to the reduced consumption required by the respective conservation stage. Should a Stage I water shortage emergency be in place for one year, the DWP could expect a revenue decrease of about 5%, equal to a 5% decrease in consumption.

In 2005, the DWP instituted a Reserve Fund Policy, with the purpose of reserving a portion of the budget each year to overcome revenue impacts as a result of water shortage emergencies, or natural or other disasters, or other emergency capital outlay problems.

Starting in 2005, a total of one month of costs for the daily operations of the DWP will be held in reserve as part of the Policy. Each year, the DWP will add one additional month as part of the Reserve Fund Policy until a total of three months of operating surplus is set aside.

In addition to the reserves of operating costs, the DWP Reserve Fund Policy also states that a reserve of capital replacement is targeted to be maintained. The DWP currently is saving to secure a reserve of the capital costs to replace 75% of one DWP production well, and 75% of the cost to replace one DWP 1 million gallon water storage reservoir.

Based on this Reserve Fund Policy, adequate reserves are presently in place (8.3% yearly operating costs) to cover a present Conservation Stage I or Stage II for one year. In 2010, the DWP will have adequate reserves in place to cover a Conservation Stage III for one year. However, in the event of a long term implementation (more than one year) of Conservation Stages III or IV, a water rate increase would be necessary to help overcome the reduction in water sales revenue and to prevent depletion of the reserve funds. As part of the Financial Plan and Rate Study currently being performed by the DWP as part of the Water Master Plan, a rate adjustment is being studied due to the potential revenue impacts of water conservation.

4.6 Draft Ordinance and Use Monitoring Procedure

Water Code 10632 (h & j)

(h) A draft water shortage contingency resolution and ordinance.

(i) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.

DWP's water shortage resolution was discussed in Section 4, and a copy of the resolution and the plan are attached in Appendix B.

If the water savings actions contained within the resolution are ever necessitated by water shortage conditions, DWP will be able to track actual reductions in water use through its billing system. The billing system tracks actual use on a monthly or bimonthly basis regardless of the supply condition. DWP can readily compare past consumption records with current consumption records to determine actual water reductions during water shortages.