



**Water Shortage Stage
Workshop Summary Report**

Regional Water Authority

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Executive Summary

Communication with water customers is especially important during times of drought. As part of drought response, each water provider typically has a water shortage contingency plan in place that includes a set of water shortage stages.¹ These stages are triggered dependent on necessary percent reductions in use. The percent reductions have associated actions to reduce use that are either requested or required of customers. Typically these stages vary in name, percent reduction and associated actions as to meet local needs. However, as water provider boundaries are often intertwined, clearly communicating these stages to customers can be a challenge. For example neighbors across the street from each other often have different watering days, which can cause confusion. Situations such as this affect the success of local and regional public outreach messaging to urge customers to reduce water use.

For these reasons and with the added urgency of historic 2014 drought conditions, the Regional Water Authority (RWA) convened a workshop for water providers (local and county governments and water districts) in the Sacramento region to discuss and produce a water shortage stage template (Page 9). The workshop was held on November 20, 2014 and was attended by 21 people representing 12 Sacramento region water providers. The workshop presented an opportunity for water providers to discuss specific water conserving actions within a framework of water shortage stages. It also allowed these water providers to share successful actions and strategies that have been recently adopted and implemented in the region to better prepare water shortage contingency plans in the future.

The finalized template provided in this document would not have been possible without the extensive work of the Regional Managers Forum hosted by the Sacramento Area Council of Governments (SACOG) that produced a template base from which workshop attendees discussed and modified. **The purpose of this template is to serve as a tool to assist water providers in the development of their water shortage contingency plans. Each water provider retains discretion in its selection of the specific language, actions and requirements to include in each stage of its water shortage contingency plan.** Included in the template are stage numbers, public announcement stage names, recommended conservation (water use percent reductions) and suggested actions.

This summary report document will be distributed to water providers in the Sacramento region and will be updated as necessary by the Regional Water Authority.

About the Regional Water Authority: RWA is a joint powers authority representing two dozen water providers and affiliates in the greater Sacramento area. Its primary mission is to help its members protect and enhance the reliability, availability, affordability and quality of water resources.

¹ It should be noted that water shortage stages are part of a broader water shortage contingency plan, which is part of a broader urban water management plan. For more information, visit the California Department of Water Resources' Urban Water Management webpage: www.water.ca.gov/urbanwatermanagement/.

Workshop Background

The desire for water providers in this region to coordinate water shortage stages has been recognized for some time now. There are many benefits to aligning stages such as increased regional and local consistency in public outreach messaging and reduced customer confusion. However, there are some challenges as well including the need to maintain local preferences and implications of stage language when water rates are involved. Despite these challenges the Sacramento region has made efforts to move toward aligning stages among water providers.

The first effort was in 2010 after the region experienced a dry water year in 2009. The Regional Water Authority (RWA) created the Regional Water Shortage Contingency Plan Consistency Work Group (Work Group) to draft common stage numbers, titles and water savings ranges (percent reductions). The Work Group consisted of the following RWA water provider members: Carmichael Water District, Citrus Heights Water District, City of Folsom, City of Lincoln, City of Roseville, City of Sacramento, Del Paso Manor Water District, Placer County Water Agency and Sacramento Suburban Water District. The Work Group recommended the stages and water savings ranges displayed in Table 1 and also recommended that all RWA member water providers consider changing elements of their respective water shortage contingency plan to be consistent with neighboring water providers. When no shortage exists, the recommendation was to refer to a “normal water supply” and point customers to their water provider’s existing water waste ordinance or policy.

Table 1: 2010 RWA Water Shortage Stage Recommendations

Stage	Title	Water Savings Range*
Stage 1	Water Alert	Up to 10%
Stage 2	Water Warning	Up to 25%
Stage 3	Water Crisis	Up to 50%
Stage 4	Water Emergency (Health and Safety Only)	>50%

* The actual water savings target will be determined when a stage is declared by the water provider.

To complement the stage recommendations in Table 1, the Work Group also provided a list of recommended water efficiency measures that could be communicated to the public and the media in local and regional messages.

- Outdoors
 - Keep water from running off your property when watering landscape.
 - Repair leaks promptly (inside and out).
 - Use shutoff nozzle on hoses.
 - Maintain your swimming pool without draining and filling it.
 - Typically, watering three days per week is sufficient for most landscapes in the Sacramento region.
 - Water during cooler morning and evening hours to reduce evaporation.
- Indoors
 - Use high efficiency plumbing fixtures and appliances.
 - Do full loads of laundry and dishes.
- Contact your water provider for additional recommendations and specific requirements.

As a result of this effort, seven water providers (out of 20) in the region incorporated all or some of the elements in Table 1 into their respective water shortage stage language. The changes occurred between 2010 and 2014.

The second effort was in response to the historic 2014 California drought and was led by a committee of local government staff as part of the Regional Managers Forum (Forum). The Forum is organized through the Sacramento Area Council of Governments (SACOG), the metropolitan planning organization for the Sacramento region. This effort produced a water shortage stage template that included coordinated stage numbers, stage names, percent reductions and corresponding conservation actions. This was a step further than previous efforts as it linked stage information with conservation actions to provide a more complete template. Landscape watering, water waste and construction related suggested language was included among other topics. During 2014, the committee, led by the City of Sacramento, discussed and produced a template document with the intention of aligning water shortage stages among participating local governments through the adoption of the template in their ordinances and plans.

This template served as the basis for the third effort described in the remainder of this document. The committee requested that RWA host a workshop to facilitate discussion and finalize the template with its members, which include water districts in addition to cities and counties. The workshop was held on November 20, 2014 and was attended by 21 people representing 12 Sacramento region water providers. The workshop presented an opportunity for water providers to discuss specific water conserving actions within a framework of water shortage stages. Water providers also shared successful actions and strategies that have been adopted and implemented in the region so that water providers may better prepare water shortage contingency plans now and in the future. The tone of the workshop shifted from requesting water providers adopt a common shortage stage template for their service areas (as was the case in the first and second efforts) to one of producing a “tool” for water providers. This tool would be a resource for water providers to be used while updating relevant ordinances and plans such as urban water management plans. It should be noted that only water providers that serve more than 3,000 customers or supplying more than 3,000 acre feet of water annually (known as urban water suppliers) are required to submit an urban water management plan.

The activity in 2014 both from the second and third efforts was influenced by several external factors that provided an additional incentive to be successful. The historic statewide 2014 drought and the water supply conditions experienced at Folsom Reservoir in early 2014 required an extensive public outreach effort to urge customers to conserve water. The need to effectively communicate to the region’s water customers initiated the second effort to align water shortage stages. The Governor’s request for a 20% reduction in water use across the state in January 2014 supported these efforts.

Furthermore in July 2014, the State Water Resources Control Board (State Water Board), an entity tasked with ensuring the highest reasonable quality of waters for the State, while allocating those waters to achieve the optimum balance of beneficial uses, adopted emergency regulations. These emergency regulations outlined mandatory water waste activities that were prohibited for everyone in the state and included:

- Potable water to wash sidewalks & driveways

- Runoff when irrigating with potable water
- Hoses with no shutoff nozzles to wash cars
- Potable water in decorative water features that do not recirculate the water

The State Water Board additionally directed activities for implementation by urban water suppliers including restrictions on outdoor irrigation by activating the relevant stage in suppliers’ local water shortage stage plan and monthly reporting of water production (and additionally starting in October 2014 residential gallons per capita per day) data to the State Water Board. Local drought conditions and the outdoor irrigation requirement required by the State Water Board motivated many Sacramento area water providers to revisit and update their water shortage stage plans to be even more effective at responding to current water supply conditions and communicating with customers. Thirteen out of the region’s 20 water providers made changes to their plans during 2014.

Workshop Details

Attendees

The workshop was held on November 20, 2014 and was attended by 21 people representing 12 Sacramento region water providers (Table 2). The region’s public information officers, water conservation managers and staff, general managers and municipal parks managers were invited.

Table 2: 2014 Water Shortage Stage Workshop Attendees

Water Provider	Staff Attendees
Carmichael Water District	Steve Nugent and Chris Nelson
Citrus Heights Water District	Darlene Gillum
City of Folsom	Marcus Yasutake and Don Smith
City of Roseville	Kelye McKinney and Lisa Brown
City of Sacramento	Jim Peifer
Elk Grove Water District	Jim Malberg and Ellen Carlson
Placer County Water Agency	Linda Yager
Rio Linda/Elverta Community Water District	Mary Henrici
Sacramento County Water Agency	Kerry Schmitz, Mike Huot, Dan Gwaltney & Erika Nelson-Johnson
Sacramento Suburban Water District	Greg Bundesen
San Juan Water District	Vicki Sacksteder

Goals

The following three workshop goals were achieved during and after the workshop:

- To finalize the draft Regional Managers Forum template document and provide it as a tool (not requirement) to water providers in the Sacramento region.
- To facilitate discussion among water providers regarding the priority of stage-specific conservation actions taking into account recent experience from early 2014.
- To document and share lessons learned to aid other water providers that may modify their local water shortage stages in the future.

Agenda

The workshop agenda is provided below. It should be noted that the attendees did not prioritize conservation actions by stage. The workshop attendees were comfortable with including all suggested actions without ranking as all were seen as valuable with the understanding that all actions were part of an overall tool to assist water providers.

Water Shortage Stage Workshop

Regional Water Authority

November 20, 2014

- | | |
|-------------|--|
| 9:00-9:10 | Introduction and history of project |
| 9:10-9:30 | Survey the room <ul style="list-style-type: none">• Why are you interested in this workshop?• Has your water provider updated their water shortage stages in response to the drought? |
| 9:30-9:50 | Lessons learned <ul style="list-style-type: none">• The cities of Folsom and Roseville will provide a 10 minute summary of their experience with updating their water shortage stages during the drought. |
| 9:50-11:50 | Gather additional conservation actions by stage to add to the template <ul style="list-style-type: none">• This will be the focus of the workshop. We will walk through the provided template stage by stage to discuss the addition of conservation actions based on water provider experience. This will include a discussion about watering days/schedules. |
| 11:50-12:20 | Discussion about how and why to prioritize conservation actions for each stage <ul style="list-style-type: none">• Prioritize conservation actions within each stage. There will be a discussion first and then each participant will be given the opportunity to vote. |
| 12:20-12:50 | Lunch/Vote Tally |
| 12:50-1:30 | Complete the template <ul style="list-style-type: none">• We will reveal which conservation actions were identified as the priority actions per stage.• Wrap up with next steps. RWA will finalize the template and distribute out to all of the water providers to use as a tool to help assist with drought response. |

Assumptions

The workshop was facilitated under some basic assumptions described below that were presented and generally agreed upon by attendees.

- All work during the workshop would build upon the Regional Managers Forum template provided to attendees before and at the workshop.
- The attendees would focus on modifying stage percentages and conservation actions and would not drastically alter stage names and numbers.
- The resulting template and summary document would be utilized in the Sacramento region as a tool and would not be required for adoption by any water provider.

Case Studies

The workshop featured two case studies that focused on updating and enforcing water shortage stages.

City of Folsom

The City of Folsom updated its Water Conservation Ordinance during the last drought in 2009. The goal was to streamline enforcement by allowing water conservation staff to enforce the ordinance and impose penalties when warranted. Compliance became a term of service and fines were attached to the water bill. Currently Folsom's enforcement procedures recognize that parks and active sports fields are community assets. Parks and active sports fields are working with the City's Parks Department to achieve the desired percentage of water use reduction while preserving sports fields and trees in a safe condition. The goal is to coach to compliance, avoiding heavy handed enforcement, while mitigating economic damage as much as possible. To date this approach has been successful with Folsom's water customers regularly achieving water savings at or above 20%. In the future, the City is examining methods to focus more enforcement efforts on their mandatory percentage of water use reduction through data provided by their advanced metering infrastructure (AMI) technology.

City of Roseville

In 2014, Roseville declared a Stage 2 drought condition requesting a 20% overall reduction in water use from its customers. To help residential customers better understand what a 20% reduction meant, the City modified its WaterInsight Program to create a baseline (average 2011-2013 monthly water usage) and compared that baseline to actual 2014 usage. This allowed the WaterInsight Program customer reports to calculate and offer a 20% goal for the current month as well as the next two months. The City required a 30% reduction from its commercial irrigation customers. To assist these customers, staff created monthly water budgets to gauge success using individual site performance and tracked collective water use. Additionally the City updated its Water Conservation Ordinance for the 2014 drought allowing for more flexibility for the Parks Department for landscape management. This enabled them to sacrifice unused sites and focus more attention on high use areas. The City also contracted with a security firm to perform water waste patrols on commercial sites during specified evening hours. Lastly the City implemented a 15% drought surcharge on the commodity/volumetric portion of the water bill. The surcharge supplemented declining revenues as well as provided a price signal to customers to reduce water use. The surcharge was designed to be cost neutral to a customer if they reduced use by the required amount. In other words, customers saving 20% should not see an increase in their water bill.

Water Shortage Stage Template

Stage	Public Announcement Stage Name	Recommended Conservation (Water Use Reduction)	Suggested Actions
Normal	Normal Conditions	Use Water Efficiently	<p>Fix leaks or faulty sprinklers promptly/within X day(s).</p> <p>Decorative water features (water fountains, etc.) must recirculate water and shall be leak proof.</p> <p>All landscapes shall be watered during cooler morning and evening hours to reduce evaporation and minimize landscape runoff.</p> <p>Landscape watering shall be confined to a user's property and shall not runoff onto adjacent properties, roadsides or gutters.</p> <p>No landscape watering shall occur while it is raining or snowing.</p> <p>Use a shutoff nozzle on hoses.</p> <p>Washing down impervious surfaces such as driveways and sidewalks is prohibited unless for public health and safety purposes.</p> <p>Unauthorized use of hydrants is prohibited. Authorization for use must be obtained from water supplier.</p> <p>Commerical, industrial, institutional equipment must be properly maintained and in full working order.</p> <p>Encourage customers to wash only full loads when washing dishes or clothes.</p> <p>Encourage customers to use pool covers to minimize evaporation.</p> <p>Encourage restaurants to only serve water to customers on request.</p>
1	Water Alert	Up to 20%	<p>Fix leaks or faulty sprinklers within X day(s).</p> <p>Require restaurants to only serve water to customers on request.</p> <p>No restrictions on landscape watering with non-potable water.</p> <p>Up to 3 days per week turf watering when using potable water. Plant containers, trees, shrubs and vegetable gardens may be watered additional days using only drip irrigation or hand watering.</p>
2	Water Warning	Up to 30%	<p>Fix leaks or faulty sprinklers within X day(s).</p> <p>Decorative water features that use potable water must be drained and kept dry.</p> <p>Car washing is only permitted using a commercial carwash that recirculates water or by high pressure/low volume wash systems.</p> <p>Require a construction water use plan be submitted to the water supplier that addresses how impacts to existing water users will be mitigated (such as dust control).</p> <p>With the exception of landscapes watered with non-potable water, limit the installation of new landscaping to drought tolerant trees, shrubs and groundcover. Prohibit installation of new turf or hydroseed. Customers may apply for a waiver to irrigate during an establishment period for the installation of new turf or hydroseed.</p> <p>Warm/Dry Season</p> <p>Up to two days per week turf watering when using potable water.</p> <p>Plant containers, trees, shrubs and vegetable gardens may be watered additional days using only drip irrigation or hand watering.</p> <p>Cool/Wet Season</p> <p>Turf shall not be watered unless utilizing non-potable water during extended dry spells.</p> <p>Plant containers, trees, shrubs and vegetable gardens shall be watered only by drip irrigation or hand watering.</p>
3	Water Crisis	Up to 40%	<p>Fix leaks or faulty sprinklers within X day(s).</p> <p>Existing pools shall not be emptied and refilled using potable water unless required for public health and safety purposes.</p> <p>No new permits for pools will be issued.</p> <p>No new landscape installations or renovations will be permitted.</p> <p>Previous waivers for watering during an establishment period will be revoked.</p> <p>Warm/Dry Season</p> <p>Up to one day per week turf watering when using potable water.</p> <p>Plant containers, trees, shrubs and vegetable gardens may be watered additional days using only drip irrigation or hand watering.</p> <p>Cool/Wet Season</p> <p>Turf shall not be watered unless utilizing non-potable water during extended dry spells.</p> <p>Plant containers, trees, shrubs and vegetable gardens shall be watered only by drip irrigation or hand watering.</p>
4	Water Emergency	Up to 50%	<p>Water use for public health and safety purposes only.</p>

Water Shortage Stage Template Commentary

First and foremost the suggested actions listed above in the Water Shortage Stage Template are provided as a tool to assist water providers in the development of their water shortage contingency plans. Each water provider retains discretion in its selection of the specific language, actions and requirements to include in each stage of its water shortage contingency plan. The Regional Water Authority and workshop attendees fully acknowledge that not all water providers in the region may be able to adopt this template language in whole or in part due to legal, local preference, water supply, and/or water demand reasons among others. The template is merely provided as a tool to assist water providers.

This template addresses some but not all components of water shortage stages. For this reason, water providers that choose to use this template will have to additionally customize it for completion. There are several areas for individual water provider customization including:

- Defining Warm/Dry and Cold/Wet seasons, such as Warm/Dry is March-October and Cold/Wet is November-February.
- Defining number of days customers have until leaks need to be fixed, currently represented by “X” in the template.
- Defining terms within the template such as water waste, establishment period, non-potable water, faulty sprinkler, decorative water features, runoff, etc. Some of these terms may be already defined in a water provider’s local ordinances, however, some water providers may have to create definitions to accompany this template, if used and applicable.

Furthermore the template does not address enforcement strategies such as warnings, fines and penalties that may be associated with each stage. Enforcement will be determined by individual water providers in accordance with the departments, entities, or local powers that are responsible for such enforcement.

Water shortage stages are part of a broader water shortage contingency plan. Water shortage contingency plans are part of a water provider’s broader urban water management plan. Water providers that supply water to over 3,000 customers or supply more than 3,000 acre feet annually must prepare and submit an urban water management plan to the California Department of Water Resources every five years. The next iteration of plans are for 2015. For more information on urban water management plans and water shortage contingency plans, visit the California Department of Water Resources’ Urban Water Management webpage.²

Updating water shortage stages is a complex task that influences many different sectors within a water provider’s service area, especially if service area boundaries overlap with multiple local government boundaries. The workshop attendees identified several areas for potential complication while using the template as a tool to update their water shortage contingency plans including:

- Conflicting and/or pre-existing local and county ordinances or practices
- Individual water provider Board/Council/Management preferences
- Changing state, regional and local policies and regulations

² www.water.ca.gov/urbanwatermanagement/

- The inclusion of drought rates to water shortage stage language and the related need to comply with Proposition 218.³

Despite identifying several challenges, the workshop participants were able to reach consensus on several items including:

- General agreement by attendees to use the stage “name” instead of “number” in outreach materials to reduce confusion to customers while remembering that perhaps the most effective way to communicate with customers is to speak in percent reductions such as 20% or 30% conservation. This communicates to the customer the goal, which is saving a certain percentage of water to respond to dry conditions.
- General agreement by attendees on the percentage reductions and suggested actions portion of the water shortage stage template **as a tool**. Attendees generally agreed on percentage reductions for each stage because they are written as “up to” percentages which provide another layer of customization to local water providers to respond to the needs of their individual service areas.

Next Steps

The Regional Water Authority (RWA) will distribute this finalized summary document as a tool and will provide technical assistance, as requested, to all its’ member water providers as they choose to embark on updating their water shortage contingency plans. RWA will collect and review member water providers’ water shortage contingency plans to track the usage and adoption of elements from the water shortage stage template provided in this document. RWA will continue to coordinate with the Regional Managers Forum and will provide updates to the Forum as necessary.

Additional Resources

In addition to this document, there are several other helpful resources that can assist a water provider when they choose to update their water shortage contingency plan.

- Governor’s Office of Planning and Research, Local Government Drought Toolkit⁴
This resource contains a water shortage stage template with extensive attention to potential suggested actions for each stage.
- Contact the Regional Water Authority for the region’s most recent collection of member water providers’ water shortage contingency plans.⁵

³ For more information about Proposition 218 see Association of California Water Agencies’ Proposition 218: Local Agency Guidelines for Compliance (2007). www.acwa.com/products/acwa-issue-guidelines/proposition-218-local-agency-guidelines-compliance

⁴ www.opr.ca.gov/docs/Local_Government_Drought_Toolkit_March_10_2014.pdf

⁵ Regional Water Authority, 5620 Birdcage, Suite 180, Citrus Heights, California, 916.967.7692 or www.rwah2o.org.