

# Appendix 6-3

Drought Response Plan (2008)

**City of Olympia**  
**Drought Response Plan**

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**June 2008**

**City of Olympia**  
**Public Works Department**  
**Water Resources Program**



# City of Olympia Drought Response Plan

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## **BACKGROUND**

According to the National Drought Mitigation Center, drought is inevitable and is a normal part of virtually every climate on the planet, even rainy ones. Certainly, this is the case in Olympia, Washington. While 30-year averages indicate we receive about 50 inches of rain every year, only two of those inches fall in July and August. This is our “predictable” weather pattern, and our water conservation program addresses water use during the summer months. In 2001 the City adopted its first formal Drought Plan to address more severe drought conditions. This plan is an update of that plan.

### **Weather Categories Causing Drought**

The City of Olympia’s water system relies on rainfall to recharge the aquifers that feed McAllister Springs and our supply wells. We project the amount of water our customers will consume based on historical usage and demand forecasting models. Highly unusual weather events can affect this relatively predictable cycle.

These weather events fall into two categories. The first is a less than average fall/winter precipitation. We depend on winter rains to recharge our aquifers. Since Olympia’s water system draws from deep underground aquifers, we would be unlikely to experience an *immediate* reduction in groundwater supply following one dry winter. However, two consecutive dry winters would likely have a more significant impact on the City’s water supply sources.

The second weather pattern that could cause a potential water shortage is a summer of sustained higher than normal temperatures and lower than normal precipitation. Both of these conditions can contribute to above-average demand and an accelerated drawdown of the City’s water supplies.

### **State Authority**

In 1989, the State Legislature gave the Washington State Department of Ecology permanent authority to declare drought conditions in areas where:

- the water supply is below 75 percent of normal or projected to fall below this level, and
- the shortage is likely to create undue hardship for some water users.

The State Department of Health requires utilities to prepare Water Shortage Response Plans.

### **Conservation vs. Curtailment**

There are important differences between a long-term conservation program and curtailment actions. Olympia has had an aggressive water conservation program in place since 1996. The program targets both indoor and outdoor water use for all our customers (residential, commercial, and institutional). Olympia’s water conservation projects encourage customers to voluntarily increase their water use efficiency in a manner that is sustainable.

In contrast, curtailment is designed to quickly reduce water usage. It is relatively short-termed and usually involves perceived “hardships” for the customer. It generally involves mandatory measures.

The focus of the public message and information strategy is different for each program. The long-term conservation message of environmental stewardship, water use efficiency, and saving money shifts during water supply shortage situations to a more personal message such as, *"If everyone cuts back, we will have enough water for your essential needs."*

### **Drought Response Team**

When a **potential** water shortage is identified, the Drought Response Team would be assembled to consider whether this plan should be implemented. The team would be comprised of the following staff:

- Water Conservation Program Coordinator (Chair)
- Drinking Water Planning and Implementation Section Supervisor
- Water Quality Section Supervisor
- Drinking Water Operations Supervisor
- Wellhead Protection Program Coordinator
- Public Works Communications Supervisor
- Drinking Water Liaison Engineer
- Community Planning and Development Department’s Development Engineering Supervisor.

The team would recommend the appropriate level of implementation and specific response actions to the Water Resources Leadership Team, subject to review by the Public Works Director.

A variety of factors would form the basis of these decisions, including:

### ***Water Supply Factors***

- Total supply availability, including interties.
- Groundwater rights status for that particular year.
- Operational condition of McAllister Springs, City wells, reservoirs, and other facilities.
- The rate of decline in aquifer levels compared with the normal operating levels.
- Surface water situations in proximity to City wells.
- Amount of time required to implement a supply-enhancement measure.

- Weather conditions as derived from short- and long-term weather forecasts and modeling by the National Weather Service.

### ***Water Demand Factors***

- Current trends and seasonal forecasts for the system's daily water demands.
- The estimated margin of safety provided by the demand reduction compared with the level of risk assumed if no action is taken.
- Amount of time required to implement a water use reduction measure.
- Magnitude of expected savings provided by a water use reduction measure.

### ***Other Factors***

- The value of lost water sales revenue compared with the increased margin of supply reliability.
- Consultation with elected officials, state resource agencies, the county, interested organizations, and the Nisqually Tribe.
- Required time lags to institute measures.
- Ultimate cost to City customers, both residential and commercial.
- Equity in demand reduction between customer classes.
- Current events.
- Actions taken by neighboring jurisdictions (i.e. Cities of Lacey and Tumwater), which influence or directly affect City residents.
- Environmental benefits.

### **Four Stages of Drought Response**

This plan includes four stages of drought response. The stages include:

1. Advisory
2. Voluntary
3. Mandatory
4. Emergency Curtailment

As drought conditions become more serious, we would implement the higher stages of response. Each has progressively stringent requirements to coincide with conditions of increasing severity. Appendix A contains a matrix that provides an overview of possible management actions and the stages at which they would most likely be implemented.

In the Advisory Stage, customers would be informed as early as meaningful data is available that water supply and demand conditions may result in a less than normal supply of water. If the supply and demand situation foreseen at the Advisory Stage develops, we would move to the Voluntary Stage, which relies on the voluntary cooperation and support of customers to meet water use reduction goals. If the voluntary measures do not provide the necessary reduction in water use, the Mandatory Stage would be implemented. The Emergency Curtailment Stage would only be used when extraordinary levels of reduction are required to ensure that demand does not exceed supply and that public health and safety are not compromised.

Following is a detailed discussion of the four stages, including objectives, triggers, public messages, internal operating actions, communication actions, and supply and demand actions.

## **ADVISORY STAGE**

### **Objectives**

- Prepare City staff, relevant agencies, and water users for a potential water shortage, thereby allowing all parties adequate time for planning and coordination.
- Undertake supply management actions that forestall or minimize the need for more stringent demand or supply management actions later on.

### **Triggers**

There are a variety of conditions that may cause concern about water availability and signal a potential water shortage. Conditions that may trigger the Advisory Stage include:

1. Aquifer levels that are historically low in October/November (when levels are at their annual lowest). Staff would begin monitoring precipitation and analyzing all available data. If aquifer levels do not come up to historical levels, we would declare an Advisory Stage in March.
2. Aquifer levels that are significantly below historical normals for the current time of year, and data indicates that expected demands may not be met if this trend worsens or continues.
3. Lower than normal winter precipitation.

The Advisory Stage may be discontinued when water supply conditions return to a normal situation.

### **Public Message**

*“The potential exists for lower than normal water supply. Customers may be asked to reduce consumption unless conditions return to normal. Please use water wisely. We will keep you informed.”*

### **City of Olympia Internal Operating Actions**

1. Convene the City's Drought Response Team to evaluate conditions, determine actions, and assign tasks.
2. Intensify communication with all City staff so they can communicate our message clearly to concerned customers.
3. Intensify data collection actions for well pumping records, tank level records, monitoring aquifer levels, flow at springs, and weather conditions.
4. Assess current water main flushing activities to determine whether they should be accelerated so they are completed prior to the peak season or reduced to conserve supply.
5. Assess water quality in the distribution system to target areas that may experience degradation with reduced consumption.
6. Develop a list of critical water uses and users.
7. Reduce watering of City-owned and managed landscapes. Reduce or eliminate seasonal plantings. Appendix B contains a list of recommendations by Olympia's Parks Maintenance Supervisor regarding irrigation water use reduction steps in Parks-managed landscapes.
8. Initiate planning and preparation for Voluntary Stage actions, including an assessment of potential staffing impacts, training needs, and communications strategies.

### **Communication Actions**

1. Brief Public Works Leadership Team, Senior Management Team, Utility Advisory Committee, City Manager, City Council, and all City staff members.
2. Consult with and provide status reports to state resource agencies, interest groups, and Native American Tribes. Specific entities include Thurston County PUD #1, Cities of Lacey and Tumwater, Nisqually Tribe, Squaxin Island Tribe, Thurston County, State Department of Health, State Department of General Administration, interested environmental and community organizations, and large commercial customers.
3. Develop a status report for customers/businesses with special interests, such as the landscape and nursery industry and developers.
4. Develop and distribute public outreach and education materials explaining the drought response stages and expected ranges of actions through a variety of communication channels (i.e., print and radio media, TCTV, City website, direct mail, etc.). Post updated status reports on the City's website and through other communication channels. Prepare information for customers, including developers, who may be planning new landscaping.

## **VOLUNTARY STAGE**

### **Objectives**

The objectives of the Voluntary Stage are to:

- Inform City water customers of a water shortage and the need to reduce water use and eliminate water waste.
- Reduce water use to meet consumption goals through voluntary customer actions.
- Forestall or minimize the need for more stringent demand or supply management actions.
- Minimize the disruption to customers while meeting consumption goals.
- Maintain the highest water quality standards throughout the shortage.

### **Triggers**

The Voluntary Stage may be implemented when a combination of the following conditions occurs:

1. Aquifer levels continue to be low.
2. Rainfall is significantly less than normal by April 1.
3. The summer is predicted to be hot and dry.
4. Water use demand projections indicate a systematic response to reducing demand is required.

### **Public Message**

*“We are relying on the support and cooperation of **all** water users to reduce consumption and stretch the available water supply. Water use needs to be reduced by \_\_\_\_\_ percent, approximately \_\_\_\_\_ gallons per household per day. Customers are responsible for determining how they will meet that goal. Water waste is not allowed. If everyone cooperates, more stringent restrictions may be avoided. In addition to meeting essential water needs of customers, the needs of fish habitat and other environmental concerns is a priority.”*

### **City of Olympia Internal Operating Actions**

1. Continue Advisory Stage actions.
2. Drought Response Team to prepare weekly reports for distribution to staff and local media on supply conditions and consumption levels.

3. Drought Response Team will consider the current and projected supply conditions and seasonal demand and set consumption goals that may be revised as necessary.
4. Reduce all operating system water uses to essential levels.
5. Reduce irrigation at City-owned and managed landscapes. Reduce or eliminate seasonal plantings (Appendix B).
6. Reduce washing of City fleet vehicles; request that City departments bring fleet vehicles to commercial car washes that recycle water.
7. Eliminate hosing of sidewalks, driveways, parking lots, etc., at City facilities except in situations where it is necessary for public health and safety.
8. Activate any existing emergency interties as necessary to increase emergency supply availability.
9. Increase water quality monitoring actions as necessary.
10. Drought Response Team will evaluate whether target consumption levels and supply conditions warrant a rate surcharge to reinforce voluntary actions and/or to recover revenue losses. The Drought Response Team would make recommendations to the City Manager for recommendation to the City Council.
11. Implement staffing reassignments as needed and plan staffing changes that may be needed for the Mandatory Stage, including staff to enforce mandatory restrictions.

### **Communication Actions**

1. Drought Response Team would establish systematic communications with Public Works Leadership Team, Senior Management Team, City Manager, and City Council, including the suggested nature and scope of the voluntary measures and strategies.
2. Consult with and provide status reports to state resource agencies, interest groups, and Native American Tribes (Appendix C). Specific entities include Thurston County PUD #1, Cities of Lacey and Tumwater, Nisqually Tribe, Squaxin Island Tribe, Thurston County, State Department of Health, State Department of General Administration, interested environmental and community organizations, and large commercial customers. Post updated status reports on the City website.
3. Develop and implement a comprehensive public awareness and education campaign with the goal of keeping customers informed about supply and demand conditions. This campaign will recommend customer actions to significantly reduce demand, reinforce desired customer actions, and remind customers that if goals are not achieved, mandatory restrictions may be necessary. The campaign may include press releases to the local print media and television and radio stations, publishing in *The Olympian* and the City website a list of recommended actions for customers to take to reduce their water consumption, a

direct mailing to all City customers with a list of the recommended actions, and other appropriate strategies.

4. Promote consumption goals for typical households and a percentage reduction goal for commercial customers.
5. Prepare a current list of commercial car washes in Olympia that recycle water.
6. Contact the City's largest water users and request a percentage reduction. Contact other public agencies to inform them of conditions and request their cooperation.
7. Identify customers with large irrigation accounts and promote the use of daily weather information, such as rainfall and reduced evapotranspiration (ET) rates to minimize irrigation use. Provide current ET rates on CityLine or the City's website.
8. Provide water quality information in public information so that if flushing is necessary, the public understands that it is essential for water quality maintenance.
9. Initiate remaining planning and preparation for the Mandatory Stage.
10. Establish and promote "hotlines" on CityLine for customers to obtain additional water conservation information.
11. Establish regular communication with Public Works Department and City employees, especially staff that has regular contact with the public, such as Utility Billing representatives, meter readers, and Water Section crew. Keep them up to date on conditions, goals, and City actions so they can provide accurate information to our customers.

### **Supply & Demand Management Actions**

1. Assigned staff will "tag" observed obvious water waste, such as hoses without shutoff nozzles, irrigating during the heat of the day, excessive water running into storm drains, etc., with a Water Waste Notice that informs the customer about the supply conditions and the need to reduce water waste.
2. Evaluate the ability to accelerate or enhance long-term conservation programs and implement as appropriate.
3. Request state, county, and private organizations eliminate washing of fleet vehicles except at commercial car washes that use recycled water.

Voluntary customer actions are included in Appendix D.

## **MANDATORY STAGE**

### **Objectives**

The objectives of the Mandatory Stage are to:

- Achieve targeted consumption reduction goals by restricting defined water uses.
- Ensure that an adequate water supply will be available during the duration of the water shortage to protect public health and safety and to provide sufficient in-stream flows for fish habitat.
- Minimize the disruption to customers' lives and businesses while meeting target consumption goals.
- Promote equity among customers by establishing clear restrictions that affect all customers.

### **Triggers**

The Mandatory Stage would be implemented when:

1. We lose any one of our wells due to decreased aquifer level (75 percent of normal based on historical spring static water level). We would remain at the Mandatory Stage until this well comes back into service.
2. The current water supply would not be able to meet demand projections.
3. Measures implemented in the Voluntary Stage are not adequately reducing demand.
4. The time available to implement measures to reduce water use is not sufficient to allow education of customers required for voluntary compliance.
5. It is evident the level of water use reduction required would not be achieved through voluntary compliance.

### **Public Message**

*“We are imposing mandatory restrictions to reduce demand because the voluntary approach is not resulting in necessary water use reductions. We are continuing to rely on the support and cooperation of our customers to reduce water use. However, we need the certainty and predictability of restricting certain water uses. This way, we can ensure that an adequate supply of water is available for public health and safety throughout this shortage.”*

### **City of Olympia Internal Operating Actions**

1. Continue actions from Advisory and Voluntary Stages, as appropriate.
2. The Drought Response Team would develop a list of recommended water use restrictions and exemptions from restrictions.

3. The Drought Response Team would finalize and implement a process for receiving, recording, and responding to reported violations of restrictions.
4. The Drought Response Team would make recommendations to move to the Mandatory Stage and adopt mandatory restrictions, emergency surcharges, and fees to the City Council for adoption, subject to the City Manager's approval. The Drought Response Team would recommend the nature, scope, and timing of restrictions.
5. Work with City of Olympia Parks Maintenance Supervisor to restrict irrigation levels in park areas to levels that meet or exceed the irrigation restrictions while maintaining public safety (Appendix B).
6. The Drought Response Team would finalize and implement enforcement procedures and assess fines where mandatory restrictions are not followed (Appendix E, Mandatory Restrictions Enforcement Checklist). The Drought Response Team would review and process all requests for exemptions from mandatory requirements.
7. Work with the City of Olympia Fire Department to ensure that they are complying with mandatory restrictions (Appendix F).
8. Initiate planning and preparation for the Emergency Curtailment Stage.

### **Communication Actions**

1. Drought Response Team will provide periodic reports to the Public Works Leadership Team, Senior Management Team, and City Council, including the suggested nature and scope of the mandatory restrictions, implementation strategies, and customer response data.
2. Consult with and provide status reports to state resource agencies, interest groups, and Native American Tribes (Appendix C includes a list of appropriate contacts). Specific entities include Thurston County PUD #1, the Cities of Lacey and Tumwater, the Olympia and North Thurston School Districts, Nisqually Tribe, Squaxin Island Tribe Thurston County, Washington Department of Fish and Wildlife, Washington State Parks, Washington Department of Natural Resources, interested environmental and community organizations, and large commercial customers. Post updated status reports on the City website.
3. Through a media campaign and direct mail communicate:
  - Scope and nature of mandatory restrictions.
  - Reasons for imposing the restrictions.
  - Consumption goals and ways in which to achieve those goals.

- Additional restrictions that may be imposed if water use reduction goals are not achieved.
  - Enforcement mechanisms and fines.
  - Rate surcharges.
  - Projections for how long restrictions will be in place.
4. In communicating mandatory restrictions to the public, a clear distinction will be made between lawn/turf watering and watering gardens and ornamental plantings. The type and amount of watering will be clearly defined.
  5. Any exemptions from water use restrictions will be clearly identified.
  6. Contact irrigation customers and inform them that the City may shut down their irrigation meters in the event of an immediate water shortage situation.
  7. Provide area landscape management and property management companies with water use restriction information.
  8. Restrict hydrant usage to essential purposes, including recall of hydrant meters previously issued. This should include contacting each registered hydrant user. Require the use of best management practices (BMPs) to reduce water use, meet operational needs, and provide for dust control. If reclaimed water is available, all hydrant meters may be rescinded.
  9. Post updated status reports on the City website.
  10. Establish a “Customer Hotline” on CityLine for residents to report violations of restrictions.
  11. Continue and enhance communication actions from the Advisory and Voluntary Stages.
  12. Work with the City’s Community Planning and Development Department to defer landscape installation requirements until the shortage is over. **No exemptions will be allowed for watering new lawn installations.**
  13. Advise the Fire Department to discontinue the use of water in training exercises until the emergency is over.
  14. Evaluate resources and plans for moving into the Emergency Curtailment Stage. As appropriate, begin preparatory measures.

### **Supply & Demand Management Actions**

The Drought Response Team will review, evaluate, and recommend possible restrictions to the City Manager for authorization by the City Council.

The following is a list of *possible* watering restrictions. The nature of the restrictions actually used will depend on the situation, and may change as the severity of the situation changes.

1. Prohibit all watering during the warmest hours of the day, for example between 9:00 a.m. and 7:00 p.m.
2. Limit all watering to a specific number of days per week or per month. The option chosen will depend on target consumption goals, the time of year and the extent to which watering is occurring, and how much demands have already decreased.
3. Ban lawn watering, with other landscape watering prohibited during the warmest hours of the day—for example, between 9:00 a.m. and 7:00 p.m.
4. Prohibit use of any ornamental fountain using drinking water for operation or makeup water.
5. Prohibit car washing except at commercial car wash facilities that recycle water.
6. Prohibit washing of sidewalks, streets, decks or driveways except as necessary for public health and safety.
7. Limit pressure washing of buildings to situations that require it as part of a scheduled building rehabilitation project (e.g., painting).
8. Prohibit water waste, including untended hoses without shut-off nozzles, obvious leaks, and water running to waste, such as gutter flooding, and sprinklers/irrigation whose spray pattern unnecessarily and significantly hits paved areas.
9. If a source of reclaimed water is available, prohibit use of drinking water for dust control at construction areas.

### **Exemptions**

1. If a source of reclaimed water is not available and dust control is required to comply with air quality requirements, water may be applied to construction areas or other areas at the minimum rate necessary to achieve the desired result provided that all appropriate best management practices are being employed.
2. Ballfields and playfields may be watered at the **minimum rate necessary** for safety purposes and dust control.

3. Customers with special medical needs, such as home dialysis, will be exempted from any emergency surcharge or restrictions, provided these customers notify the City of such a need. Their exemptions will not apply to outdoor water use.

If water supply conditions continue to deteriorate and if irrigation is still occurring, lawn watering will be banned before moving to the Emergency Curtailment Stage.

## **EMERGENCY CURTAILMENT STAGE**

At this stage, the City would recognize that a critical water situation exists. Without additional significant curtailment actions, a shortage of water for public health and safety would be imminent.

This stage is characterized by two basic approaches. First, increasingly stringent water use restrictions would be established and enforced. Secondly, significant rate surcharges would be used to encourage customer compliance. While a rate surcharge may be implemented in either the Voluntary or Mandatory stages, a surcharge is a key component to the success of this stage, and any previous surcharge may be increased if appropriate.

### **Objectives**

The objectives of the Emergency Curtailment Stage are to:

- Ensure that throughout the water shortage, an adequate water supply exists to protect public health and safety.
- Sharply reduce water demand.
- Restrict certain defined water uses in order to meet consumption goals.

### **Triggers**

The Emergency Curtailment Stage would be implemented when the Drought Response Team determines that:

- We are unable to make chlorine contact time (water is being used faster than the required treatment time).
- We are unable to use two wells due to decreased aquifer levels.
- We are unable to fully use McAllister Springs due to water quality concerns (pulling water from the lagoon).
- Measures to reduce water use implemented in the Voluntary and Mandatory Stages have not adequately reduced demand.
- The time available to implement measures to reduce water use is not sufficient to allow education of customers required for voluntary or mandatory compliance.

## **Public Message**

The public message would be determined based upon actual conditions of the emergency.

*“A water supply emergency exists. Severe restrictions on water use are necessary to maintain adequate water supplies essential for basic public health and safety. The public’s continued cooperation is requested. Restrictions will be strenuously enforced.”*

## **City of Olympia Internal Operating Actions**

1. The Drought Response Team would define the water shortage as an emergency and, through the City Manager, would implement procedures for the Council to formally declare a Water Shortage Emergency.
2. The Drought Response Team would develop a list of water use restrictions, prohibitions, exemptions, and surcharge rates for recommendation to City Council for consideration through the City Manager.
3. The Drought Response Team would increase the frequency of reports to the City Manager and City Council. Reports would provide detail on the implementation of the Emergency Curtailment Stage and customer response data.
4. The Drought Response Team would establish water use reduction goals. Consumption goals may be set in a variety of ways. Determining factors include equity among customers and the utility billing software in use. Single-family residential goals may be set as a standard per house allotment or as a percentage reduction from the previous year’s consumption. Consumption goals may be below customers’ average winter month use. Commercial, institutional, and multifamily residential customers may be asked to reduce water use by a set percentage of their average consumption during the previous year.
5. Adjust or modify utility billing systems to implement any approved surcharges and penalties.
6. Increase enforcement actions in accordance with the applicable ordinance approved by the City Council.
7. Provide training for personnel and deploy additional “Water Watcher” patrols.
8. Notify the Police Department regarding enforcement of curtailment actions and coordinate with them regarding the potential need for enforcement assistance.
9. Further enhance aquifer and water quality monitoring actions.
10. Drought Response Team to increase meeting frequency to daily status briefings to review the current situation and determine which actions are working and those that need to be

improved. Focus on messages that are easy to communicate, implement, and have the potential to sharply reduce demand.

### **Communication Actions**

1. Define the problem to the public as an emergency, and institute formal procedures to declare a citywide emergency.
2. Inform customers of the rate surcharge and how it will affect them. Provide information on an appeal process.
3. Define and communicate exemptions for medical facilities and other public health situations.
4. Consult with and provide status reports to state resource agencies, interest groups and Native American Tribes. Specific entities include Thurston County PUD #1, the Cities of Lacey and Olympia, the Olympia and North Thurston School Districts, Thurston County, Washington Departments of Health, General Administration, Fish and Wildlife, and Natural Resources; interested environmental and community organizations and large commercial customers. Post updated status reports on City website.
5. Through a media campaign and direct mail communicate to City customers the:
  - Scope and nature of rationing and curtailments,
  - Reasons for imposing the curtailments,
  - Water use reduction goals,
  - Enforcement mechanisms and fines,
  - Projections for how long curtailments will be in place, and
  - Rate surcharges.
6. Clearly identify any exemptions from the water use curtailment.
7. Inform customers about possible pressure reductions and problems this may cause.
8. Provide area landscape firms with water use curtailment information.
9. Provide contractors and landscape firms with information on locations to obtain reclaimed water for street cleaning, construction projects, landscape irrigation, dust control, etc.
10. Post updated status reports on the City website.
11. Continue and enhance communication actions from the Advisory, Voluntary, and Mandatory Stages.

### **Supply & Demand Management Actions**

The following are possible Emergency Curtailment water use restrictions. All appropriate actions identified in the previous three phases of the drought response should be implemented in conjunction with these measures.

1. Prohibit all lawn/turf irrigation.
2. Prohibit all irrigation of gardens and ornamental landscapes.
3. Prohibit use of any ornamental fountain using drinking water for operation or makeup water.
4. Prohibit car washing except at commercial car wash facilities that recycle water.
5. Rescind all hydrant meters.
6. Prohibit washing of sidewalks, streets, decks, or driveways except as necessary for public health and safety.
7. Prohibit pressure washing of buildings unless water is obtained from sources other than the City.
8. Prohibit filling or adding water to swimming pools at public and private facilities.
9. Require the Fire Department to discontinue the use of water in training exercises until the emergency is over.
10. If available, provide reclaimed water to tanker trucks for street cleaning, construction projects, landscape irrigation, dust control, etc.
11. Consider limitation of issuance of new meter installations for irrigation and/or domestic uses.

### **Exemptions**

1. If a source of reclaimed water is not available and dust control is required to comply with air quality requirements and dust control and other hydrant water uses are determined to be necessary to meet essential health and safety requirements, water may be applied to construction areas or other areas at the minimum rate necessary to achieve the desired result, provided that all appropriate best management practices are being employed.
2. Customers with special medical needs, such as home dialysis, will be exempt from any emergency surcharge or restrictions, provided these customers notify the City of such a need. Their exemptions will not apply to outdoor water use.

## APPENDIX A

### City of Olympia Drought Response Plan Matrix of Drought Response Actions

**Note:** The following matrix is intended to provide an overview of the possible management actions and the stages at which they would most likely be implemented. Additional and/or alternative management actions may be necessary.

Action	Drought Management Phase				Comments
	Advisory	Voluntary	Mandatory	Curtailment	
<b>Communications</b>					
Media coordination.	X	X	X	X	
Develop & implement public outreach and education plan.	X	X	X	X	
Coordination with resource agencies and local jurisdictions.	X	X	X	X	
Coordination with largest water users.	X	X	X	X	
Establish customer hotlines.		X	X	X	
Notify irrigation customers of potential shut down procedures.			X	X	
<b>Internal Operating Actions (City)</b>					
Drought Response Team coordination & planning.	X	X	X	X	
Reduce all Maintenance & Operations water uses to essential levels.		X	X	X	
Reduce washing of City fleet vehicles.		X	X	X	
Eliminate hosing of sidewalks, driveways, parking lots, etc., at City facilities.		X	X	X	Exemptions for public health or safety.
Reduce watering of City-managed landscapes. Eliminate seasonal plantings.	X	X	X	X	Meet or exceed citywide water use restrictions.
As necessary, activate emergency interties to		X	X	X	

Action	Drought Management Phase				Comments
	Advisory	Voluntary	Mandatory	Curtailment	
increase emergency supply availability.					
Assess water main flushing activities. Increase water quality monitoring actions as necessary.	X	X	X	X	
Finalize water use restrictions, exemptions, and enforcement procedures and penalties.			X	X	Subject to approval of City Council.
Surcharges & penalties.			X	X	
“Water watcher” patrols.			X	X	
Declare water emergency.				X	
<b>Supply &amp; Demand Management Actions</b>					
Residential indoor water use recommendations/tips.	X	X	X	X	
Residential outdoor water use recommendations/tips (non-landscape).	X	X	X	X	
Residential landscape water use recommendations/tips.	X	X	X	X	
Commercial water use recommendations/tips.	X	X	X	X	
Commercial landscape water use recommendations/tips.	X	X	X	X	
Water waste prohibition.			X	X	
<b>Landscaping</b>					
Time of day watering restrictions (i.e., prohibited from 7 p.m. to 9 a.m.			X	X	
Day(s) of week lawn watering restrictions.			X	X	

Action	Drought Management Phase				Comments
	Advisory	Voluntary	Mandatory	Curtailment	
Prohibit all lawn/turf watering, including new installations.			X	X	Delay of installation & bonding requirements possible. Possible exemptions for ballfields/playfields for safety purposes. All lawn watering banned prior to moving to Curtailment Stage.
Prohibit all garden/ornamental landscape watering.				X	
Ornamental fountain restrictions.		X	X	X	Prohibited at Mandatory and Curtailment Stages.
Car washing restrictions.		X	X	X	Request at Voluntary Stage, restrictions as necessary.
<b>Construction &amp; Facility Water Uses</b>					
Restrict /rescind hydrant use permits.			X	X	
Construction site water use restrictions, dust control best management practices required.			X		Water use prohibited only if reclaimed water is available. Best management practices required.
Construction site water use restrictions.				X	Water use prohibited. Reclaimed water may be used. Exemptions as necessary to meet air quality regulations.
Sidewalk, deck, and driveway washing restrictions.			X	X	Except as necessary for public health or safety.
Building pressure washing restrictions.			X	X	Limited at Mandatory Stage, prohibited at Curtailment Stage
Fire Department training exercise restrictions.		X	X	X	Requested at Mandatory Stage, restricted at Curtailment Stage.
Swimming pool water use restrictions.			X	X	Prohibited at Curtailment Stage—public and private.

## APPENDIX B

### Irrigation and Drought Response for City of Olympia Parks-Managed Sites

Site	Stage II	Stage III	Stage IV	Comment
<b>Parks (Includes Farmers Market Circle and Percival Landing)</b>				
<b>Landscape</b>	On	Reduce by 25-60%	100% reduction	The landscapes should be hand watered until Stage IV (Mandatory Curtailment) is reached.
<b>Turf</b>	On	Reduce by 25-60%	100% reduction	The athletic fields need to be kept safe and irrigated if their use will be allowed.
<b>Buildings and Plum Street Sign</b>				
<b>Landscape</b>	On	Reduce by 25-60%	100% reduction	
<b>Turf</b>	Off	Off	Off	
<b>Median's and Street Features (Except Farmer's Market Circle and Plum St Sign)</b>				
<b>Landscape</b>	Off	Off	Off	
<b>Turf</b>	Off	Off	Off	

Site Type	Voluntary Stage	Mandatory Stage	Emergency Stage	Comment
<b>Parks (Includes Farmers Market Circle and Percival Landing)</b>				

<b>Site Type</b>	<b>Voluntary Stage</b>	<b>Mandatory Stage</b>	<b>Emergency Stage</b>	<b>Comment</b>
<b>Landscape</b>	On	Reduce by 25-60%	100% reduction	The landscapes should be hand watered until Mandatory Stage is reached.
<b>Turf</b>	On	Reduce by 25-60%	100% reduction	The athletic fields need to be kept safe and irrigated if their use will be allowed.
<b>Buildings and Plum Street Sign</b>				
<b>Landscape</b>	On	Reduce by 25-60%	100% reduction	
<b>Turf</b>	Off	Off	Off	
<b>Median's and Street Features (Except Farmer's Market Circle and Plum St Sign)</b>				
<b>Landscape</b>	Off	Off	Off	
<b>Turf</b>	Off	Off	Off	

## **APPENDIX C**

### **City of Olympia Drought Response Contact List**

A working list of contacts for easy reference should be developed and regularly updated by staff in the Water Conservation Office. In the event of a water shortage caused by a drought, the following will be contacted directly. They will be apprised of the situation, and their support and cooperation in reducing demand will be requested.

#### **Other Public Agencies**

- City of Tumwater
- City of Lacey
- Thurston County
- Olympia School District
- North Thurston School District
- State Department of General Administration
- State Department of Ecology
- State Department of Health
- Thurston County PUD #1

#### **Large Customers**

Water Conservation Staff will develop a contact list based on previous two year's water consumption

#### **Landscape Interests**

- WSU/Thurston County Cooperative Extension
- Local nurseries
- Local landscape contractors
- The Irrigation Association
- Washington Association of Landscape Professionals
- Washington State Nursery and Landscape Association

#### **Business Groups**

- Thurston County Chamber of Commerce
- Master Builders Association
- Olympia Downtown Business Association
- Rotary Clubs of Thurston County

## **APPENDIX D**

### **Voluntary Customer Water Use Reduction Actions**

#### **Residential Indoor**

- Flush the toilet less often. Each flush uses 1.6 to 7 gallons of water, depending upon the age of the toilet.
- Dishwashers should be run only when there are full loads of dishes. Each load uses 8 to 13 gallons of water.
- Wash only full loads of laundry. Each load uses 15 to 40 gallons of water. Front-loading washing machines use approximately 30 percent less water than top-loading models.
- Keep a pitcher of cold drinking water in the refrigerator rather than running the faucet until the water gets cold.
- Take shorter showers. Each minute of showering time uses 2.0 to 5 gallons of water. Try to limit showering time to five minutes.
- Avoid letting the faucet run while shaving, brushing teeth, or washing vegetables.
- While waiting for hot water, use a container to catch wasted tap water for use on plants.

#### **Residential Outdoors**

- Wash cars less often. Instead of using a hose, consider a commercial car wash that recycles water.
- Always use a shutoff nozzle when using a hose. Be sure there are no leaks in any hose fittings.

#### **Commercial and Residential Landscape**

- Water lawns and gardens only early in the morning or late in the evening to reduce water loss from evaporation.
- Consider letting established lawns go dormant until the shortage is over. Homes that normally water lawns will save from 25 to 50 percent by not watering them.
- Do not water lawns when it is raining. If you have an automatic irrigation system, learn how to change the program that controls your system in order to cut back on irrigation time. Turn off automated irrigation system clocks during rainy spells. Install a rain sensor on automatic irrigation systems that will override the system during rainfall. The City provides these at no cost to its customers.

- Eliminate outdoor water play, such as running through a sprinkler, plastic water slides, and wading/swimming pools that requires frequent refilling.
- Eliminate all hosing of sidewalks, driveways, and decks. Use a broom instead.
- Water established plants only when necessary, testing the soil moisture levels in the root zone with your fingers. Two to four inches of mulch in your planting beds will help retain moisture.
- Create tree wells around trees to minimize runoff when watering.

### **Commercial**

- Set goals for reduced water use and inform managers and employees. Give businesses ideas for limiting water use and ask them for their ideas.
- Repair all leaks and dripping faucets. Ensure that constantly running toilets are repaired. Urge employees to report leaks.
- Reduce or eliminate routine vehicle cleaning during the shortage. Use a local commercial car wash facility that recycles water.
- Ensure that all hoses are fitted with shutoff nozzles.
- Eliminate hosing as a means of disposing of used ice.
- Eliminate all hosing of walkways, parking lots, and loading docks. If washing paved areas is necessary for public health and safety, pressure washers use substantially less water.
- Postpone routine building washing until after the shortage.
- Post signs informing customers of the nature of the water shortage and ask for cooperation in reducing water use.
- Turn off all non-recirculating fountains. On windy days, when there is significant water loss, turn off **all** fountains.
- Ask restaurants to deliver water only on request.
- Accelerate restroom upgrades by replacing older toilets with low flow (1.6-gallon-per-flush) or High Efficiency (1.0 to 1.3 gallon per flush) models.

## **APPENDIX E**

### **Mandatory Restrictions - Enforcement Procedural Checklist**

- \_\_\_\_\_ Determine fines and/or surcharges to be imposed for mandatory restriction infractions, including whether or not there will be “one fine for all infractions” or whether certain selected water use reduction actions would command a higher fine than others.
- \_\_\_\_\_ Determine the number of warnings before fines or surcharges apply.
- \_\_\_\_\_ Establish a database for tracking violations.
- \_\_\_\_\_ Print self-duplicating “Notice of Violation” forms: one copy for location where violation occurred, one to record violation with billing. Print violations and fines on the Notice of Violation.
- \_\_\_\_\_ Assign and train staff with customer service and communication experience to “Water Watch.”
- \_\_\_\_\_ Establish procedure for “Water Watchers” to record warnings and penalties on customer accounts.
- \_\_\_\_\_ Establish a “hotline” for customers to report violations. To help avoid frivolous complaints, recorded message should note that only complaints with name and address of complainant will be pursued.
- \_\_\_\_\_ Provide all field and customer service staff members with fact sheets and question and answer sheets. Provide briefings on restrictions and enforcement procedures. Train field staff to tag obvious violations.

## APPENDIX F

### City of Olympia Fire Department and Drought Response

The City of Olympia's Fire Department uses water in a variety of ways. These uses include:

- Hydrant/line flushing (only do flushing every other year. In off years measure static pressure with gauge)
- Vehicle washing
- Washing of drill pad
- Wet Training (nine times each quarter)
- Pumper Testing
- Irrigation

The following explains how these water uses might be affected during the four stages of drought response.

#### Advisory Stage

At this stage, we would be communicating a **possible** water supply shortage to our customers. It may make sense to schedule any line flushing or wet training for earlier in the season in case restrictions are in place.

#### Voluntary Stage

In this stage, we would be asking our customers to voluntarily reduce their water use by a certain amount (generally about 10 percent). The Fire Department may change their water use at this stage in the following ways:

- Vehicle washing: Currently, vehicles are rinsed every night and washed twice a week. During this stage, vehicles would only be washed if they have mud on them but would continue to be rinsed each evening.
- Drill pad washing: The pad is now washed twice during the summer. If the voluntary stage occurs during summer months, a sweeper from the Public Works Department would be brought in to sweep the pad instead of washing it.
- Pumper testing: Recycled water is used, and this usage would not be affected.
- Hydrant/line flushing: Scheduled flushing could still occur at this stage.
- Training: Scheduled wet training could still occur at this stage.

- Irrigation: Irrigation of landscape should be slightly reduced at this stage.

### **Mandatory Stage**

At this stage, we would acknowledge a serious water supply shortage. Water use restrictions would be enforced with fines. The Fire Department may alter their water use in the following way at this stage:

- Vehicle washing: As in the Voluntary Stage, vehicles would only be washed if there is mud on them. Additionally, rinsing would only happen every other evening.
- Drill pad washing: As in the Voluntary Stage, the sweeper would be used instead of water.
- Pumper testing: Recycled water is used, and this usage would not be affected.
- Hydrant/line flushing: Scheduled flushing should not occur at this stage.
- Training: Scheduled wet training should not occur at this stage.
- Irrigation: Irrigation of landscape should be reduced at this stage.

### **Emergency Curtailment**

At this stage, the City of Olympia would be faced with a critical water supply shortage. The goal would be to provide enough water to provide for our customers' health and safety during the duration of the emergency. Customers would be allotted a certain amount of water and charged heavy surcharges if they exceed these amounts. No outdoor irrigation would be allowed for any of our customers. At this stage, the Fire Department would need to change their water uses in the following ways:

- Vehicle washing: Vehicles would only be washed if there is mud on them. No rinsing could occur. Vehicles that can fit in commercial car washes must be washed only at facilities that recycle water.
- Drill pad washing: As in the Voluntary Stage, the sweeper would be used instead of water.
- Pumper testing: Recycled water is used, and this usage would not be affected.
- Hydrant/line flushing: Scheduled flushing may not occur at this stage.
- Training: Scheduled wet training may not occur at this stage.
- Irrigation: Irrigation of landscape may not occur at this stage.