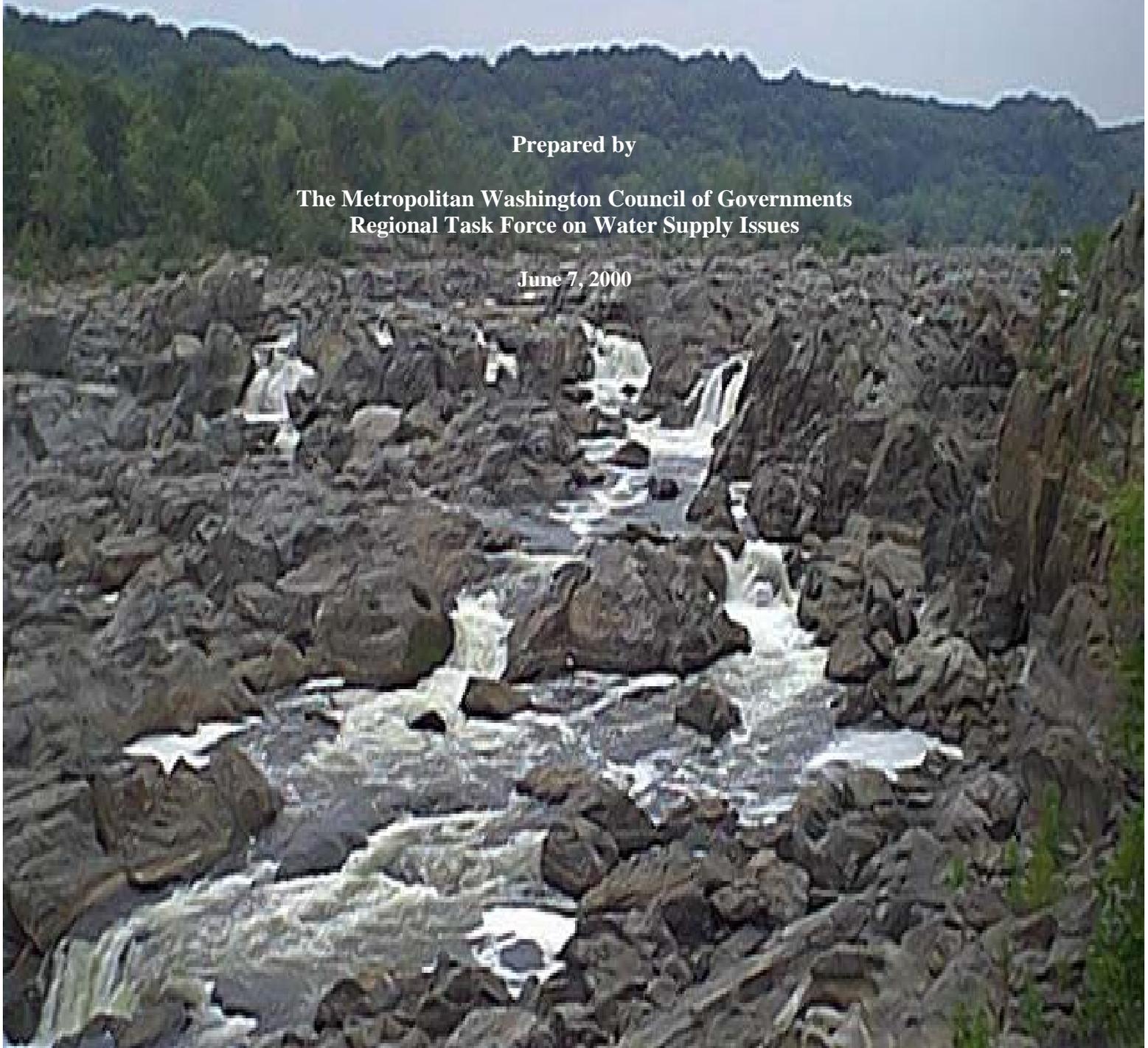


# **Metropolitan Washington Water Supply and Drought Awareness Response Plan: Potomac River System**

Prepared by

The Metropolitan Washington Council of Governments  
Regional Task Force on Water Supply Issues

June 7, 2000



## ABSTRACT

**TITLE:** Metropolitan Washington Water Supply and Drought Awareness Response Plan: Potomac River System

**DATE:** June 20, 2000

**AUTHORS:** COG Board Task Force on Regional Water Supply Issues

**AGENCY:** The Metropolitan Washington Council of Governments (MWCOG) is the regional planning organization for the Washington DC area's major local governments and their governing officials. MWCOG works towards solutions to regional problems such as energy shortages, traffic congestion, inadequate housing, air and water pollution, and water supply.

**REPORT ABSTRACT:** This document provides a plan of action that would be implemented during drought conditions for the purpose of coordinated regional response. The Plan, consists of two interrelated components: (1) a year-round plan emphasizing wise water use and conservation; and (2) a water supply and drought awareness and response plan. The year-round wise water use program applies to the entire region and is under development; what is presented is the basic framework and initial key messages. The Water Supply and Drought Awareness Plan contains four stages and is primarily designed for those customers who use the Potomac River for their drinking water supply. The Plan will eventually be expanded to incorporate all water supply systems throughout the region.

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## Introduction

On July 14, 1999, the COG Board of Directors established a “Task Force on Water Supply Issues” to review the region’s water supply systems, drought emergency plans, as well as to review long-term water supply plans and needs. The Task Force was established during one of the 3 most severe periods of drought of the 20<sup>th</sup> century. The response to this situation in the region varied substantially, creating some confusion and concern by the COG Board that the region was not speaking with a common voice. As a result, after taking some immediate actions to address conditions during the summer of 1999, the Board directed the Task Force to provide special emphasis on communication and coordination among local and state governments, water supply utilities, the media and general public in the event of another serious drought in the future.

The Task Force spent the next four months responding to the Board’s charge, including an all day workshop focused on the full range of regional water supply issues. On November 10, 1999, the Task Force issued a report containing its findings and recommendations. One of the central recommendations was the need to develop a common set of triggers and actions to be used by local governments and water utilities to insure a coordinated response to another serious drought event. This document, the Metropolitan Washington Water Supply and Drought Awareness and Response Plan represents a major step toward achieving the Board’s goal.

The Plan consists of two interrelated components: (1) a year-round program emphasizing wise water use; (2) a water supply and drought awareness and response plan. The year-round wise water use program applies to the entire region and is currently under development; what is presented herein is the basic framework and initial work on key messages. The “Water Supply and Drought Awareness and Response Plan” contains four stages and is currently designed primarily for those customers who use the Potomac River for water supply. In the coming months, the Task Force will continue to focus its efforts on the expansion of this plan to incorporate other water supply systems (i.e., small public utilities, groundwater, and agriculture), and development of a year round wise water use campaign. The Task Force will also continue to address the relationships between water supply and the environment.

The COG Board Task Force on Water Supply Issues was chaired by Loudoun County Chairman-at-Large Scott K. York. Its members were drawn from COG’s local governments, and it received substantial support from area water utilities, state agencies, the Interstate Commission on the Potomac River Basin, and public information officers.

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# Metropolitan Washington Water Supply and Drought Awareness Response Plan: Potomac River System *Adopted June 7, 2000*

	Normal	Watch	Warning	Emergency
	Wise Water Use	Voluntary Water Conservation	Voluntary Water Restrictions	Mandatory Water Restrictions
<b>Audience</b>	Entire Metropolitan Washington Region	Entire Metropolitan Washington Region	Customers of Co-op System, associated local governments, media	Customers of Co-op System, associated local governments, media
<b>Trigger</b>	<ul style="list-style-type: none"> <li>None – water supply adequate to meet all demands</li> </ul>	<ul style="list-style-type: none"> <li>NOAA “D1” drought level in Potomac River Basin (adopted on a <i>provisional 2-year basis and will be re-assessed during this time period</i>)</li> </ul>	<ul style="list-style-type: none"> <li>Combined water supply storage at Jennings Randolph and Little Seneca reservoirs drops to 60% of capacity for 5 consecutive days; lifted when combined water storage at reservoirs increases and remains above 60% for a period of 15 days; OR</li> <li>5% Probability of not meeting unrestricted water supply demands over next 1 – 2 months</li> </ul>	<ul style="list-style-type: none"> <li>50% probability of not being able to meet water supply demands over next month</li> </ul>
<b>Actions</b>	<ul style="list-style-type: none"> <li>Year round Water Conservation Program emphasizing “<b>Wise Water Use</b>” (Attachment B)</li> <li>Routine reporting               <ul style="list-style-type: none"> <li>- Annual briefing in May</li> <li>- Monthly Water and Drought Outlooks (June-Oct.)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Meeting of the Drought Coordination Committee</li> <li>Regional media briefing/media communications;</li> <li><b><u>Announce voluntary water conservation recommendations</u></b></li> <li>Detailed water supply and drought status reporting; outline of next steps in plan;</li> <li>Inform public that Potomac River Co-op Water Supply is adequate to meet unrestricted demands</li> </ul>	<ul style="list-style-type: none"> <li>Meeting of the Drought Coordination Committee</li> <li><b><u>Announcement of voluntary water restrictions</u></b> (see attachment C-illustrative list)</li> <li>Regional media briefing on a weekly basis/ongoing media communications</li> </ul>	<ul style="list-style-type: none"> <li>Meeting of the Drought Coordination Committee</li> <li><b><u>Announcement of mandatory water restrictions</u></b> (see attachment C-illustrative list )</li> <li>WAD assigns allocations to Potomac River utilities (per Low Flow Allocation Agreement)</li> <li>Regional press conference on daily basis; ongoing media communications</li> <li>Water supply reporting on a daily basis</li> </ul>

	Normal	Watch	Warning	Emergency
<b>Actions Cont.</b>		<ul style="list-style-type: none"> <li>• Press release upon first water supply release: reporting on a weekly basis thereafter</li> <li>• Press release when water supply storage at Jennings Randolph and Little Seneca reservoirs drops to 75% of capacity.</li> <li>• Press releases/briefings to include voluntary water conservation recommendations</li> </ul>		
<b>Messages</b>	<p><u>Wise Water Use Messages:</u></p> <ul style="list-style-type: none"> <li>• Wise water use--focus on inside uses: repairing plumbing problems/leaks</li> </ul> <p><u>General Information Messages:</u></p> <ul style="list-style-type: none"> <li>• Know your water sources and suppliers</li> <li>• Water supply outlook</li> <li>• Regional response to drought (here is how the region is prepared to respond)</li> <li>• Promotion of web site(s)</li> </ul>	<p><u>Voluntary Water CONSERVATION Messages:</u></p> <ul style="list-style-type: none"> <li>• Emphasis on water conservation outside the home or office--</li> <li>• Reminders about year round wise water uses</li> </ul> <p><u>General Information Messages:</u></p> <ul style="list-style-type: none"> <li>• Know your water sources and suppliers</li> <li>• Co-op water supply system outlook</li> <li>• Impact on groundwater users, environment, non-co-op water systems, and agriculture</li> <li>• Water supply conditions have deteriorated, but Co-op water supply system still adequate</li> <li>• Reminder that reservoir releases are planned events</li> <li>• Understanding of current water supply and hydrologic and soil moisture conditions</li> <li>• Reminders of the next steps if conditions worsen</li> </ul>	<p><u>Voluntary Water RESTRICTIONS Messages:</u></p> <ul style="list-style-type: none"> <li>• Public and businesses asked to voluntarily implement water restrictions to help ensure adequate water supply and maintain reservoir levels</li> <li>• Detailed list of voluntary water restrictions issued</li> </ul> <p><u>General Information Messages:</u></p> <ul style="list-style-type: none"> <li>• Know your water source</li> <li>• Water supply conditions have deteriorated, but Co-op system water supply still adequate</li> <li>• Co-op water supply system outlook</li> <li>• Reminders of the next steps if conditions worsen</li> </ul>	<p><u>Mandatory Water RESTRICTIONS Messages:</u></p> <ul style="list-style-type: none"> <li>• Public and businesses required to implement water restrictions to maintain water supplies</li> <li>• Detailed list of mandatory reductions issued</li> </ul> <p><u>General Information Messages:</u></p> <ul style="list-style-type: none"> <li>• Water supply very limited; water use reductions essential</li> <li>• Know your water source</li> <li>• Co-op water supply outlook</li> </ul>

## Attachment A Definitions

**Drought** - “Drought is a condition of moisture deficit sufficient to have an adverse effect on vegetation, wildlife, and people over a sizeable area.” (Adapted from the U.S. Geological Survey)

**NOAA** - National Oceanographic and Atmospheric Administration

**NOAA D1 First Stage Drought** – the second of 5 stages of a mathematical index reflecting long-term (Palmer Drought Severity Index) and short-term (Crop Moisture Index) soil moisture.

**Drought Coordination Committee** – comprised of COG’s Chief Administrative Officers and supported by utilities, the states, and the Interstate Commission on the Potomac River Basin Co-op Section, the Committee would meet in order to be briefed on drought related issues and to make decisions regarding the implementation of drought programs and responses as outlined in the Metropolitan Washington Water Supply and Drought Awareness Program and Response Plan.

**Co-op** – special section of the Interstate Commission on the Potomac River Basin that provides joint management of available water resources during low flow conditions and long-range demand-supply analysis and overall water supply coordination among the major Metropolitan Washington water supply utilities who use the Potomac River. Members of the Co-op include the Fairfax County Water Authority, the Washington Suburban Sanitary Commission, and the Washington Aqueduct Division. These utilities supply all or part of the water to Arlington County, District of Columbia, Fairfax County, Falls Church, Montgomery County (including Gaithersburg and Takoma Park), Prince George’s County, the City of Alexandria, City of Rockville, and Prince William County. Loudoun County is not part of the Co-op system (see Tab 5, Attachment D), although part of its water is obtained from the Fairfax County Water Authority.

**Jennings Randolph Reservoir** – the larger of two Potomac River basin reservoirs. Jennings Randolph is located 200 miles upstream in West Virginia. It was built by the US Army Corps of Engineers for purposes of water quality, water supply storage, flood control, and recreation. The Co-op water utilities have purchased from the United States of America the rights to 40,995 acre/feet of water storage space (approximately 11 billion gallons when the reservoir is full), which can be released in accordance with the Water Supply Coordination Agreement “to reduce or eliminate the possibility that the Emergency Stage of the Low Flow Allocation Agreement will ever be reached or that the allocation formula set forth therein becomes operative.”

**Little Seneca Reservoir** – the smaller of two Potomac River basin reservoirs, containing when full, approximately four billion gallons of usable water supply, located in Montgomery County, Maryland. The dam and the impoundment were constructed by, and are maintained and operated by the Washington Suburban Sanitary Commission, and construction, operation and maintenance costs shared by the water utilities in accordance with an agreement between them. It was constructed “to insure that the inhabitants and entities for which they [the water utilities] provide service are assured of an adequate supply of water,” and it is one of the facilities that are operated in accordance with the Water Supply Coordination Agreement.

**Water Supply Coordination Agreement** - agreement signed by the major utilities and Co-op that requires major suppliers to coordinate operations. Specifically, it brought the Occoquan (FCWA) and the Patuxent (WSSC) supplies into a coordinated system. The agreement also provides for a 20-year projected supply-demand analysis every five years and specifies a cost share formula.

**Potomac River Environmental Flow-by** – A quantity of water recommended to remain in the Potomac River between Great Falls and Little Falls and a lesser quantity recommended to remain in the Potomac River below Little Falls after the withdrawals are made by the utilities. The 1981 study done in support of the Potomac River Low Flow Allocation Agreement recommends that 300 million gallons per day be in the stretch between Great Falls and Little Falls and 100 million gallons per day be in the stretch below Little Falls for the purpose of maintaining environmental conditions.

## Annual Public Information Program

<p><u>Messages</u>  <b>Water Supply Information</b></p>	<ul style="list-style-type: none"> <li>▪ Know your water sources and suppliers</li> <li>▪ Regional water supply and drought management planning</li> <li>▪ Short and long-term water supply outlook</li> <li>▪ Regional response to drought</li> <li>▪ Promotion of Website</li> </ul>
<p><b>Water Conservation Program</b>  <b>“Use Water Wisely”</b></p> <p style="text-align: center;"><b>Water Conservation Tips</b>          (emphasis on inside uses under <u>NORMAL</u> conditions          and outside uses during <u>WATCH</u> conditions)</p>	<ul style="list-style-type: none"> <li>▪ Use water wisely             <ul style="list-style-type: none"> <li>- limited resource</li> <li>- we all depend on it</li> <li>- if everyone saves a little, we all save a lot</li> <li>- saves money</li> <li>- helps protect the environment</li> <li>- saves energy</li> </ul> </li> </ul> <p><i>GENERAL WATER CONSERVATION TIPS</i></p> <ul style="list-style-type: none"> <li>- Change wasteful habits</li> <li>- Repair leaks promptly</li> <li>- Install water saving devices</li> <li>- Plant water conserving plants</li> <li>- Minimize lawn watering</li> <li>- Places to conserve water</li> </ul> <p><i>INDOOR CONSERVATION TIPS:</i></p> <ul style="list-style-type: none"> <li>▪ <u>Conserve water in the bathroom</u> (repair leaks; shower instead of taking a bath; limit time of showers; turn off tap when brushing teeth; install water saving plumbing fixtures and models)</li> <li>▪ <u>Conserve water in the kitchen</u> (install faucet aerators; run dishwasher only when there is a full load; store water in refrigerator instead of cooling water by running tap; repair leaks; use garbage disposal less, compost is better)</li> </ul> <p><i>OUTDOOR CONSERVATION TIPS:</i></p> <ul style="list-style-type: none"> <li>▪ <u>Conserve water outside</u> (use hose nozzles that can be cut off or adjusted; let grass grow taller and mow higher as taller grass is more drought resistant; plant in the fall or Spring when watering requirements are less; use pool covers to reduce evaporation; use mulch around plants to conserve water; repair leaky hose connections)</li> </ul>
<p><b>Communication Tools</b></p>	<ul style="list-style-type: none"> <li>▪ Public Service Announcements (radio/television)</li> <li>▪ Billing Inserts (utilities)</li> <li>▪ Brochures/Flyers</li> <li>▪ Central COG Internet Site with links to water supply utilities and local governments</li> <li>▪ Campaign Logo</li> <li>▪ Maps</li> <li>▪ Public Events</li> </ul> <p>NOTE: This effort would be conducted throughout the year in an ongoing effort to maintain an adequate level of public education and awareness about wise water use, regional water supplies, and the coordinated regional drought management</p>

## Water Supply and Drought Outlook Reporting (continued)

<p><b>Annual Briefings (May)</b></p>	<ul style="list-style-type: none"> <li>▪ COG Board Media Briefing</li> <li>▪ COG CAO's</li> <li>▪ Meteorologists (conducted with individual meteorologists)</li> </ul> <p>Focus: Water Supply Outlook and plans for upcoming season</p>
<p><b>Monthly Briefings (June – October)</b></p>	<p>COG Board – updated water supply outlook (in the event of a drought shifts to water supply and drought plan)</p>
<p><b>Annual Media Kickoff Briefing Messages</b></p>	<ol style="list-style-type: none"> <li>1. “Know your water supply/suppliers (surface and groundwater as well as inter-relationship)”</li> <li>2. “Wise Water Use”</li> <li>3. “Here is why the region is better prepared”</li> <li>4. Reservoir capacities and use</li> <li>5. Water supply outlook</li> <li>6. Introduction of new triggers and actions and awareness efforts and how it will be used</li> <li>7. Points of contact (sources for information in each locality)</li> <li>8. Regional facts and figures (population, annual rainfall, regional environment)</li> <li>9. Promotion of web site(s)</li> </ol>
<p><b>Briefing Handout Materials</b></p>	<ol style="list-style-type: none"> <li>1. Map of Regional Water Sources</li> <li>2. Flow Chart of Water Supplies</li> <li>3. Table of Water Suppliers (Co-op and Non Co-op)</li> <li>4. Fact Sheets</li> </ol>

## Illustrative List of Water Restrictions

### **Disclaimer:**

*This section provides a list of potential water use restrictions that may be imposed during the **WARNING** and **EMERGENCY** stages of the Metropolitan Washington Water Supply Awareness and Drought Response Plan. The Drought Coordination Committee will determine which restrictions to recommend for implementation on a coordinated regional basis.*

### **Definitions:**

**Note:** Depending on conditions, there may be phased implementation of voluntary or mandatory water restrictions. Water restrictions are imposed to help insure that adequate water supplies are available during periods of severe drought.

**Voluntary Water Restrictions:** The public and businesses are asked to take specific measures to conserve water on a voluntary basis. There are no penalties or sanctions for failure to follow such measures. However, the public and business will be informed that should conditions worsen, one or more of these measures could become mandatory and enforceable. Voluntary water restrictions would be triggered under the “Drought Warning (Orange)” level of the proposed “Metropolitan Washington Water Supply and Drought Awareness Program and Plan.” Signs may be posted in public places with notification of “voluntary water restrictions in effect” along with list of measures.

**Mandatory Water Restrictions:** The public and businesses are required to take specific measures to conserve water. Penalties and sanctions are identified for these measures and they are enforceable under local ordinances and/or state laws. Mandatory water restrictions would be triggered under the “Drought Emergency (Red)” level of the proposed “Metropolitan Washington Water Supply and Drought Awareness Program and Plan.” Signs will be posted in public places with notification of “mandatory water restrictions in effect” along with list of measures and sanctions.

## Illustrative List of Water Restrictions

### - Outside -

Category	Action	Comments
Lawn Watering	Limit or ban.	If limited, could be for certain times of day and on specific days, or to use of small hand-held containers. May limit school athletic facilities.
Car Washing	Limit or ban.	If limited, could be by individuals, or to use of small buckets or containers. If car wash business, could be based on water recycling capacity or other water use reduction technology
Washing Sidewalks	Limit or ban.	Sweeping sidewalks could be suggested or required.
Ornamental fountains or structures	Limit or ban.	If limited, could be for special uses or time of day.
Swimming pools	Limit or ban topping off.	Potential public health problem if banned.
Fire Hydrants	Limit or ban use of fire hydrants to health and safety purposes.	
Leaks	Repair leaking and dripping faucets immediately.	

## Illustrative List of Water Restrictions *(continued)*

### - Inside -

Category	Action	Comments
Water in Restaurants	Serve drinking water only upon request.	
Bathing	Take short showers instead of baths.	
Clothes and dishes	Run only when filled to capacity.	
Personal hygiene	Turn off water when brushing teeth, shaving or shampooing.	
Fixtures	Install water saving devices in the home such as low flow toilets and flow restrictors on shower heads.	
Water re-use	Use “grey water” for watering lawns and gardens.	Grey water results from dishwashing and clothes washing.
Leaks	Repair leaking and dripping faucets immediately.	
Air Conditioners	Limit use of air conditioners that use water for cooling.	Set thermostat to 80 degrees F. or higher.

### **Other potential measures:**

Vegetation/landscaping	Encourage use of drought-tolerant vegetation and plants for landscaping. Use mulch to retain moisture.	List of preferred plants to be developed. Partnerships with nurseries encouraged.
Limit water use to winter levels.	Sets a specific goal of wintertime usage.	Generally wintertime usage significantly lower than summer. Would require public education effort.

## Potomac River Water Supply System: Public Utilities and their Customers

Jurisdiction Served	Potomac River Public Water Utility	Note
City of Alexandria, VA Dale City, VA	Virginia American Water Company	Virginia American Water Company is a wholesale customer of the Fairfax Water
Arlington County, VA	Arlington County Dept. of Public Works (DPW)	Arlington County DPW is a wholesale customer of the Washington Aqueduct Division of the U.S. Army Corps of Engineers
District of Columbia	DC Water	DC Water is a wholesale customer of the Washington Aqueduct Division of the U.S. Army Corps of Engineers.
Fairfax County, VA	Fairfax Water	Also serves the city of Falls Church and the Town of Herndon
Loudoun County, VA	Loudoun Water (through FW)	Loudoun Water provides public water to residents of the unincorporated areas of Loudoun.
Montgomery County, MD	Washington Suburban Sanitary Commission	Includes City of Gaithersburg and City of Takoma Park. Excludes City of Poolesville.
Prince George's County, MD City of Rockville, MD	Washington Suburban Sanitary Commission City of Rockville Department of Public Works	Includes City of College Park and City of Greenbelt. City of Rockville also receives a small percentage of its water from the Washington Suburban Sanitary Commission
Frederick County, MD	Frederick County Division of Utilities and Solid Waste Management	Frederick County obtains its drinking water from the Potomac River as well as from Lake Linganore The treatment plant serves unincorporated parts of southern and southeastern Frederick County not served by individual wells. The Lake Linganore treatment plant serves unincorporated parts of eastern Frederick County not served by wells.
Prince William County, VA	Prince William Service Authority	Supplies to the unincorporated parts of PWC and is a wholesale customer of FW. It is also served by the City of Manassas Department of Utilities which is not part of the Potomac River System.