

# Water Security & Drought Response

## July 10, 2014

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Department of Environmental Programs  
Metropolitan Washington Council of Governments



Metropolitan Washington  
Council of Governments

# NCR Water Security Program

- October, 2001 – Water Utilities 1<sup>st</sup> “ESF” to meet after 9/11
- Recognition of Water as critical infrastructure
- Individual Utility focus on vulnerability assessments, physical security, enhanced monitoring
- July, 2003 – Special Water Security Workshop – regional water security priorities identified
- Cooperation with US EPA Headquarters, Region III (Philadelphia), Homeland Security Lab (Cincinnati), Maryland, Virginia
- Program builds on 20 years of regional cooperation on water supply planning and emergency response



# NCR Regional Water Security Program – Major Components

- Regional Water Supply Emergency Plan
  - Developed in late 1970s for drought; amended in 1994 for Potomac river contamination
  - Greatly expanded and amended between 2001 and today to address all hazards
  - Plan focuses on communication and coordination among responding organizations
  - Recent events warrant enhancements to the plan – on today's agenda
- Regional Water Quality Early Warning Monitoring Network
- Other program and project components:
  - Potomac Spill Model (ICPRB)
  - Training & Exercises
  - Hospital Backup Power & Water
  - Backup Power Assessments
  - Vulnerability Assessments
  - Integration with NCR Critical Infrastructure Protection program
  - Communication Protocol



# Program Overview

- Utility/COG funded work happening now (\$90K)
  - Define the response and recovery roles and responsibilities for NCR jurisdictions and agencies.
  - Develop a regional plan for alternative water procurement and distribution.
  - Evaluate previous studies (decontamination; redundancy; hospital preparedness).
  - Prepare regional messaging
  - Briefings for elected officials, water utility boards and commissions, senior policy and technical officials, and the media



## Program Overview, continued

- UASI funded work starting in October 2014
  - Total budget \$1,518,030
- Project Areas
  - Regional Water System Threat Reduction and Resilience - \$537,030
  - Enhance Regional Response Capability - \$155,000
  - Enhance NCR water systems ability to recover from contamination emergencies - \$350,000
  - Enhance NCR Water systems' ability to detect spills and contamination - \$500,000



# Enhanced Regional Response Capability to Water Emergencies

- Comprehensive regional Water Supply Emergency Plan update.
- Water outage equipment plan.
- Regional water outage and contamination backup water plan.
- Water outage and contamination communications plan.
- Water outage and contamination training and exercises:
  - **Tabletop;**
  - **Functional;**
  - **Actual intra-utility testing.**



# Regional Water System Threat Reduction and Resilience

- Identify and assess source water alternatives.
- Identify and assess treated water alternatives:
  - System interconnection alternatives;
  - More storage;
  - Redundant transmission lines and pump stations.
- Recommend alternatives to maintain regional drinking water capacity.



# Enhance NCR water systems ability to recover from contamination emergencies

- Flushing guide for Residential and commercial properties.
- Testing procedures and standard timelines.
- Description of steps used to confirm water safety/lift advisories, etc.
- Develop criteria, operational guidance, and define terms used to communicate to the public, Incident Management Teams, and first responders.





# Water Security Monitoring Network Update

- Upstream Potomac Sites
- iABS biomonitor status
- Remote communication – eWon
- UASI equipment purchases
  - Portable GC/MS
  - Oil in water sensors
  - Other



# Proposed Outcomes and Timetable

- Now – August, 2014
  - Regional meeting with emergency managers to better define response and recovery roles (July 29)
  - Improve the WSEP protocol and response related to quantity-related water outages and contamination events.
  - Evaluate previous studies (decontamination; redundancy; hospital preparedness).
  - Prepare regional messaging
  - Develop and issue RFP for UASI grant.



# Proposed Outcomes and Timetable

- September 2014 – May 2016
  - Update Potomac source water assessment(s)
  - Update regional water system redundancy study.
  - Update and exercise regional WSEP.
  - Develop operational guidance for responding to contamination events.
  - Procure monitoring and other equipment.

## National Capital Region



National Capital Region Water/Wastewater Agency Response Network

- Activates through “utility to utility” contact via a phone call or email
- Receives support from the Metropolitan Washington Council of Governments (MWCOCG)
- Collaborates with primacy agencies, emergency management agencies and water associations in the region
- Will be debuting a new website in late 2013
- Would like to schedule a tabletop exercise in late 2013
- Has activated during the following incidents
  - 2011: Hurricane Irene and Tropical Storm Lee
  - 2012: Derecho and Superstorm Sandy
- Has set several Improvement Planning goals including:
  - Promoting NCRWARN to smaller communities in the National Capital Region
  - Developing an online resource database



## NCRWARN Stats

Formed in 2008  
9 utility  
members from  
Washington, DC;  
Virginia; and  
Maryland

Includes public  
and private  
utility members  
70% Population  
covered (4.6M  
people)

[www.ncrwarn.org](http://www.ncrwarn.org)

Has an  
operational plan  
NCRWARN has  
activated

**WARN Chair: Steve Bieber, MWCOCG**

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# Recent and Upcoming Training and Exercises

- July 8, 2014 – meeting with Colonial Pipeline
  - Continued discussions about contingency planning.
  - Detailed review of integrity management system.
- July 29, 2014 – water outage workshop
- August 6 & 7, 2014 – Threat and Risk Identification
- September 8 & 9, 2014 – Decontamination exercise
- November 5 & 6, 2014 – Enhanced Threat and Risk Identification
- Dates TBD
  - Critical infrastructure recovery workshop
  - Utility failure workshop(s) and exercise (black start)
  - Cyber security workshops
  - Supply chain recovery/resilience workshops
  - Spill exercise with Colonial and others
  - Water outage and contamination training/exercise



## Recap and Next Steps

- Engineering and Contract Support
  - Prioritize identified needs.
  - Identify RFP development and selection team.
- Identify courses of action to close gaps.
- Training and Exercise Planning
  - Identify exercise planning team.
  - Define the scope, purpose, goals, and initial exercise objectives.
- Monitoring workgroup recommendations

# Water Supply & Drought

# Water Supply in the NCR Region

## ▶ Potomac <sup>1</sup>CO-OP System

Three major water suppliers in the CO-OP provide 90%+ of region's treated water

- <sup>2</sup>Fairfax Water - provides water to Fairfax County, Loudoun Water, Prince William County Service Authority, Vienna DPW, Virginia-American Water Company
- Washington Aqueduct Division - provides water to Arlington Department of Public Works, DC Water, Falls Church Department of Environmental Services
- Washington Suburban Sanitary Commission- provides water to most of Prince George's and Montgomery County
- Additional water supply sources in Potomac River System
  - Patuxent Reservoir, Occoquan Reservoir
  - Backup storage – Jennings Randolph Reservoir, Little Seneca Reservoir

## Jurisdictions with their own water supply sources

- Bowie- groundwater
- <sup>2</sup>Fairfax City
- Loudoun County Towns
  - Leesburg, Purcellville, Hamilton, Hillsboro, Lovettsville, Middleburg, Round Hill
- Manassas
  - Also supplies water to part of Prince William County
- Poolesville – groundwater
- Rockville – Potomac
- Charles County – groundwater, Potomac

<sup>1</sup> The CO-OP System is coordinated by the Interstate Commission on the Potomac River Basin under 1982 Agreement  
Loudoun Water is in the process of constructing its own water treatment plant and coordinating with the CO-OP

<sup>2</sup> Fairfax Water is expected to incorporate the City of Falls Church and City of Fairfax service areas in 2014



## Creation of the Water Supply and Drought Plan



- ▶ COG Board created the Water Supply Task Force (WSTF) in the summer of 1999
  - Response to one of the most severe droughts of the 20<sup>th</sup> century - region did not have a common voice about drought conditions – conflicting messages to the public
- ▶ Primary Focus of the WSTF
  - Initial Focus – water supply and current drought conditions
  - Long-Term Goals -January 2000 Board asked the Task Force to develop “common language” for region in the event of another serious drought
- ▶ COG Board unanimously adopted the Metropolitan Washington Water Supply and Drought Awareness Response Plan (prepared by the WSTF) on June 7, 2000 – two main components
  - A year-round plan emphasizing wise water use and conservation; and a water supply and drought awareness and response plan



# Components of the Plan – Two Parts



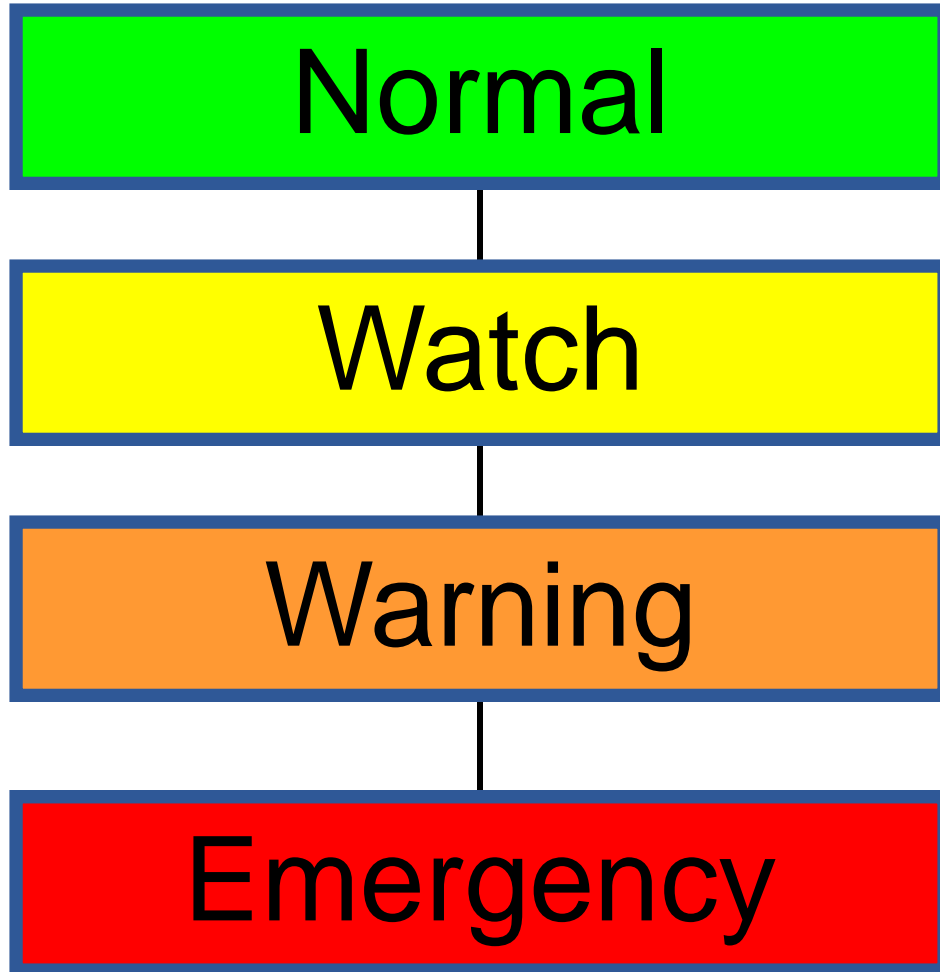
## ▶ 1<sup>st</sup> Part - Wise Water Use Campaign

- A Public Outreach Campaign with Indoor and Outdoor Conservation Messages – year-round focus
- Part of a Regional Outreach Effort – Community Engagement Campaign
  - Regional water conservation advertising and outreach at public events
  - Web site developed with useful tools
    - Landscape guide, seasonal water conservation tips



Wayne the Water Drop

## 2<sup>nd</sup> Part - Drought Triggers and Actions



Note that the Plan consists of four stages and is primarily designed for those customers who use the Potomac River for water supply.



## Normal

Water supply adequate to meet demands

Year-round **wise water use program** conducted

Routine reporting  
Monthly water supply and drought outlooks  
-May-October

Email and Web Site Updates

## Watch

Trigger: NOAA "D1" drought level for Potomac River Basin (Drought Monitor)  
Drought coordination committee meets  
Note: CAO Chair is on this committee

Regional media briefing

**Voluntary Water Conservation** recommendations issued

Additional media notification at first reservoir release - 75% full reservoirs

## Warning

Trigger: Jennings Randolph and Little Seneca combined storage below 60% for 5 consecutive days OR

5% probability of not meeting unrestricted water supply demands over next 1-2 months

Drought Coordination Committee meets

**Voluntary water restrictions** announced

Regional media briefings begun on weekly basis

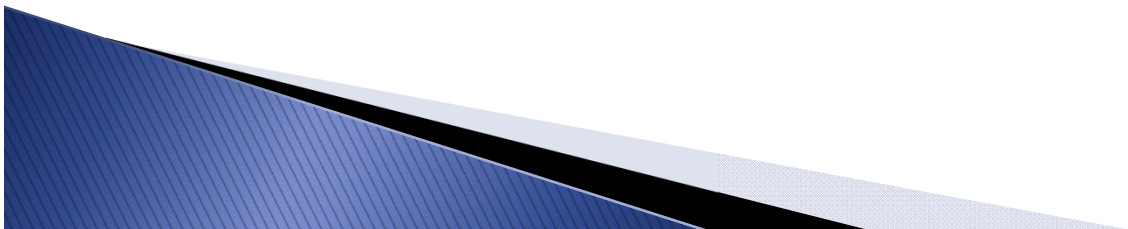
## Emergency

Trigger: 50% probability of not being able to meet demands over next month

Drought Coordination Committee meets

**Mandatory Water Restrictions** announced

Regional Press Conference on daily basis



# COG's Roles Per the Plan Guidance

- ▶ **Communication and Coordination**
  - Monitor and Report on Water Supply and Drought Conditions
    - Monthly from April – October - more as needed depending on Drought stage
  - Convene the Drought Coordination Committee (DCC) and Drought Coordination Technical Committee (DCTC) as needed
  - Issue Press Releases regarding Drought Stages (WATCH, WARNING, EMERGENCY), Interact with Media as needed, Internal and External Meetings
- ▶ **Outreach**
  - Wise Water Use Events, Community Engagement Campaign, Website updates

# Role of CAOs, utilities, and others

- ▶ The COG Board adopted the Plan that delegated authority to the Drought Coordination Committee (DCC)



*2000 Board  
Chairman  
Gerry  
Connolly*

## **COG Board Adopted Resolution R23-00 on June 7, 2000:**

- “Resolution adopting the recommendation of the COG Task Force on Regional Water Supply issues for a Water Supply and Drought Awareness Program and Response”
- **The Plan defines the Drought Coordination Committee in the "Definitions" Appendix (Attachment A) to the Plan as follows:**
  - 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.
- **Also in the CAO By Laws Adopted May 11, 2011**
  - Article II. Purpose. B. 3. a. “The Committee’s subject areas include the following: Act as a technical committee, including specifically as: The Drought Coordination Committee.”

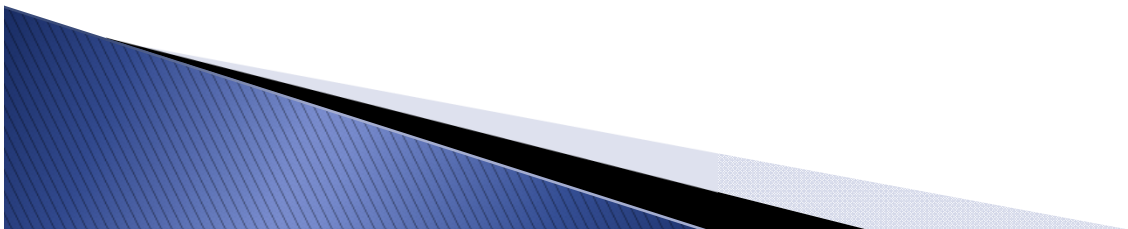


# History of Use – Drought Declarations

- ▶ COG's DCC last issued a Drought WATCH - **Sept. 9, 2010**
  - Press Release urged residents and businesses to conserve water – use water wisely
  - Emphasized - water supply reservoirs that were constructed in the early 1980s to provide water during droughts were full but would be utilized if needed
  - Ended with Tropical Storm Lee
- ▶ Since the Drought Awareness Response Plan was adopted in 2000
  - Declared a drought WATCH in 2002, 2007, 2010
  - Never issued a WARNING or EMERGENCY for the Potomac system



Great Falls – Sept. 2010





# For further information

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