

**Attachment 1A
MEETING SUMMARY
JOINT MEETING OF
DIRECTORS OF UTILITIES COMMITTEE
HEALTH DIRECTORS, AND
EMERGENCY MANAGERS
June 5, 2013
Chesapeake**

1. Summary of the May 1, 2013 Meeting of the Directors of Utilities Committee

Item 3 of the May 1, 2013 meeting summary was amended as shown below (strike through text indicates deletion).

Page 2, first bullet:

- Mr. Brian Ramaley, Newport News Waterworks Director, provided a copy of a recent presentation given to students and faculty at Virginia Tech for reference with regard to graphics, content, and presentation of issues. In May, the City Council will be voting on a revised rate structure that increases the bimonthly fixed service fee to \$22 ~~per month~~ while maintaining the current volumetric rates.

There were no other comments or revisions to the meeting summary

ACTION: The summary of the May 1, 2013 meeting of the Directors of Utilities Committee meeting was approved as revised.

2. Summary of the December 5, 2012 Joint Meeting of the Directors of Utilities Committee and Directors of Health

There were no comments on, or revisions to the summary of the December 5, 2012 joint Committee meeting.

ACTION: The summary of the December 5, 2012 joint meeting of the Directors of Utilities Committee and Health Directors was approved.

3. Ready Hampton Roads

HRPDC staff prefaced this agenda item by noting the Committee's December 2012 completion of the Hampton Roads Water and Wastewater Systems Emergency Preparedness and Response Regional Improvement Plan, which contains initiatives for improving cross-sector coordination.

HRPDC staff provided an overview of the ReadyHamptonRoads.org website and its resources for emergency management practitioners, including a secure file library and public and private calendars for coordinating training, exercise, and meeting activities. Staff reviewed access controls, registration, information submittal and use of the calendar to coordinate/solicit exercise and training participation. The calendar currently includes Regional Emergency Management Technical Advisory Committee and Regional Catastrophic Planning Team training events, but does not yet show all regional training.

Staff also described the potential for utility-specific subfiles and Committee pages, as well as use of the public side of the site for posting utility outreach messages to residents. Outreach could include preparedness messaging, where to go for post-event utility information, and links to utility websites. Staff emphasized that ReadyHamptonRoads.org is a preparedness-oriented site, not a response-oriented site, and that advance notice of certain information can also be pushed out to the public through social media.

The group did not have any questions on the ReadyHamptonRoads.org briefing. There were no objections to posting the Hampton Roads Water Quality Response Plan (see item 5 below) in the secure file library.

Mr. Rob Braidwood, Chesapeake EOC, spoke briefly about the exercise being developed through the Regional Catastrophic Planning grant from DHS. He noted that one of the scenarios will be a hurricane. The exercise is currently in the planning phase and more info will be available at a later date.

Mr. Braidwood also briefed the group on the development of a regional GIS information sharing effort known as the Governor's Situation Room, which seeks to provide a means for sustainable information sharing through an online GIS viewer. Currently, WEB EOC status is automatically fed into the viewer. The goal is to populate the system with live data to assist EOCs in decision making with approximately 40% of data in the viewer automatically maintained and refreshed. The tool recognizes that sectors require different data sets and supports dashboards and user data profiles or "awareness packages" that are pre-set by users to include specific layers relevant to their sector, function, or standard operating procedures. Data providers can control what information is displayed and who can view the information provided. A similar system is in use in northern Virginia, and a pilot program is being developed for Charlottesville.

Data from a DHS pilot program is being used as a starting point, and voluntary data submittals from multiple sources are ongoing. HRSD's infrastructure layer and Dominion Power's outage map have been incorporated into the tool, as well as VDOT's 511 data and road speed data. The development effort needs to address the question of how to use the tool to support a coordinated response, how to address the associated governance issues, and how to regularly update the data.

Mr. Braidwood asked the group for input on what utility data EOCs need to know. Utilities noted that a non-functioning or offline water treatment facility would be a critical, overwhelming issue because the lack of supply would affect first responders and multiple

other sectors. Utilities also noted that a Dominion Power outage does not necessarily mean that pump stations in the area are not functioning; many pump stations have backup power supplies. It was noted that accident and transportation information currently available through the Viper system can affect utility supply chains. Some utilities are moving toward integrating SCADA systems with GIS.

Health Directors noted that VDH would be interested in mapping areas subject to boil water notices; this would assist Health Departments in contacting affected health care and food service facilities.

ACTION: No action.

4. Hampton Roads Incident Management Team

Mr. Bill Burkett provided an overview of the Hampton Roads Incident Management Team (IMT), a type three all-hazards IMT developed with Urban Area Security Initiative (UASI) Grant funds to support major incidents and events. The City of Chesapeake is the lead agency and hosts the IMT's equipment cache. A copy of Mr. Burkett's presentation is attached.

To reach the goal of 75 members, the Hampton Roads IMT is seeking to recruit members with utilities and public works expertise to complement police, fire, and emergency management capabilities and to enable the team to get water and wastewater systems back online. The IMT is also recruiting members with public health, IT, and finance expertise. Membership requires the commitment to complete specific training requirements. The IMT may be deployed for 7 to 14 days at a time, potentially to out-of-state locations. The Hampton Roads IMT can also serve as the umbrella entity for the region to seek mutual aid and outside support from other IMTs should the need arise.

Membership inquiries may be directed to Mr. Bill Meyer, Interim Director of the City of Chesapeake Public Utilities, or Mr. Mike Gurley, City of Chesapeake.

ACTION: No action.

5. Hampton Roads Water Quality Response Plan

HRPDC staff briefed the group on the 2013 update of the Hampton Roads Water Quality Response Plan, including the purpose of the update and a summary of changes made relative to the 2003 plan revision. A copy of staff's presentation is attached.

The Directors of Utilities Committee and Health Directors approved the 2013 Update of the Hampton Roads Water Quality Response Plan. HRPDC staff will distribute the final report electronically.

The group discussed the potential for exercising the Water Quality Response Plan. It was noted that the FBI is interested in doing a tabletop exercise for the water sector. The FBI reached out to REMTAC representatives to express this interest upon hearing the June 5, 2013 joint meeting was scheduled. As for the Regional Catastrophic Planning Team (RCPT) exercise, the Plan could potentially be included in the hurricane scenario. Emergency Managers are open to further discussions.

Utilities expressed interest in participating in an exercise that is focused on an event and involves multiple jurisdictions. Emergency Managers commented that the hurricane scenario and the aerosolized anthrax scenario would be good for utility involvement. HRPDC staff will follow-up with REMTAC and RCPT, and form a coordinating subcommittee if necessary.

ACTION: (a) The Directors of Utilities Committee and Health Directors approved the 2013 Update of the Hampton Roads Water Quality Response Plan.

(b) HRPDC staff will coordinate with REMTAC and RCPT on utility involvement in the RCPT regional exercise. Staff will report back to the Committee.

6. Regulatory Update

VDH Office of Drinking Water staff was unable to attend the meeting. The agenda was amended to remove this item.

ACTION: No action.

7. Roundtable Discussion

The roundtable portion of the meeting is summarized below:

- U.S. Army Corps of Engineers, Emergency Power Facility Assessment Tool (EPFAT):** The U.S. Army Corps of Engineers is often called upon by FEMA to assist in providing temporary emergency power at critical public facilities identified by state priorities in disaster response. EPFAT is a secure web-based tool that facility owners/operators or emergency managers can use pre-event to input facility assessment data and facilitate the USACE's ability to install temporary generators (see <http://epfat.swf.usace.army.mil/Welcome.aspx>). As a follow-up to the EPFAT discussion at the May 28, 2013 REMTAC meeting, the group was asked for general feedback on the potential use of the tool by utilities. REMTAC is considering applying a tiered approach to facility assessments for input into EPFAT (e.g., EOCs and hospitals would be tier 1 priorities). Some utilities have already entered data in EPFAT, but the FEMA/USACE assistance is not suited to utility needs. The USACE follows their own protocols and brings in their own electricians and equipment, rather than simply providing the equipment to local staff. Most utility power issues

are related to pump stations, where staff rotates generators between pump stations as system needs evolve and power status changes. The program is best suited for catastrophes where a large facility requires the installation of a generator at a fixed location, as well as staff/electricians to support the equipment.

- **Mosquito spraying:** It was noted that mosquito control spraying operations will be or have already commenced in several localities. Localities should be aware of the recent updated pesticide regulations; HRPDC staff will provide additional information to the Committee.
- **Back-up Water Supplies for Jail Facilities:** The City of Virginia Beach Public Utilities will be doing a five-month feasibility study of providing back-up water supplies for jails. The City agreed to share the results of the study with the Committee.
- **Drinking Water Fluoridation:** It was noted that some community members are voicing concerns regarding the fluoridation of public water supplies. Utilities are considering the issue internally.

ACTION: No action.

BREAK (5 minutes)

At the break, the joint meeting of Utility Directors, Health Directors, and Emergency Managers concluded. The meeting reconvened for discussion of topics pertaining to the Utility Directors.

8. askHRgreen.org Trailer Hosting

The Committee discussed the hosting of the askHRgreen.org trailer for FY14. HRPDC staff reviewed the responsibilities associated with hosting the askHRgreen.org trailer (see attachment). HRPDC staff thanked Virginia Beach for hosting the trailer for the past two years. Staff noted that future host localities should be aware of considerations for utility/locality staff hours and trailer towing requirements.

When the Committee was asked for a FY14 host volunteer, it was agreed that Virginia Beach would continue to host the trailer for one more year. Other utilities will assess capabilities and advise HRPDC staff so that a rotation queue can be determined for FY15 and beyond. HRPDC staff will follow-up with an email inquiry to the Committee.

ACTION: Virginia Beach will host the askHRgreen trailer for FY14. HRPDC staff will follow-up with the Committee to determine a trailer hosting rotation queue for future years.

9. Regional Sanitary Sewer System Asset Consolidation Study

The Committee discussed the issue of the governance structure for a regionalized sewer system. There was general agreement that the regional entity's governance model should be different from the existing HRSD Commission, however, the governance structure would not be resolved at the June 28, 2012 workshop. Further discussion of the regional entity's governance structure can occur after recommendations are put forth.

HRPDC staff advised that the draft report is anticipated from the consultant on June 14, 2013. The Committee noted that the consultant can help facilitate locality review of the draft report by providing as much information as possible on assumptions and how conclusions were drawn.

Mr. Richard Stahr, Brown and Caldwell, briefed the Committee on the results of the comparative analysis, which contrasts the regional and non-regional capital costs for rehabilitation and capacity enhancements. Assumptions for both scenarios were reviewed. Mr. Stahr noted that both scenarios assumed moderate growth and applied a mix of logical combinations of solutions. The solutions were consistently applied to both scenarios, but do not represent the optimized solution sets.

Mr. Stahr noted fundamental differences in the regulatory constraints that apply to the two scenarios. The non-regional scenario is constrained by the requirements of the Special Order of Consent for localities to remove infiltration and inflow (I/I). In contrast, the regional solution focuses on EPA Consent Decree requirements for achievement of level of service. The implementation of the non-regional scenario is dependent on locality schedules. Implementation of the regional scenario is based on a 20-year time frame. Preliminary cost estimates for the total infrastructure improvements by wastewater treatment plant service area were briefed. The regional scenario cost was lower than the non-regional cost for both the 10-year and 2-year level of service. A copy of his presentation is attached.

Regarding implementation needs, Mr. Stahr noted logistical and practical differences between the scenarios. In the non-regional scenario, locality rehabilitation plans must be approved by DEQ. Localities will also have to make peak flow commitments and demonstrate achievement of commitments through post-rehabilitation flow monitoring. Sequencing and performance assurances are key to the success of the non-regional scenario and flow agreements will be necessary; all downstream facilities will be sized based on peak flow commitments. In the regional scenario, flow agreements are not necessary. The regional entity will be able to optimize rehabilitation and capacity enhancements and implement improvements simply and directly.

The comparative analysis is being incorporated into the Regional Sanitary Sewer System Asset Consolidation Study, which will also describe the operational costs and capital requirements for maintenance, operations, and management (MOM) expenses.

ACTION: No action.

10. Other Business

Hampton Roads Green Building Council: HRPDC received an request from the Green Building Council for a speaker to present on municipal retrofit projects for rainwater or gray water. The Committee noted the following leads:

- HRSD's new building utilizes rainwater for toilet flushing.
- Newport News Fire Station No. 3 harvests captures rainwater in a cistern for onsite use.
- Chesapeake's Oscar Smith Middle School is LEED certified.
- Suffolk's Health and Human Services Department has incorporated green building practices in the construction of their new building.

HRPDC staff will follow-up with inquiries to the various departments.

ACTION: No action.

Committee Meeting Sign-In Sheet
June 5, 2013

Attachment 1B

Locality/Agency	Representative	Representative	Representative	Representative
HRSD	Ted Henifin	Phil Hubbard		
Chesapeake	Bill Meyer			
Franklin				
Gloucester	Arnie Francis			
Hampton	Tony Reyes	Jason Mitchell		
Isle of Wight				
James City County	Larry Foster			
Newport News	Everett Skipper			
Newport News	Scott Dewhirst			
Newport News	Reed Fowler			
Norfolk	Kristen Lentz			
Poquoson	Bob Speechley			
Portsmouth	Bryan Foster			
Smithfield				
Southampton				
Suffolk	Craig Zieseemer			
Surry				
Virginia Beach	Tom Leahy	Bob Montague		
Williamsburg				
Windsor				
York				
HRPDC	Randy Keaton	Whitney Katchmark	Julia Hillegass	Katie Cullipher
HRPDC	Robert Lawrence	Dawn Brantley	Tiffany Smith	
New Kent				
DEQ				
EPA				
USGS				
VDH	Heidi Kulberg	Nancy Welch	John Schellenberg	Jay Duell
VDH				
VDH				
Emergency Managers	Kate Hale, JC	Steven Pyle, NN	Jim Redick, NO	Robb Braidwood, CH
Emergency Managers	Mark Milicich, DHS	Bill Burket, VPA	Sara Ruch, HA	Mark Marchbank, VB
Emergency Managers	Jim Judkins, SU	Andrea Clontz, IW		
AECOM				
AquaLaw				
Brown & Caldwell	Richard Stahr			
CH2M-Hill				
Christian Barton				
CNA				
HDR				
Hurt & Proffitt, Inc.				
McGuire Woods				
Rice Associates				
REMSA				
Troutman Sanders				
Virginia Fusion Center				
Virginia WARN				
URS				
Watermark Risk Management				
Private citizens				



Hampton Roads All Hazards Incident Management Team



<http://hamptonroads.imtcenter.net/main/index.aspx>

1



What is an Incident Management Team?

- A team of personnel from *multiple jurisdictions, agencies and emergency response disciplines with advanced training* in the Incident Command System (ICS).
- Available to support local authorities in managing *major emergencies or planned events* that may be of long duration or require more advanced management procedures.
- Fully equipped and capable of operating for several operational periods.



2



Incident Management Team?



- An IMT is organized following a *national model* and is utilized extensively for **command** and **control** of **large-scale incidents**.
- A trained and certified IMT is the pinnacle of the Incident Command System (ICS).



3



IMT Capabilities

“All-hazards” teams provide command and control for manmade and natural disasters:

- Terrorist attacks, hazardous materials releases
- Civil unrest, transportation incidents
- Public health emergencies (pandemic)
- Hurricanes, tornados, floods, wildfires, ...



4



How Can an IMT Help?

Provide strong management and support for “all-hazards” emergency incidents and planned events with:

- On-scene incident management
- Management support at an EOC



5



Purpose of a Type 3 IMT

- Strengthen ties with local, state, regional, and federal agencies to include: DHS, FEMA, USFA
- Seamless integration of command personnel between localities and allied/supporting agencies
- Direct involvement of multi-disciplined agencies in the incident command process
- Mutual aid support for the command function with pre-established policies and procedures
- Personnel are typed/qualified at specific positions



6



When Do You Need an IMT?

- For extremely large, complex major emergencies. Most “routine” incidents (99%) are handled by local resources.
- For managing significant events within a community such as funerals, parades, conventions, holiday events,



7



Why Use an IMT?

- Large scale incidents require considerable resources to ***sustain long-term*** and ***multiple operational period*** incidents.
- Command and control of large scale incidents requires personnel with ***extensive specialized training*** and ***experience***.
- May require up to 50 IMT members for command and general staff and unit/support positions.
- Most local/state agencies are not able to sustain this level of effort and maintain normal service delivery requirements for their community.



8



Local/Regional Concept of Operations

The requesting jurisdiction will retain command of the incident. The IMT will provide support and supplement command and control capabilities.

Or

If requested by the Agency Executive/Administrator, the IMT will take responsibility for the incident through a written Delegation of Authority



9



Hampton Roads Regional Commitment

In 2008 the Hampton Roads Fire Chiefs Association agreed to support and pursue funding for the development of a Regional Type 3 All Hazards IMT.



10



Hampton Roads Regional Commitment

The region includes the cities and counties in the Hampton Roads Planning District :

<u>Cities</u>		<u>Counties</u>
Chesapeake	Franklin	Gloucester
Hampton	Newport News	Isle of Wight
Norfolk	Poquoson	James City
Portsmouth	Suffolk	Southampton
Virginia Beach	Williamsburg	Surry
		York



UAWG Funding

The Hampton Roads Urban Area Working Group authorized UASI funding for development and sustainment of the HRIMT:

FY2009	\$ 1,734,500.00
FY2010	\$ 515,500.00
FY2011	\$ 200,000.00





Key Concepts

- The IMT will be comprised of Fire, EMS, Law Enforcement, Public Health, Animal Control, Public Works, and Voluntary Services.
- The grants provide funding for training, exercises, equipment, and management of the HRIMT.



13



Objectives (HRIMT)

- 75-member Type 3 All Hazards IMT
- Notification and deployment of team members
- Creation of a deployment cache
- Regional ICS training and coordination



14



Conception



- The Hampton Roads region assembled a Type 3 IMT and deployed to the Gulf Coast following Hurricane Katrina in 2005.
- The team relieved the NCR IMT in Harrison County, Mississippi for two (2) three week deployments



15



Reinforcement



- No formal Regional IMT established during the 2008 Suffolk Tornado incident.
- Ad Hoc local personnel attempted to fill the functions of an IMT.
- NCR-IMT responded to manage the incident.



16



Single Agency Utilization

- Multiple extended operational periods
- Mutual aid support to/from other Virginia agencies



17



Significant Events Utilization

- Special Event Management
- Emergent Mass Inoculation Command Staff



18



Regional Disaster Utilization

- Partner agencies have pre-existing procedures at the command staff level
- Support each other at IMT level



National Disaster Utilization

EMAC: deploy to other regions and to integrate with incoming mutual aid in our region





Personnel

- 73 members currently on roster
- 58 members trained to CGS or AHIMT level
- 38 members trained to Position Specific levels and actively shadowing



21



Personnel ...

- | | |
|------------------|------------------------|
| ▪ Fire | ▪ Law Enforcement |
| ▪ EMS | ▪ Emergency Management |
| ▪ Public Works | ▪ Computer/IT |
| ▪ Communications | |
| ▪ Marine | |



22



Personnel ...

- Chesapeake
- Hampton
- Newport News
- Norfolk
- Portsmouth
- Suffolk
- Virginia Beach
- Gloucester
- Fire Corp (CFD)
- Private Sector
- USCG
- VPA
- Program Manager



23



Future Opportunities

- Support each neighboring jurisdiction in IMT responses and exercises within the Hampton Roads Region and FEMA Region 3.
- Training and coordination with NCRIMT and CVAHIMT on classes, exercises, and activations.



24



Future Opportunities ...

- Training and coordination with United States Coast Guard and Virginia Port Authority on classes, exercises, shadowing, and activations:
 - VPA/USCG SAR Forum (March 2013)
 - Marine Shipboard Firefighting Symposium (May 2013)
 - Chesapeake Jubilee (May 2013)
- Training and coordination with VDFP, VDOF, VSP, and VDEM on classes, exercises, and activations.



25



Equipment Cache

- Western Shelter Tents
- Mobile 68 KW Generator
- 2013 BobCat (ToolCat)
- 2 portable 6600 KW Diesel Generators
- F4W Satellite & Communications Equipment
- Computer and IT equipment
- Storage shelving and pallet jack



26



Vehicles

- International 7400 Crew Cab 28' Box truck
- F550 Crew Cab Utility/Tow Vehicle
- C-24' Custom Trailer
- F450 Crew Cab Utility/Tow Vehicle



Vehicles





Shelters



29



IMT Training

- Initial Certification Class
- Quarterly Continuing Education Sessions
- Position Specific Training (Delivered by Type-1 IMT personnel)
- “Field Training/Shadowing” Missions with Type-1 IMT’s
- Team Certification Exercises
- National Conferences
- Regional & National Missions
- Annual Major Incident Simulation Exercises



30

HRPDC – Utility Directors



Training ...



... AHIMT Class

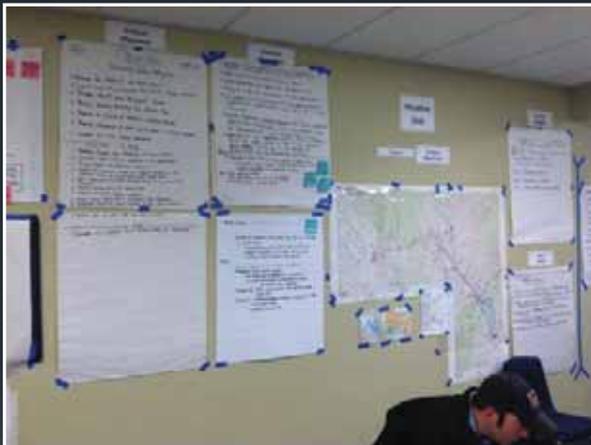


31

HRPDC – Utility Directors



Training ...



... UTRAIN Academy



32



Training



... AHIMT Class



33



IMT Activation

- Provide interim management of an incident until arrival of Type 1 or Type 2 team.
- Prepare team personnel for all-hazard incidents.
- Activate IMT personnel when local jurisdictions are overwhelmed or for incidents with prolonged operational periods.
- Allow for single team resources requests.



34



Public Utilities Involvement?

- Understands/applies ICS/NIMS process.
- Knowledge and expertise in utility related events/incidents.
- Awareness and training to identify utility operations and concerns pre/post disasters
- Dedicated professionals that are committed and available to serve the public.



35



Challenges Facing IMT Implementation

- Ensuring sufficient funds are available to continue training and operation
- Need more members in the following areas:
 - Public Works
 - GIS/IT
 - Finance
 - Logistics



36



Questions ?



Hampton Roads WATER QUALITY RESPONSE PLAN

Presentation to
Directors of Utilities Committee and Health Directors
June 6, 2013

Whitney S. Katchmark
HRPDC Principal Water Resources Engineer

Hampton Roads Water Quality Response Plan (2003)

2

- Cooperative endeavor designed to coordinate the various agencies response to a drinking water health threat.
- Establishes a procedure to assemble emergency representatives of the water utilities, regional health department, and local health districts in the event of a water quality emergency to determine the correct course of action and a coordinated response to the public and/or media.

2013 Update – Major Changes

3

1. Plan defined as guidance document that supplemental and secondary to internal notification, alert, and response plans and protocols used by Hampton Roads utilities, health districts and state agencies.
2. Inclusion of new information on laboratory resources and internet links to updated guidance and fact sheets.
3. Deletion of outdated phone trees and flow charts.
4. HRPDC will send out contacts and updated fact sheets twice a year.

2013 Plan Components

4

- Trigger Events from utility & public health perspectives.
- Response Team considerations and emergency contacts.
- Response Procedure including coordinated public and media outreach.
- Resources – information on EPA and VDH regulations, guidance, and fact sheets on waterborne health concerns.

Trigger Events

5

Utilities:

- Rely on established internal analyses and procedures to confirm if an event should trigger the response plan.
- Plan includes list of events that may be triggers.

Public Health:

- Occurs when illness or symptoms in 2 or more persons is acquired through consumption of or contact with drinking water.
- VDH's "Waterborne Illness Outbreak" guidelines included as reference.

Response Team

6

- A response team should be assembled to evaluate a trigger event.
- Response team should consist of emergency representatives from water utilities, VDH Offices of Epidemiology and Drinking Water and the local health district offices.
- For water utilities serving multiple jurisdictions and military installations, the response team should include emergency representatives from the potentially affected areas.

Response Procedure

7

1. A Confirmed Trigger Event Occurs
2. Assemble the Response Team
3. Evaluate the Health Implications of the Event
4. Water Utility Rep Contacts other HR Utilities
5. Local Health District Rep Contacts other HR Health Districts
6. Response Team Monitors Trigger Event to Evaluate and Modify the Action/Response

Resources

8

- Emergency Response Contact List
- Laboratory Facilities
- Public Notices of Potential Health Risks
- Fact Sheets

Recommended Action

9

- Approve Updated 2013 Water Quality Response Plan.
- Discuss possibility of conducting a tabletop exercise of WQRP as part of the Regional Catastrophic Planning grant.

askHRgreen.org Mobile Trailer – Housing and Transportation

OVERVIEW

In the past, the askHRgreen.org mobile education trailer (formerly the “HR WET” trailer) has been housed at various member localities and transported to events throughout the region. Each locality to house the trailer has taken on the responsibility for a two-year term. Virginia Beach Public Utilities has managed the trailer since 2011. Prior to that, Chesapeake Public Utilities maintained it from 2009 to 2011 and Newport News Water Works did so from 2007 to 2009. As of July 1, 2013, it will once again be time to find a new home for the trailer.

TRAILER HOUSING AND TRANSPORTATION RESPONSIBILITIES

If possible, the trailer should be housed under a covering to help protect it from the elements and prevent the exterior wrap from fading. The locality housing the trailer helps to maintain the state inspection and performs minor maintenance/repairs as needed. The truck required to tow the trailer should be a 3500 series or larger and have a receiver hitch.

Prior to/in between scheduled events, the trailer often requires restocking and must be towed first to the HRPDC storage facility in Greenbrier before reaching its final destination. Whenever possible, delivery/pickup of the trailer is scheduled during normal business hours on weekdays; however, some events/venues require delivery and/or pickup outside of normal business hours or on weekends. Those instances have been noted below for FY13.

FY13 EVENTS

7/7	VMI Community Health Day*	Norfolk
7/20	Latin Fiesta*	Virginia Beach
8/4	Beacon Light Civic League Berkley Reunion*	Norfolk
9/8 - 9/9	Hampton Bay Days	Hampton
9/13 - 9/16	Isle of Wight County Fair	Windsor
9/23	Go Green Expo - NN Master Gardeners	Newport News
9/28 - 9/29	Hampton Roads Sustainable Living Expo*	Virginia Beach
10/4 - 10/7	Peanut Festival	Suffolk
10/20	Williamsburg Farmer's Market	Williamsburg
2/8 - 2/10	PHBA Hampton Roads Home & Garden Show	Hampton
3/1 - 3/3	TBA Mid-Atlantic Home & Garden Show*	Virginia Beach
3/23	Community Day - Mack Benn Elementary	Suffolk
4/13	Williamsburg Farmer's Market	Williamsburg
4/20	Virginia Living Museum Earth Day Celebration	Newport News
4/23	Big Blue Goes Green event	Norfolk
4/27	Lafayette RiverFest*	Norfolk
6/6	NASA Safety & Health Expo	Hampton
6/26	Environmental Fair at Busch Gardens Brewery	Williamsburg
6/29	Olden Days	Smithfield



**indicates trailer had to be moved on a weekend/outside of normal business hours*

FY14 EVENTS SCHEDULED TO DATE

8/6	National Night Out	Driver
9/6 - 9/8	Hampton Bay Days	Hampton
9/12 - 9/15	Isle of Wight County Fair	Windsor
9/21	VB Master Gardener Fall Gardening Festival	Virginia Beach
10/12	LR NOW Fall Festival	Virginia Beach



Comparative Analysis:

Comparison of Regional and Non-Regional Approaches

June 5, 2013

Brown AND Caldwell

1

Contrast Two Approaches

- Non Regional
 - Rehab I/I reductions and costs from Locality PPFE
 - Locality Capacity Enhancements derived from Locality Capacity Assessments
 - Regional Capacity Enhancements based on post rehab flows from PPFEs and private I/I reductions
 - HRSD Committed Improvements Included
- Regional
 - Rehab I/I reductions and costs based on optimum level
 - Locality and Regional Capacity Enhancements based on post rehab flows from optimum level
 - HRSD Committed Improvements Included

2

Post Rehab Flows are Similar and Different

TREATMENT PLANT ID	Pre-Rehab		NON-REGIONALIZED		REGIONALIZED			
	2030 10-yr Peak Flows (mgd)	10-yr Peak Flow l/l (mgd)	Peak Flow Reduction (mgd)	Peak Flow l/l Reduction (%)	2030 10-yr Reduced Peak Flows (mgd)	Peak Flow Reduction (mgd)	Peak Flow l/l Reduction (%)	2030 10-yr Reduced Peak Flows (mgd)
AB	42.84	34.56	2.00	5.8%	40.84	2.08	6.0%	40.76
AT	227.83	184.42	31.83	17.3%	196.00	35.28	19.1%	192.55
BH	70.91	60.21	19.51	32.4%	51.40	14.12	23.4%	56.80
CE	66.12	52.76	6.02	11.4%	60.10	0.00	0.0%	66.12
JR	72.78	58.50	9.73	16.6%	63.05	10.01	17.1%	62.77
NA	98.48	77.63	13.87	17.9%	84.60	22.44	28.9%	76.04
VIP	142.46	119.86	12.75	10.6%	129.71	19.45	16.2%	123.01
WB	86.55	68.59	12.68	18.5%	73.87	17.44	25.4%	69.11
YR	47.04	36.81	6.46	17.5%	40.58	7.33	19.9%	39.71
Grand Total	855.0	693.3	114.8	16.6%	740.1	128.1	18.5%	726.8

Notes: Peak flows were calculated as the sum of the 10-yr peak hourly flow from each catchment.

Mix of Solutions Used in Comparative Analysis

- Pressure reducing stations to reduce system heads
- Increased size/new force mains
- Increased size gravity mains
- Storage to abate peak flows
- Upgrade terminal pump stations

Wet Weather Solutions beyond ISI and CIP

TP	SOLUTION TYPE	NON-REGIONALIZATION	REGIONALIZATION
		10-YEAR SOLUTIONS	10-YEAR SOLUTIONS
ARMY BASE	Upgrade PS	8	8
	Upgrade PRS		
	New PRS		
	Upsize force main	450 LF of 30"	450 LF of 30"
		20 LF of 20"	20 LF of 20"
	New force main		
	Upsize gravity		
	Storage		
ATLANTIC	Upgrade PS	12	12
	Upgrade PRS	3	3
	New PRS	3	3
	Upsize force main	300 LF of 16"	1,850 LF of 16"
		1,850 LF of 16"	
	New force main	7,000' of 12"	20,090' of 24" (c factor adjustment)
		20,090' of 24" (c factor adjustment)	20,090' of 24" (c factor adjustment)
	Upsize gravity		
Storage	5 sites / 13.6 MG total	5 sites / 16.6 MG total	
CHES-ELIZ		NONE	NONE

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5

5

Wet Weather Solutions beyond ISI and CIP

TP	SOLUTION TYPE	NON-REGIONALIZATION	REGIONALIZATION
		10-YEAR SOLUTIONS	10-YEAR SOLUTIONS
NANSEMOND	Upgrade PS	4	2
	Upgrade PRS		
	New PRS	1	1
	Upsize force main	45,600 LF 42"	32,230 LF 42"
		8,500 LF of 48"	8,500 LF of 48"
		4,400 LF of 48"	4,400 LF of 48"
		3,000 LF of 54"	3,000 LF of 54"
	New force main	63,200 LF of 30" (c factor adjustment)	63,200 LF of 30" (c factor adjustment)
		Upsize gravity	8,600 LF of 24"
		5,500 LF of 30"	5,500 LF of 30"
Storage	1 site / 1.9 MG total	1 site / 2.3 MG total	
VIP	Upgrade PS	14	12
	Upgrade PRS		
	New PRS		
	Upsize force main	2,250 LF of 30"	2,250 LF of 30"
		New force main	
	Upsize gravity	3,754 LF of 30"	3,030 LF of 30"
		5,570 LF of 18"	5,570 LF of 18"
			170 LF of 10"
Storage	2 sites / 2 MG	3 sites / 3.5 MG	

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6

6

Wet Weather Solutions beyond ISI and CIP

TP	SOLUTION TYPE	NON-REGIONALIZATION	REGIONALIZATION
		10-YEAR SOLUTIONS	10-YEAR SOLUTIONS
BOAT HARBOR		NONE	2,500 LF 18"
JAMES RIVER	Upgrade PS	4	2
	Upgrade PRS		
	New PRS	1	1
	Upsize force main		
	New force main		
	Upsize gravity		
	Storage	1 site / 3.6 MG total	1 site / 1.9 MG total
WILLIAMSBURG	Upgrade PS	7	6
	Upgrade PRS		
	New PRS	2	2
	Upsize force main	5,537 LF of 36"	5,537 LF of 36"
		26,000 LF of 42"	26,000 LF of 42"
	New force main		
	Upsize gravity		
Storage	3 sites / 7.5 MG total (includes 2.2 MG EQ at WBTP)	3 sites / 5.9 MG total (includes 1.4 MG EQ at WBTP)	
YORK RIVER	Upgrade PS	1	1
	Upgrade PRS		
	New PRS	1	1
	Upsize force main	284 LF of 16"	284 LF of 16"
		26,200 LF of 24"	26,200 LF of 24"
	New force main		
	Upsize gravity		
Storage			

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7

7

Preliminary 10-yr Non-Regional Scenario

Cost Breakdown by STP (10-yr Non-Reg)					
	Regional Wet Weather Improvements	Locality Cap Improvements	Locality/HRSD Rehab	Private I/I	Grand Total
AB	\$ 10,320,000	\$ 13,422,000	\$ 1,297,000	\$ 140,000	\$ 25,179,000
AT	\$ 139,326,000	\$ 96,847,000	\$ 498,376,000	\$ 91,628,000	\$ 826,177,000
BH	\$ 21,572,000	\$ 65,500,000	\$ 208,734,000	\$ 48,560,000	\$ 344,366,000
CE	\$ -	\$ 17,900,000	\$ 80,015,000	\$ 31,107,000	\$ 129,022,000
JR	\$ 81,364,000	\$ 20,413,000	\$ 89,240,000	\$ 14,839,000	\$ 205,855,000
NA	\$ 165,573,000	\$ 17,889,000	\$ 150,557,000	\$ 46,289,000	\$ 380,309,000
VIP	\$ 67,530,000	\$ 56,589,000	\$ 274,525,000	\$ 15,710,000	\$ 414,354,000
WB	\$ 101,676,000	\$ 60,964,000	\$ 112,464,000	\$ 18,914,000	\$ 294,019,000
YR	\$ 52,179,000	\$ 14,246,000	\$ 96,974,000	\$ 22,061,000	\$ 185,460,000
VARIOUS	\$ 19,850,000	\$ -	\$ 19,316,000	\$ -	\$ 39,166,000
SUM	\$ 659,390,000	\$ 363,769,000	\$ 1,531,501,000	\$ 289,248,000	\$ 2,843,908,000

NOTE: These estimates are preliminary and subject to change

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8

8

Preliminary 10-yr Regional Scenario

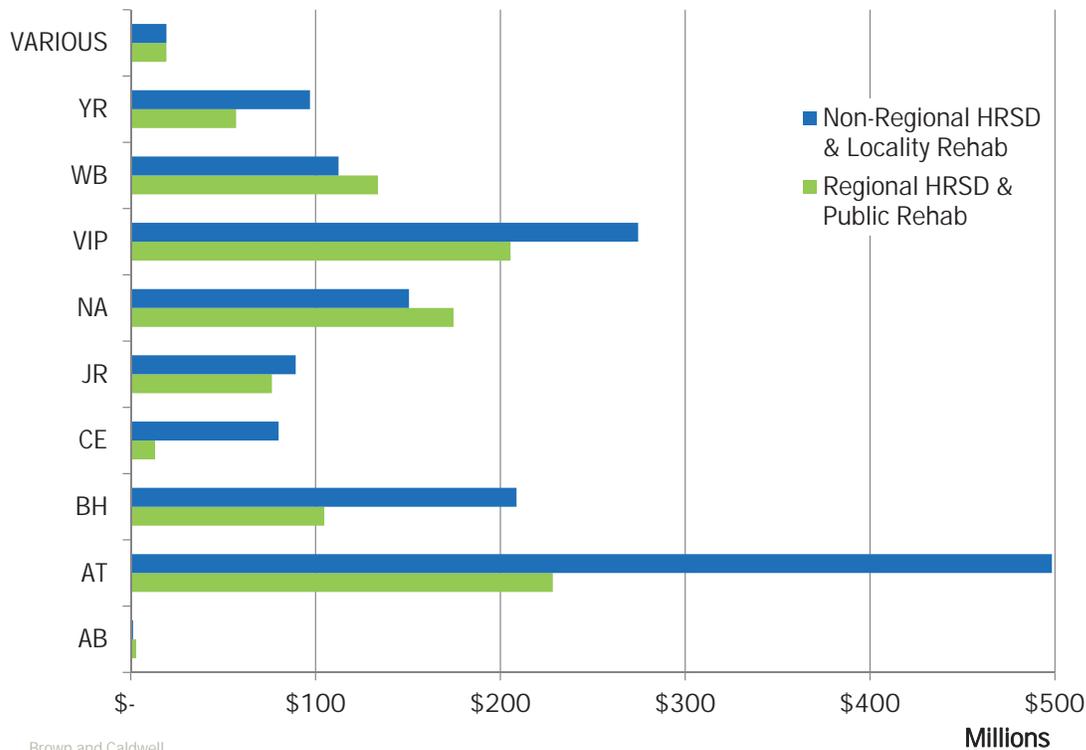
Cost Breakdown by STP (10-yr Reg)					
	Regional Wet Weather Improvements	Locality Cap Improvements	Regional/HRSD Rehab	Private I/I	Grand Total
AB	\$ 10,320,000	\$ 13,669,000	\$ 2,985,000	\$ 203,000	\$ 27,177,000
AT	\$ 143,382,000	\$ 86,822,000	\$ 228,355,000	\$ 59,239,000	\$ 517,797,000
BH	\$ 23,035,000	\$ 75,000,000	\$ 104,717,000	\$ 16,962,000	\$ 219,714,000
CE	\$ -	\$ 18,800,000	\$ 13,195,000	\$ -	\$ 31,995,000
JR	\$ 75,839,000	\$ 20,109,000	\$ 76,376,000	\$ 24,573,000	\$ 196,896,000
NA	\$ 148,414,000	\$ 8,612,000	\$ 173,563,000	\$ 41,613,000	\$ 372,203,000
VIP	\$ 68,696,000	\$ 56,592,000	\$ 205,498,000	\$ 17,018,000	\$ 347,804,000
WB	\$ 93,658,000	\$ 56,467,000	\$ 122,666,000	\$ 41,551,000	\$ 314,342,000
YR	\$ 51,945,000	\$ 11,246,000	\$ 58,586,000	\$ 9,336,000	\$ 131,112,000
VARIOUS	\$ 19,850,000	\$ -	\$ 19,316,000	\$ -	\$ 39,166,000
SUM	\$ 635,138,000	\$ 347,316,000	\$ 1,005,256,000	\$ 210,495,000	\$ 2,198,206,000

NOTE: These estimates are preliminary and subject to change
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9

9

10-yr Rehabilitation Costs



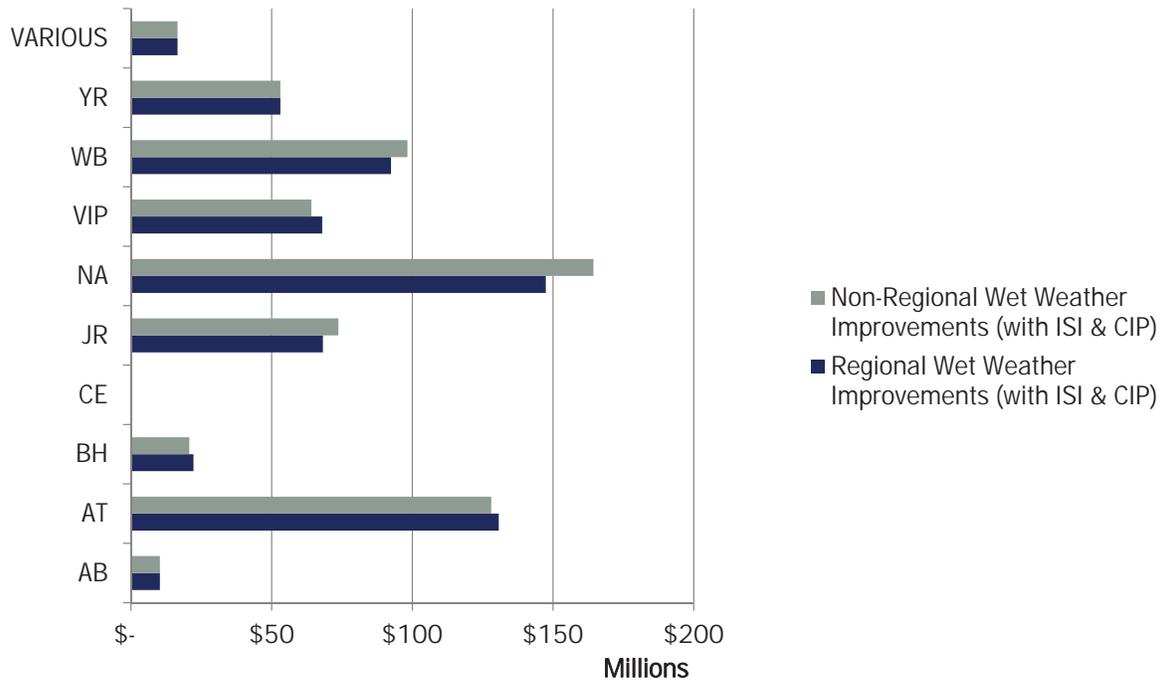
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Millions

10

10

10-yr Wet Weather Improvements

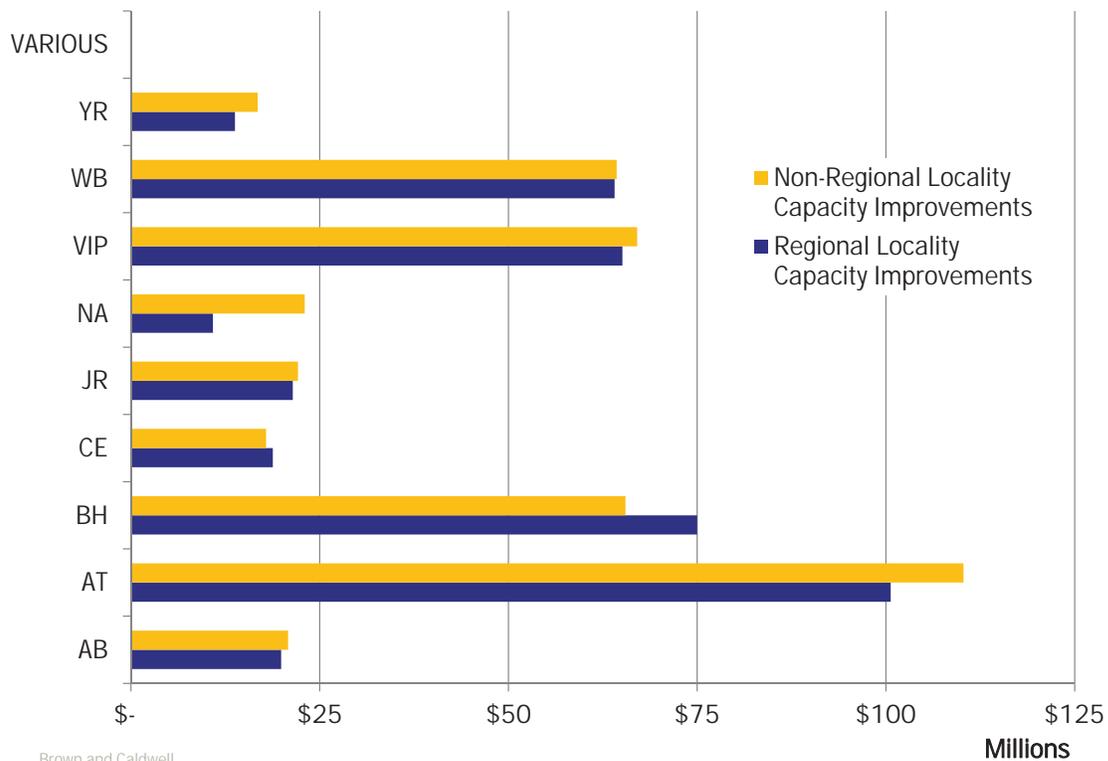


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11

11

10-yr Locality Capacity Improvements

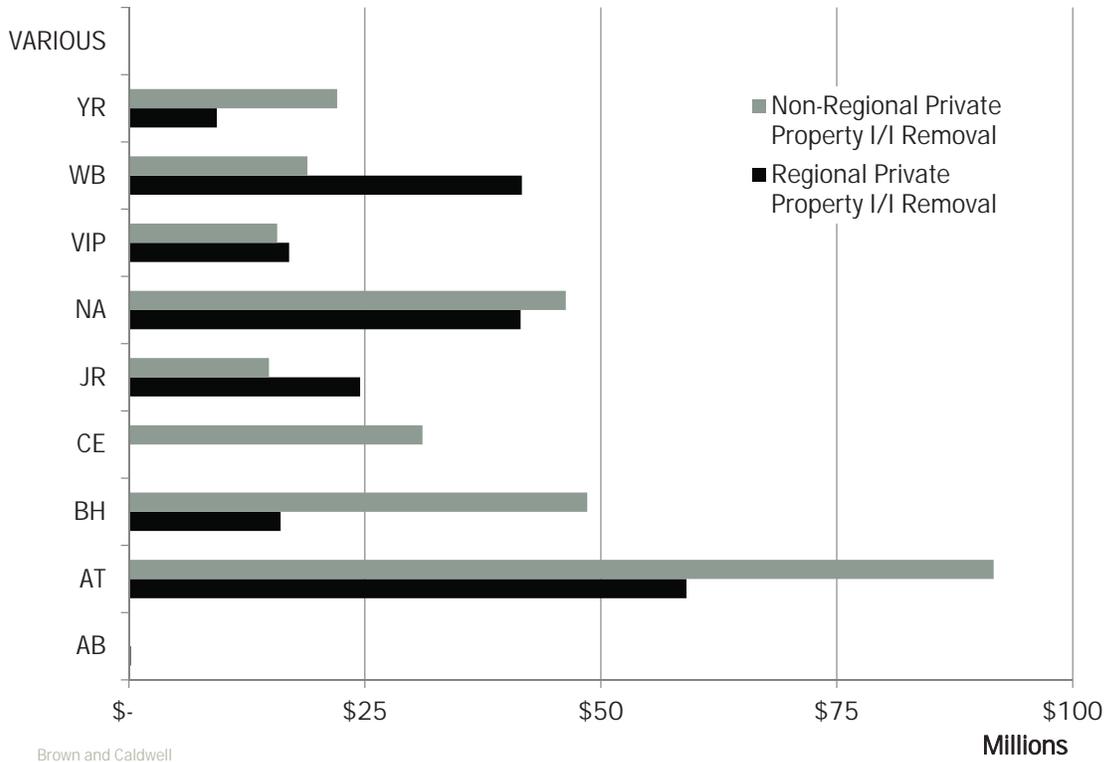


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12

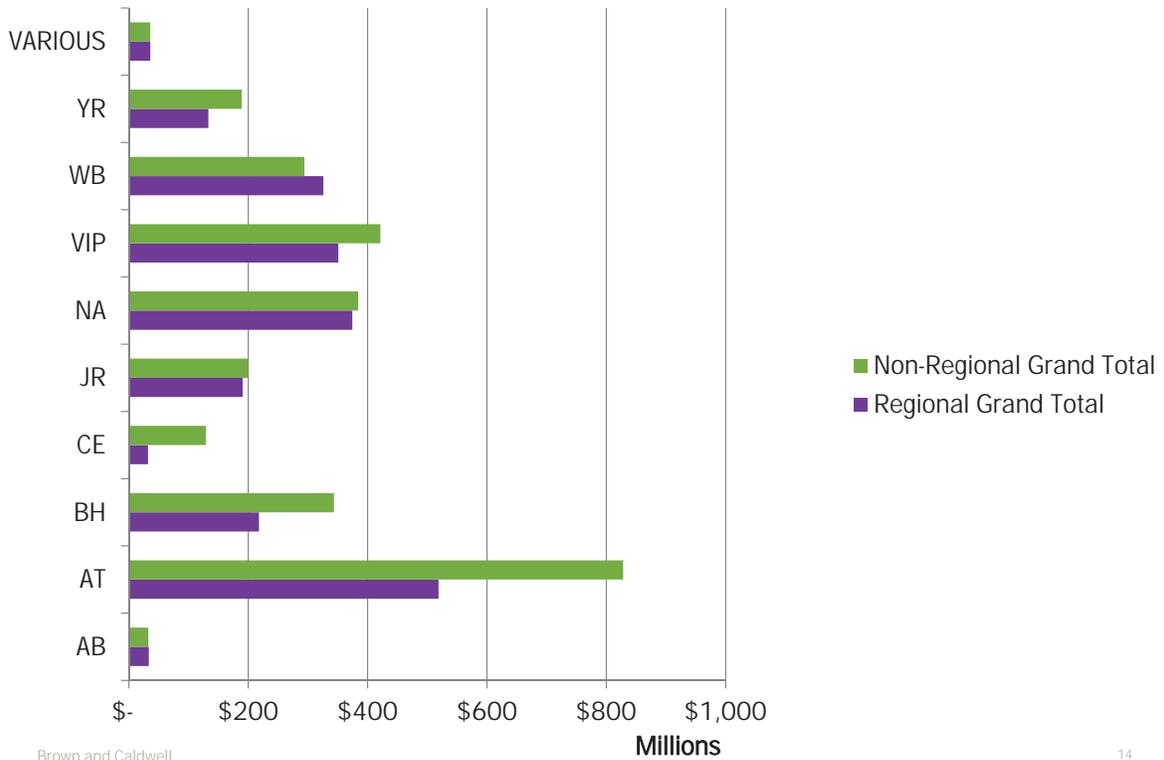
12

10-yr Private Property I/I



13

10-yr Total Program by Treatment Plant



14

14

Preliminary 10-yr Comparison

10-yr	Non-Regional	Regional	Delta	% Diff
Rehab	\$ 1,531,501,000	\$ 1,005,256,000	\$ 526,245,000	34%
Wet Weather Improvements	\$ 659,390,000	\$ 635,138,000	\$ 24,252,000	4%
Locality Capacity Improvements	\$ 363,769,000	\$ 347,316,000	\$ 16,453,000	5%
Private Property I/I	\$ 289,248,000	\$ 210,495,000	\$ 78,753,000	27%
Grand Total	\$ 2,843,908,000	\$ 2,198,206,000	\$ 645,702,000	23%

NOTE: These estimates are preliminary and subject to change

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15

15

Overall Preliminary Comparison

	Non-Regional (\$B)	Regional (\$B)	Delta (\$B)	% Diff
10-yr	\$ 2.844	\$ 2.198	\$ 0.646	23%
2-yr	\$ 2.499	\$ 1.890	\$ 0.609	24%

NOTE: These estimates are preliminary and subject to change

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16

16



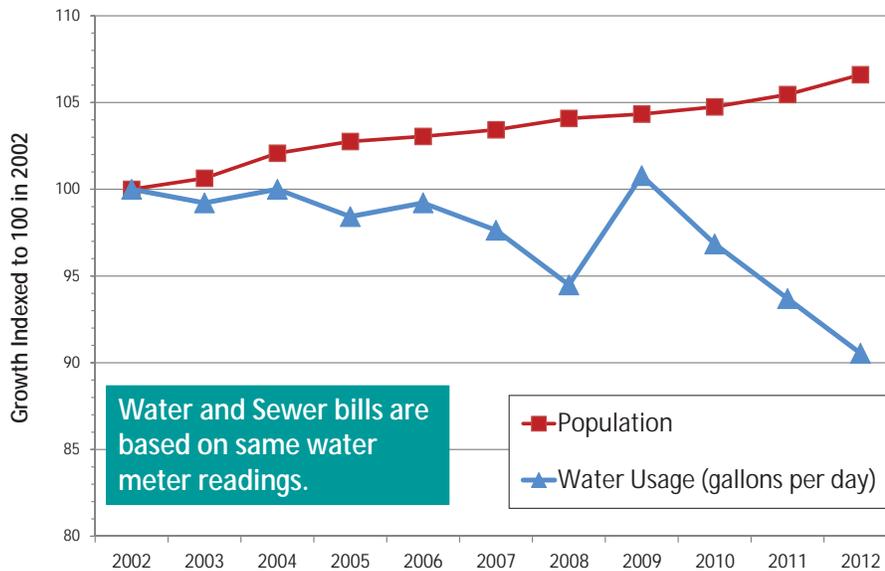
WATER & WASTEWATER UTILITIES: DESIGNING THE MODERN RATE STRUCTURE

Whitney Katchmark
Principal Water Resources Engineer
Presented to CAOs
July 18, 2013



2

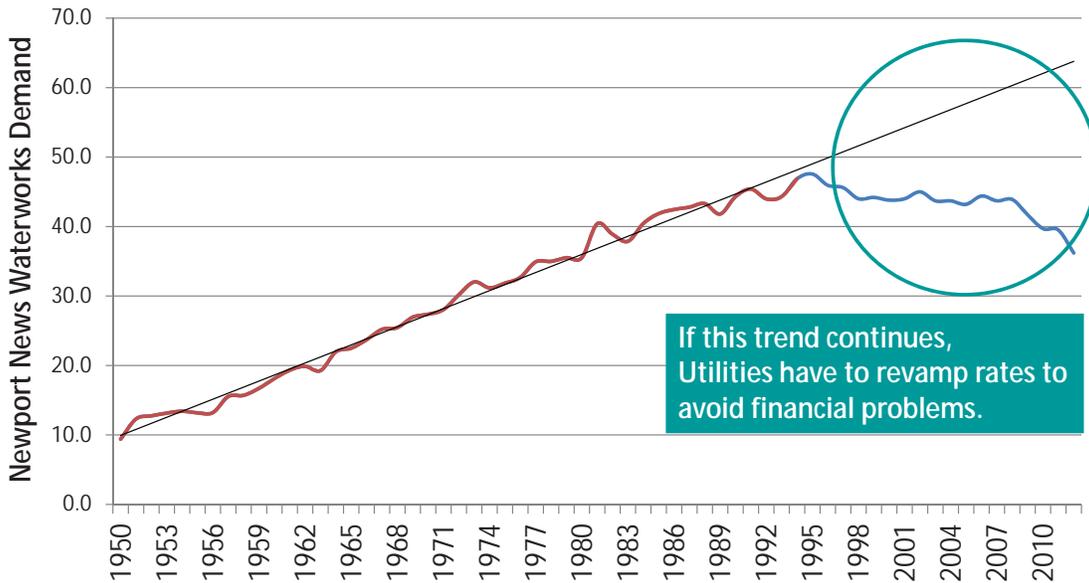
WATER USAGE DECLINING



Source: 2002-2011 population data from HRPDC 2012 Data Book; 2012 population estimate from the University of Virginia, Weldon Cooper Center for Public Service, July 1, 2012 Estimates for Virginia and its Counties and Cities; billed consumption data from HRSD FY2012 Comprehensive Annual Financial Report.

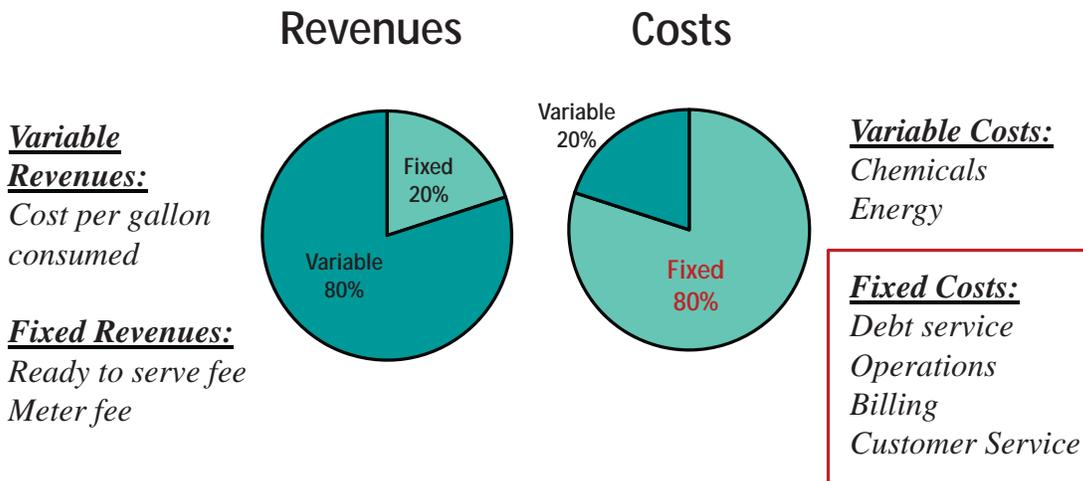


WHY THE DECLINE IS SURPRISING...

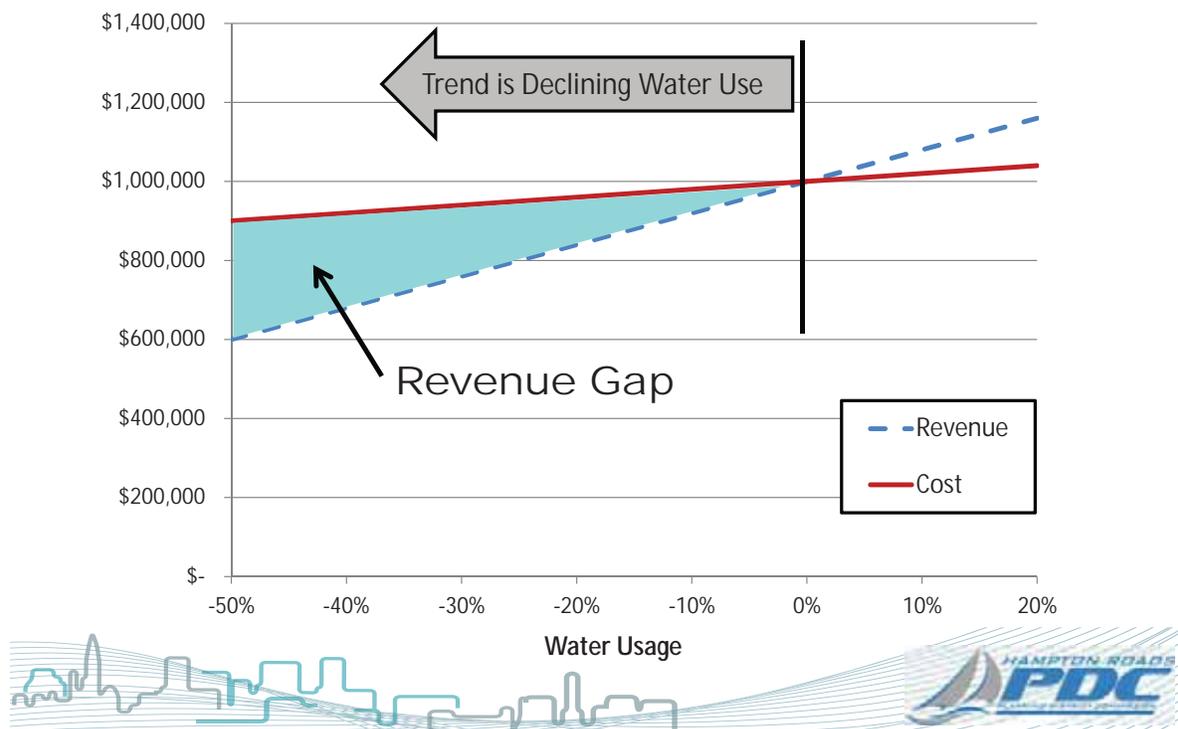


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AS USAGE DECLINES, REVENUE DECLINES BUT COSTS DON'T DECLINE



RATE STRUCTURE CREATES FUNDING GAPS



RATE STRUCTURE CREATES FUNDING GAPS

Example:

Start with a balanced budget of \$1M

Then water usage drops by 10%

Revenue drops from \$1M to \$920,000.

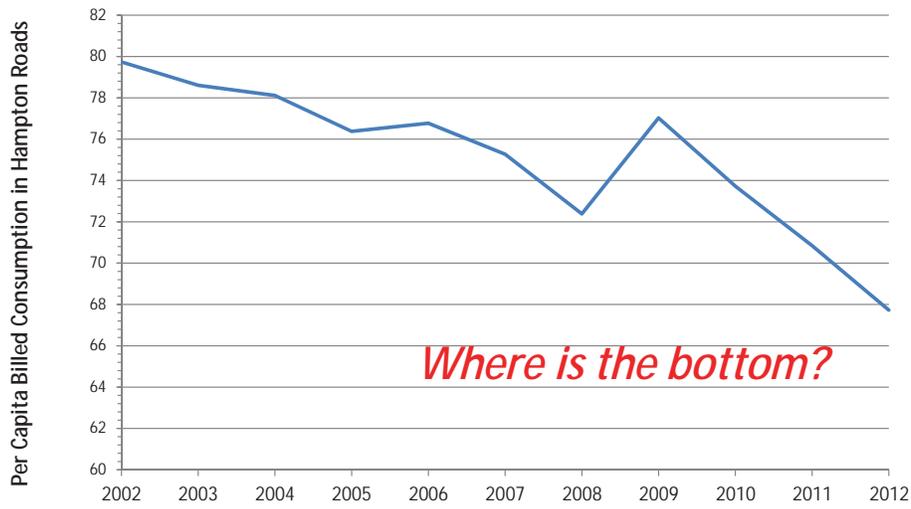
Costs drop from \$1M to \$980,000.

Result is \$60,000 funding gap.

Revenue is 6% less than Cost.



WILL THE DECLINE CONTINUE?



WHY ARE DEMANDS DECLINING?



WHY ARE DEMANDS DECLINING?

Indoor water use in a home built in 2011 is 35% less than indoor water use in a home built prior to 1994.



Flow Rates for Typical Household Fixtures and Appliances
Flow rates vary significantly before and after implementation of various federal standards.

Type of Use	Pre-Regulatory Flow*	Regulatory Standards and Flows			WaterSense/ ENERGY STAR Current Specification+
		Regulatory Standard (maximum)	Federal Law	Year Effective	
Toilets	3.5 gpf	1.6 gpf	US Energy Policy Act	1994	1.28 gpf
Clothes washers**	41 gpl (14.6 WF)	Estimated 26.6 gpl (9.5 WF)	Energy Independence and Security Act of 2007	2011	Estimated 22.4 gpl (8.0 WF)
Showers	2.75 gpm	2.5 gpm at 80 psi	US Energy Policy Act	1994	No specification
Faucets***	2.75 gpm	2.5 gpm at 80 psi (1.5 gpm)	US Energy Policy Act	1994	1.5 gpm at 60 psi
Dishwashers	14 gpc	6.5 gpc for standard; 4.5 gpc for compact	Energy Independence and Security Act of 2007	2010	5.8 gpc for standard; 4.0 gpc for compact

* Source: Handbook of Water Use and Conservation, Amy Vickers, May 2001
** Average estimated gallons per load and water factor
*** Regulation maximum of 2.5 gpm at 80 psi, but lavatory faucets available at 1.5 gpm maximum
+ Source: www.epa.gov/watersense and www.energystar.gov/watersense



COSTS LIKELY TO RISE, NOT STAY THE SAME

Increasing Regulatory Requirements

- Regional upgrades to the sewer system to meet Consent Order/Consent Decree for overflows estimated to cost \$2B.
- HRSD must spend over \$400M to upgrade treatment plants to meet stricter permit limits on nutrients in discharges.
- Norfolk spent \$50M to upgrade reservoir dams to meet revised dam safety regulations.
- Newport News Waterworks estimate upgrades to Lee Hall reservoir will cost \$21M.



COSTS LIKELY TO RISE, NOT STAY THE SAME¹¹

Aging Infrastructure

"Early Thursday, the City of Chesapeake reported a water main break at Taylor and Pughsville Road that left hundreds without water" - Dec 16, 2011, WAVY

"Newport News Waterworks is investigating an apparent leak in a 42 inch raw water main where it crosses the Colonial Parkway in York County" - Jan 2011

"Burst pipe leads to boil-water advisory for Oceanfront" *Virginian-Pilot*, March 26, 2013

"Suffolk sewage spill dumps 9.3 million gallons in creek" *Virginian Pilot*, November 2, 2012

"Key Norfolk sewage pipeline to be replaced" *Virginian-Pilot*, January 5, 2012

"Norfolk road reopens after water-main break, flood" *Virginian-Pilot*, June 4, 2009



WHY AREN'T RATES STRUCTURED TO MATCH COST STRUCTURE?¹²

Conservation goal has driven rate structures.

Need to have some incentive not to waste water. If water demands skyrocket, utilities have to develop new wells and reservoirs or build new wastewater treatment plants. This infrastructure is expensive and difficult to permit.

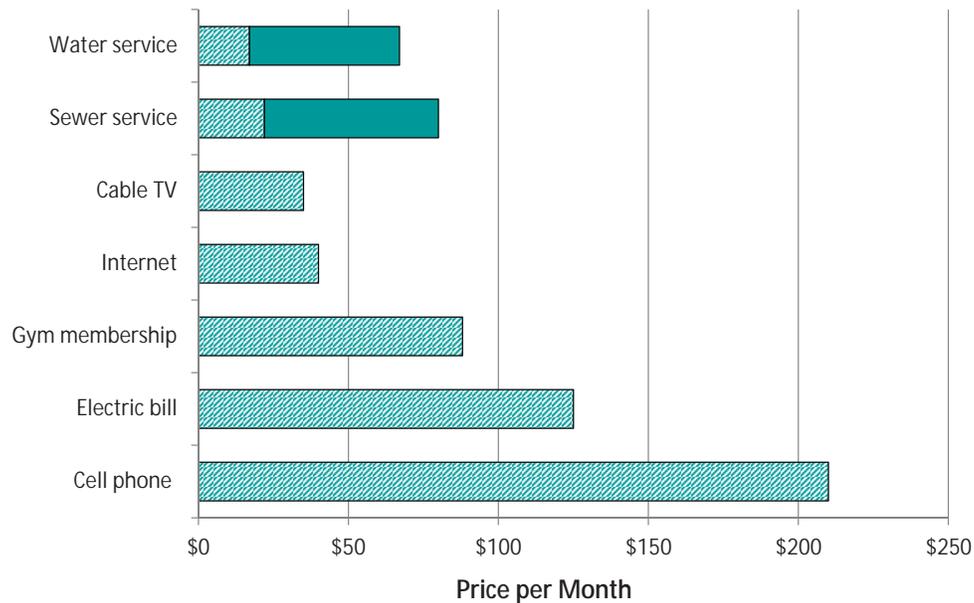
Perception that it is fair to pay for what you use.

Affordability goal dictates relatively low utility rates.

Water and sewer are essential public health services. Citizens should not be priced out of fundamental government services.



ARE WATER & SEWER BILLS EXPENSIVE?¹³



Prices are based on representative data collected by HRPDC staff.
Gym membership and cell phone prices are based on costs per household. Water & sewer based on 5000 gallons.



14

REGIONAL UTILITY OBJECTIVES

- Move to a model of selling a service, not a commodity.
 - Change rate structures that reinforce idea that customer is paying for how much water used.
 - Instead promote service: reliability, quality, firefighting
- Ensure utilities meet financial goals.
 - Create stabilize revenue stream with more fixed revenue.
 - Improve accuracy of demand projections and associated revenue.
 - Depoliticize rate changes
- Balance the need to ensure financial stability of the utility and maintain affordability for all customers.
 - Consider expanding customer financial assistance.



POTENTIAL NEXT STEPS

1. Distribute HRPDC whitepaper on *Designing a Modern Rate Structure for Water and Wastewater Utilities*.
2. Develop public outreach campaign.

For example, customers of the Charlotte-Mecklenburg Utility in North Carolina had finance questions along the following lines:

- *Where do utilities get their money?*
- *Whose pockets am I lining with my rates?*
- *What do you mean the utility is not run for profit?*
- *How do I know that they are doing the right things with my money?*
- *What are they doing with the money they already have?*



"Money borrowed to build and maintain plants and pipelines also must be repaid with income collected from customers. Suffolk's utility fund owes about \$306 million in long-term debt, according to budget director Anne Seward. Most of that was amassed in recent years to expand the G. Robert House Jr. Water Treatment Plant in Chuckatuck and to extend water and sewer lines to new developments." *Virginian-Pilot, May 1, 2013*

"Marty Schlesinger, the Public Utilities Department director, said the core problem is the system needs more customers, and it's aggravated by a drop in water usage in Gloucester of about 10 percent over the past four years. Hiking fixed fees for base usage would have to almost double to maintain revenue neutrality, he said." *Daily Press*

"Also down are water and sewer revenues. About 70 people were on the cutoff list in February, Smithfield Treasurer Ellen Minga said. "It's getting to be more common, but that was a particularly heavy month", she said. Minga attributes the deficit to lower consumption. The lower usage could be due to higher rates and/or weather. "That's just something that we are keeping an eye on because we changed the structure last year." *Smithfield Times, March 20, 2013*

"What we deliver to people has mass," Newport News Waterworks director Brian Ramaley said. "It's not electricity or cell phone service. For a typical customer, we deliver literally hundreds of pounds of product on a daily basis."

...the average customer uses about 34,300 pounds of water each month, so even with the rate changes, the monthly bill will be less than \$1 per day.

"You can't get dirt delivered to your house for a dollar per thousand pounds," he said.

"Water is literally cheaper than dirt." *WYDaily.com, April 5, 2013*

"In order to fund Newport News Waterworks, officials have been forced to dip into a reserve fund. They have taken around \$20 million in the last four years, leaving about \$30 million. Dropping below \$25 million would put their bond rating on the line." *WYDaily.com April 5, 2013*

In a report to the council last month, Albert Moor, director of Suffolk public utilities, said the city has 25,000 water and sewer accounts, compared with about 150,000 accounts in Virginia Beach. "A penny to their rates yields a lot more than a penny to ours," Moor said. He estimated 1 cent "generates about \$24,000 on water and about \$23,000 on the sewer side." At the same time, he said, water consumption has fallen by 5 to 6 percent because of conservation. With the decline in residential construction since 2008, new installations have fallen from about 1,100 a year to around 300, depriving the city of hookup fees of \$5,520 per residence. "It's almost like the perfect storm," Seward said. "It's coming at us from both directions." *Virginian-Pilot, May 1, 2013*

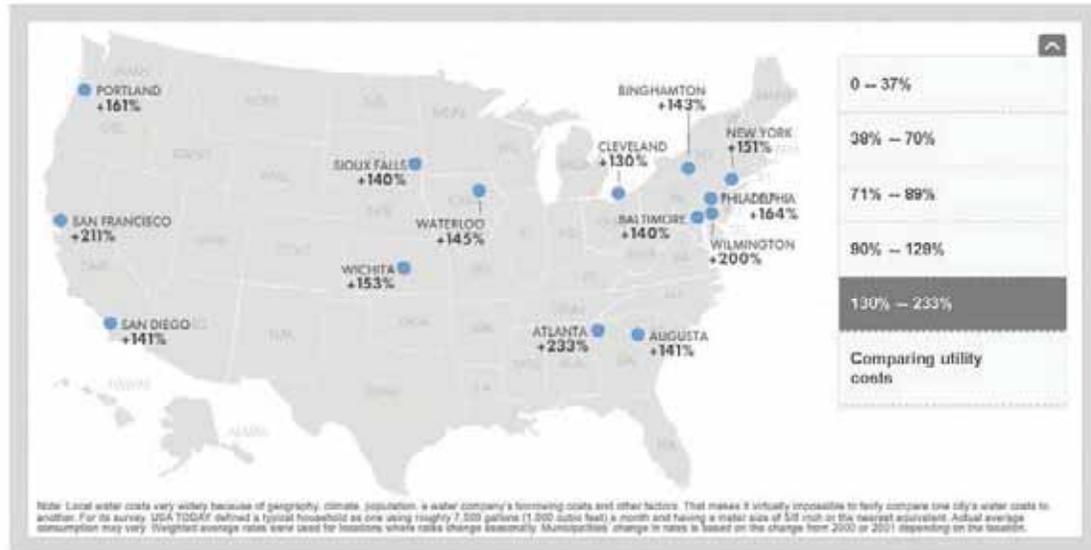


RATES INCREASING ACROSS U.S.

Water costs getting more expensive

<http://usatoday30.usatoday.com/money/economy/story/2012-09-27/water-rates-rising/57849626/1>

A USA TODAY survey of 100 municipalities found residential water bills in at least one in four places have doubled in the past 12 years.



Sources: Breen & Veatch, Pacific Financial Consultants and USA TODAY research of municipal water data; Energy Information Administration, Bureau of Labor Statistics, and USA TODAY research. By Kevin A. Koppala, Danny Gainer, Jean Murphy, Doug Carroll, Kevin McCoy, Oliver St. John and Tom McGarrity, USA TODAY.



Mission H2O Virginia - Overview

Message from the Coordinator, Andrea Wortzel

While Virginia is blessed with abundant water resources, the recent episodic periods of drought combined with increasing population have demonstrated the potential and increasing likelihood of shortages in the future. The protracted litigation over the Lake Gaston pipeline and the King William Reservoir has also demonstrated that there are impediments to water supply projects, impacting the ability to alleviate future shortages. To address these issues, the Virginia General Assembly has mandated development of a state water supply plan. The development of sound plans will require agricultural interests, manufacturing facilities, utilities, water authorities, and municipalities to grapple with natural, legal and political challenges to implementing a workable solution.

Like many other issues in Virginia, water rights are subject to the legal constructs dating back to the eighteenth century. The litigious English riparian system, which is still in force today, is ill-suited to dealing with allocation of water among multiple users and the level of confrontation is exacerbated in a crisis. Concerns about inter-basin transfers also pose significant hurdles to getting water where it is needed.

Finally, Virginia has a tension in its soul between its interest in protecting personal property rights, promoting economic development and preserving the environment. We need a better framework to address and balance these issues.

Our Mission

Providing a safe, reliable water supply for all of Virginia's water needs is the goal. Natural forces, archaic laws, and political inertia are the hurdles. Our mission is to recognize the challenges and develop a plan to find and fund a long-term solution to our goal of a safe, reliable water supply at a reasonable cost.

- [Goals and Initiatives](#)

Mission H₂O News

Goals and Initiatives

GOALS/INITIATIVES FOR JUNE 2013 – MAY 2014

- I Maintain Communications with State Water Commission

- II Coordinate Collaboration and Development of Positions on Water Supply Issues
 - A. Provide Updates on Approval Process for Local/Regional Water Supply Plans and Opportunities for Participation
 - B. Track Development of and Outline Comments on State Water Resources Plan and Opportunities
 - C. Evaluate Definition and Application of Environmental Flow, Including Tracking and Commenting on DEQ's Environmental Flows Study
 - D. Develop Comments/Participate in Development of Groundwater Withdrawal Permitting Guidance
 - E. Develop Comments on CEQ Principles and Requirements for Federal Investments in Water Resources
 - F. Follow ESA Listings/Guidance Developments
 - G. Provide Alerts on DEQ Regulatory/Guidance/Policy Development Relating to Water Supply Management, Particularly With Respect to Grandfathering Provisions

- III Advocate for Regional Water Supply Studies/Solution
 - A. Eastern Groundwater Management Area
 - B. James River Study
 - C. Maintenance of Interstate Commission on the Potomac River Basin

- IV Legislative Tracking (if water supply-related legislation introduced)
 - A. Legislative Preview Provided Prior to General Assembly Session
 - B. Weekly Legislative Updates Throughout the Session
 - C. Development of Talking Points on Legislation of Interest
 - D. Legislative Wrap Up Provided After General Assembly Adjourns

- V Populate Mission H2O Website Based on Member Requests
 - A. Draft and Final Local/Regional Water Supply Plans
 - B. Articles of Interest
 - C. Water Supply Related Events

- VI Annual Meeting

Annual Dues: \$4,000

For more information on Mission H2O, please contact [Andrea Wortzel](#).

Mission H2O

Groundwater Management Area Stakeholder Subgroup

I. Work Plan:

Coastal Plain Model Analysis			
Task	Staffing	Timing	Budget
Sensitivity Analysis	Arcadis	4 weeks after budget approved	\$6,400
Interpretation/Application of Aquifer (3 vs. 1)	Arcadis	4 weeks after budget approved	\$2,500
Application of 1 Foot Drawdown Criteria	Arcadis	4 weeks after budget approved	\$2,800
Definition of Stabilized	Arcadis	4 weeks after budget approved	\$1,800
Fall Line Analysis	Arcadis	4 weeks after budget approved	\$1,800
Participation in Development of DEQ Guidance on Implementation of Groundwater Withdrawal Regulations			
Representation on Stakeholder Group	Mission H2O / Arcadis	After finalizing work plan, contact DEQ regarding need to develop guidance and topics to be addressed.	Included within MH2O Dues
Application of Model Analysis to Guidance	Arcadis	In conjunction with development of guidance	Included within Technical Budget Above
Collaboration on Opportunities to Optimize the Resource			
Facilitation of Discussion Among Interested Parties	Mission H2O/Hunton & Williams	Organize meeting for September	Included within MH2O Dues
White Paper on Options	Mission H2O/Hunton & Williams	Circulate prior to September meeting	Included within MH2O Dues

Development of Position Papers	Mission H2O/Hunton & Williams	September – November	Included within MH2O Dues
Coordination with DEQ Water Supply Plan Development	Mission H2O/Hunton & Williams	Notify DEQ after September meeting and request coordination as plan is developed	Included within MH2O Dues
Messaging			
Legislators	Stakeholder Group	Immediate and ongoing	Included within MH2O Dues
Agencies	Stakeholder Group	Immediate and ongoing	Included within MH2O Dues
Local Elected Officials/Corporate Leaders	Stakeholder Group	Immediate and ongoing	Included within MH2O Dues
Public	Stakeholder Group	Immediate and ongoing	Included within MH2O Dues

II. Estimated Budget

Assuming 12 participants in this effort:

Technical/Arcadis - \$1,275 per member

Advocacy/Facilitation/MH2O - \$1,500 (if joining solely for the groundwater effort)

TOTAL: \$2,775 per participant / \$1,275 for current MH2O members