

**EASTERN VIRGINIA GROUNDWATER MANAGEMENT
ADVISORY COMMITTEE**

WORK GROUP #1 – ALTERNATIVE SOURCES OF SUPPLY

MEETING NOTES – MEETING #6 - DRAFT

THURSDAY, MARCH 10, 2016

DEQ PIEDMONT REGIONAL OFFICE – TRAINING ROOM

Meeting Attendees

EVGMAC – WORKGROUP #1	
Larry Dame – New Kent County	Mike Kearns – Sussex Service Authority
John “J” Dano – Hampton Roads Sanitation District	Britt McMillan - ARCADIS
Judy Dunscomb – The Nature Conservancy	Dave Morris – City of Newport News
Jason Early – Consulting Hydro-Geologist	Ram Natarajan – Aqua Virginia
	Donald Rice – Newport News Waterworks
Bill Gill – Smithfield Foods	Paul Rogers, Jr. – Farmer – Production Agriculture
Carole Hamner – WestRock	Erik Rosenfeldt – Hazen and Sawyer
Steve Herzog – Hanover County	Gina Shaw – City of Norfolk – Department of Utilities
Gregg Jones – Cardno	Mike Vergakis – James City County
David Jurgens – City of Chesapeake	

EVGMAC – WORKGROUP #1 – STATE AGENCIES	
John Aulbach – VDH - ODW	Scott Kudlas - DEQ
Skip Harper – VA Department of Housing and Community Development – State Building Codes Office	

NOTE: Advisory Committee Members NOT in attendance: Richard Costello – VA Home Builders; Kyle Duffy – International Paper; Katie Frazier – VA Agribusiness Council; Jeff Gregson – VA Well Drillers Association; Kristen Lentz – City of Norfolk; Thomas Swartzwelder – King and Queen County ; Chris Thomas – King George County SA; Wanda Thornton – Eastern Shore Groundwater Committee; Brett Vassey – VA Manufacturers Association

INTERESTED PARTIES ATTENDING MEETING	
Preston Bryant – McGuire Woods Consulting	Doug Powell – James City Service Authority
Jeff Corbin – Restore Systems	Shannon Varner – Troutman Sanders/Mission H2O
Robert Crockett – City of Chesapeake/Advantus Strategies	John Voorhees - Cardno
Ted Garty – City of Chesapeake	Christine Wolfe - JLARC
Craig Maples – City of Chesapeake	

SUPPORT STAFF ATTENDING MEETING	
Brandon Bull - DEQ	Mark Rubin – VA Center for Consensus Building
Craig Nicol - DEQ	Jutta Schneider - DEQ
Bill Norris - DEQ	

1. Welcome & Opening Comments – Introductions (Mark Rubin – Meeting Facilitator)

Mark Rubin, Executive Director of the Virginia Center for Consensus Building at VCU, opened the meeting and welcomed everyone to the meeting.

He asked for introductions of those in attendance and asked for the organizations that they represented.

He noted the email that had been sent to the group as a way to get the group started back on track after the long break for the General Assembly:

Ladies and Gentlemen:

The winter hibernation of the GWAC is rapidly drawing to close. For those of you who misspent your hibernation period at the General Assembly, you have my sympathy.

We are scheduled to reconvene on March 10 at 9 am at the DEQ offices in Innsbrook.

Gregg Jones and others of you have made some suggestions for how we should move the ball forward in considering alternative supplies. Building on these thoughts, Scott and I have the following thoughts.

We have spent a fair amount of time exploring alternatives and coming up with screening criteria. It is now time to start putting this information into a form that can be presented to the Advisory Committee for some preliminary decision making.

The suggestion is that we start looking at what alternative sources are most appropriate for a specific area within the region. Gregg suggested we use this approach and obtain some more information on reclaimed water and said he thought it would work for all alternative sources.

Our current thought is to look at those alternatives we have already explored and see which are most appropriate for a specific area within the region. We can use the alternatives listed by local governments in the water supply plans (copy attached) as well as the screening criteria we have already identified (copy attached) to help with this analysis.

It is our further thought that this analysis will create specific recommendations for the advisory committee to utilize in its decision making. Once the most appropriate alternative supplies are identified then the other subcommittees can make recommendations about funding, alternative management structures and permitting issues as to each supply or for the identified alternatives as a whole.

Unless we hear serious objections to this approach before the 10th, we will follow it in our next meeting.

Thank you for your consideration.

2. BREAK-OUT GROUPS – GEOLOGIC REGIONS:

Mark noted that the balance of the meeting would be spent in small break-out groups based on geologic regions looking at the “alternative sources of supply that would be deemed most appropriate for each region – looked at from the perspective of using your own local funding and from the perspective of having state or other alternative funding options.

He noted that the work of this group is pivotal to the discussions of the main advisory group and the other workgroups so that the viable and appropriate alternatives can be identified and fleshed out.

The group discussed the state water resource plans that had been developed by localities and regions across the state – it was noted that at the time those were developed that the alternatives that were identified in those plans were those that appeared to be feasible but were not necessarily those that were preferable – so all alternatives are on the table for discussion by the workgroup.

The individual break-out groups were instructed to look at those alternatives that would be most appropriate for a specific region. It was noted that the groups need to look at the criteria to determine the appropriateness of the alternatives and to identify what criteria was used to select the alternatives. In addition any key questions related to the selection of the alternatives should be noted. Their goal was to refine the list of options to those that are preferable for each of the specific regions.

Scott Kudlas identified those meeting attendees that would participate in each of the 3 break-out sessions – “Fall-Line”; “Central”; and “Eastern”. The meeting attendees broke out into the individual break-out groups and meet from 9:15 until approximately 11:00.

3. Reports from Break-Out Groups: “Fall-Line” (Carole Hamner – Break-Out Group Spokesperson)

Carole Hamner with WestRock, who served as the “spokesperson” for the break-out group, provided a summary of the discussions of the “Fall-Line” Break-Out Group. She provided the following summary of those discussions:

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- *Our team represented the groundwater management area along the fall line.*
 1. *We decided that the fall line includes the following localities*
 - a. *Appomattox River Water Authority Area*
 - b. *Caroline County*
 - c. *Cumberland County*
 - d. *Goochland County*
 - e. *Henrico County*
 - f. *Powhatan County*
 - g. *Hanover County*
 - h. *Town of Ashland*
 - i. *King George County*
 - j. *Middle Peninsula (if you include West Point/WestRock)*
 - k. *Northern VA*
 - l. *Spotsylvania County*
 - m. *City of Fredericksburg*
 - n. *Safford County*
 2. *Alternatives that could be managed and funded on a local level at the fall line include surface water/reservoir water treatment and distribution. (These were mentioned in most of the Water Management Plans for the Regions mentioned above)*
 3. *Alternatives that would most probably need a regional solution would be aquifer recharge and water reuse/reclaim. We believed these alternatives would require a regional approach for the following reasons:*
 - a. *High costs for recharge projects, considering the HRSD project presented in one of the EVGMAC meetings.*

- b. *For wastewater re-use, we would need a mechanism to pay for additional treatment to meet water quality needs and provide the piping/pumping distribution system(s) to suitable recipients.*
 - c. *Need a means to determine who would receive the water (ranking system based on need, type of water being used, water quality required, distance from the wastewater plant to the user, etc.).*
 - d. *For potable water re-use (for example, surplus from drinking water supply/utilities), we would need a mechanism to pay for the distribution system, and a means to determine who would receive the water.*
 4. *Note that for aquifer recharge, the team believed that recharge along the fall line would result in a “bigger bang for the buck” because the fall line is where the critical areas are located. A recharge rate of 2.5 MGD (as an example) at the fall line would result many fewer critical cells than the same recharge rate at a deeper portion of the aquifer and/or one farther away from the fall line.*
 5. *The team did not think that desalination would be a suitable alternative because the surface water along the fall line is not brackish. The team did not consider desalination on the Pamunkey River for West Point, since a desalination unit there would only serve one major user.*
 6. *We agreed that the best alternatives would be those that serve the highest number of people/entities; i.e.; in high density areas rather than rural areas. It would be risky to provide a costly solution for alternative water sources if it would only serve a few groundwater users.*
 7. *The team said there must be a way to consider the risk associated with the alternative water projects.*
 8. *We agreed that those who are in rural/isolated areas should most probably continue using groundwater.*
 9. *Suggestions included:*
 - a. *Formation of a financial pool to provide funding/incentives to encourage the regional projects.*
 - b. *A program to evaluate the economic benefit of the alternative water projects so that growth will not be hindered by the lack of groundwater.*
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4. Reports from Break-Out Groups: “Central” (Ram Natarajan – Break-Out Group Spokesperson)

Ram Natarajan with Aqua America and the spokesperson for the “Central” Break-Out Group provided the following summary of the group’s discussions:

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1. *Discussed alternates to GW usage and challenges faced within the regions specially James City county and Newport News Water Works*
 - *Challenges include:*
 - § *Majority of capital spent from the 80’s*
 - § *New revision to GW withdrawal possess additional challenges and increase in customer rates*
 - § *Financial option for funding such projects are limited*

- § *Frustrating as administrators as most of these option were discussed 20 years back and decision was made to use GW but not future restrictions makes utilities go back to the drawing board*
- § *Ultimately customer and citizens pay price and elected members have hard time justifying price increase*

2. *Surface Water Alternates:*

- *System divided into Lower James and Northern Neck*
- *Lower James is not an option as limited option for Surface water allocation.*
- *Northern Neck has more option but more obstacles to surface water impoundment*

3. *Alternates vetted on the following topics:*

- *Policy Discussion*
 - § *Wetland mitigation*
 - § *Replenishment amendment*
 - § *Cost Sharing – Regional Approach*
 - § *Water conservation*
 - § *Provide environment conducive for private investment*
- *Environment*
 - § *Work with environment groups to get consensus*
- *Cost / Finance –*
 - § *Utilize government grants. Private entity also needs to have access to private funds*
 - § *Encourage private utilities to invest in assets*
- *Security*

4. *Potential Sources of supply*

- *Aquifer Recharge – HRSD*
- *Surface water Impoundment (evaluation)*
- *Utilize private utilities for funding and managing assets*

5. *How do you address Money?*

- *Look at private utility investment*
- *Look at cooperatives*

5. Reports from Break-Out Groups: “Eastern” (Gregg Jones – Break-Out Group Spokesperson)

Gregg Jones, Technical Director – Water Resources/Vice-President Natural Resources & Health Sciences Division of CARDNO served as spokesperson for the “Eastern” Break-Out Group and provided the following summary of the discussions from that group:

1) Fresh Surface Water - direct use or storage in off-stream reservoirs.

Cons

- a) Limited supply, must go far upstream to get fresh water*
- b) Stakeholders in those areas may resist the transfer of this water to coastal areas*

Pros

- a) Treatment costs are reasonable compared to some other sources*

2) Stormwater – creating storage facilities to capture stormwater

Cons

- a) Water not available during periods of low rainfall*
- b) Limited average yield*
- c) Vulnerable to contamination*
- d) Necessary infrastructure could be extensive*

Pros

- a) Conjunctive Use – use water from the stored stormwater when it is available and rest groundwater wellfields*

3) Reclaimed Water

A) Direct Potable – treated wastewater goes directly into potable water distribution system

Cons

- a) Negative public perception*
- b) Currently prohibited by regulations*

Pros

- a) Abundant*
- b) Consistent*

B) Indirect Potable – water has significant residence time in a reservoir or an aquifer prior to capture and routing to water treatment system and entry into potable distribution system

Cons

- a) *Water is treated twice, which increases cost*

Pros

- a) *Abundant*
- b) *Consistent*
- c) *Allowed under current regulations*

C) Non-Potable uses to offset groundwater use (using reclaimed for non-potable uses such as irrigation or to irrigate golf courses

Cons

- a) *Distribution system is required*

Pros

- a) *Abundant*
- b) *Consistent*
- c) *Allowed under current regulations*
- d) *Offsets groundwater use*

D) Wastewater Treatment Plant Interconnects

Cons

- a) *Interconnect pipelines required*

Pros

- a) *Abundant*
- b) *Consistent*
- c) *Allowed under current regulations*
- d) *Increases efficiency and utilization of reclaimed water*

4) Desalination

A) Seawater

Cons

- a) *Expensive*
- b) *Waste concentrate disposal issue*

Pros

- a) *Unlimited source*
- b) *Drought proof*

B) Surface water – desalination of brackish water in tidal portions of rivers

Cons

- a) *Waste concentrate disposal issue*
- b) *Expensive*

Pros

- a) *Abundant*
- b) *Consistent*
- c) *Allowed under current regulations*
- d) *Less expensive than seawater desalination*

C) Brackish Groundwater

Cons

- a) *Expensive*
- b) *Waste concentrate disposal issue*

Pros

- a) *Abundant*
- b) *Consistent*
- c) *Allowed under current regulations*
- d) *Less expensive than seawater desalination*
- e) *Has been implemented successfully in the region*

5) Decentralized small-scale water treatment systems supplied by water storage facilities such as quarries or other impoundments

Cons

- a) *Water may be less available during periods of low rainfall*
- b) *Necessary infrastructure could be extensive*

Pros

- a) *Takes advantage of the water supply potential of small scale storage facilities*

6) Inter-Basin Transfers

Cons

- a) *Expensive due to the need for long transmission pipelines*
- b) *Stakeholders in the source regions may resist the transfer of this water to the coastal region*

Pros

- a) *Can provide significant quantities of water that requires relatively low levels of treatment*

6. Next Steps – Next Meeting (Mark Rubin):

This has been a useful exercise but for our next meeting we need to further refine these options and we need to look at identifying: “What are the questions that we need to be asking?”; “What are the issues that we need to address?”; “What are the next steps in this process?”; “What are the barriers to implementation of these preferred alternatives?”; “What volume of water do we need to meet current and anticipated future needs?”; “What is the target that we are shooting for?”; “What is the potential additional supply needed?”

ACTION ITEM: Bill Norris will identify available dates for a meeting in the near future and will send out a Doodle Poll to select a preferred date for the next meeting.

7. Public Comment: No public comment was offered.

8. Meeting Adjournment:

Mark Rubin thanked everyone for their attendance and participation in today's meeting.

The meeting was adjourned at approximately 12:05 P.M.