

**EASTERN VIRGINIA GROUNDWATER MANAGEMENT
ADVISORY COMMITTEE**

WORK GROUP #1 – ALTERNATIVE SOURCES OF SUPPLY

MEETING NOTES – MEETING #4 - FINAL

MONDAY, DECEMBER 7, 2015

DEQ PIEDMONT REGIONAL OFFICE – TRAINING ROOM

Meeting Attendees

EVGMAC – WORKGROUP #1	
Jay Bernas – Hampton Roads PDC	Gregg Jones – Cardno
Brad Campbell – Aqua Virginia	David Jurgens – City of Chesapeake
Brad Copenhaver – VA Agribusiness Council	Whitney Katchmark – Hampton Roads PDC
Richard Costello – VA Home Builders	Mike Kearns – Sussex Service Authority
Larry Dame – New Kent County	Britt McMillan - ARCADIS
Judy Dunscomb – The Nature Conservancy	Dave Morris – City of Newport News
Jason Early – Consulting Hydro-Geologist	Paul Rogers, Jr. – Farmer – Production Agriculture
Bill Gill – Smithfield Foods	Erik Rosenfeldt – Hazen and Sawyer
Carole Hamner – WestRock	Gina Shaw – City of Norfolk – Department of Utilities
Steve Herzog – Hanover County	Mike Vergakis – James City County
Bryan Hill – James City County	

EVGMAC – WORKGROUP #1 – STATE AGENCIES	
John Aulbach – VDH - ODW	Scott Kudlas - DEQ
Allen Knapp – VDH - OEHS	

NOTE: Advisory Committee Members NOT in attendance: Kyle Duffy – International Paper; Katie Frazier – VA Agribusiness Council; Jeff Gregson – VA Well Drillers Association; Skip Harper – VA Department of Housing and Community Development – State Building Codes Office; Kristen Lentz – City of Norfolk; Ram Natarajan – Aqua Virginia; 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	
Robert Crockett – City of Chesapeake/Advantus Strategies	Chris Pomeroy – Western Tidewater Water Authority
Barrett Hardiman – Luck Companies	Doug Powell – James City Service Authority
Dan Holloway – CH2M	Shannon Varner – Troutman Sanders/Mission H2O
Craig Maples – City of Chesapeake	Andrea Wortzel – Troutman Sanders/Mission H2O
Joe McMahan - JLARC	
Jamie Mitchell – Hampton Roads Sanitation District	

SUPPORT STAFF ATTENDING MEETING	
Elizabeth Andrews - DEQ	Bill Norris - DEQ
Brandon Bull - DEQ	Valerie Rourke - DEQ
Craig Nicol - DEQ	Mark Rubin – VA Center for Consensus Building

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 provided a brief summary of the meeting of the Advisory Committee meeting that had occurred on Thursday, November 19th. (A copy of the meeting notes had been distributed to the group prior to today's meeting.) His summary included the following:

- Basically it was an education and reporting session, no decisions requested, Scott discussed permitting program, # of questions, about monitoring, enforcement, accounting for growth, critical concepts, the only way to stop decline is to stop withdraw, trying to manage the decline, if you withdrawal, it's effect is different, sustainability discussed, brief report from the workgroups, alternative source interested with injection programs, more information about trading, alternative structure seemed ok with what we were talking about, presentation on western tidewater legislative proposal, will meet again on 12/14.

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

2. Presentation – DEQ's Water Reclamation and Reuse Program (Valerie Rourke)

Valerie Rourke with DEQ's Office of Land Application Programs provided an overview of DEQ's Water Reclamation and Reuse Program.

ACTION ITEM: A Copy of the presentation will be distributed to the members of the Workgroup and will be posted on the EVGMAC Webpage.

3. BREAK

4. Facilitated Break-Out Exercise: Discussion of Opportunities and Constraints of Identified Alternative Sources (Mark Rubin; Scott Kudlas and Workgroup Members)

Scott Kudlas divided the attendees into two groups to discuss the opportunities and constraints of identified alternative sources. Before the group started their discussions and deliberations, Whitney Katchmark presented a map that her staff had developed. Her overview included the following:

- This map is a work in progress.
- It started out as an effort to identify the different water sources that people were using in the Eastern Virginia Groundwater Management Area.
- The 14 largest groundwater users are identified (the purple circles on the map).
- Then the map captures where the surface water sources are – so the reservoirs were added – then streams were identified; followed by intakes (little yellow plus sign).

- The object was not to just point out one thing but to point out how all these things are interconnected in terms of geography.
- Then the largest waste water treatment plants in the region were included. All of the green squares are waste water treatment plants that have a discharge of greater than 1 mgd.
- The smaller waste water treatment plants are identified with a square with no color added.
- Power plants are also identified.
- The salinity indicators (from the Bay program) as various colors are also included.

Copies of the map were distributed to the group.

ACTION ITEM: Copies of the map will be provided as a resource on the Eastern Virginia Groundwater Management Advisory Committee webpage.

The following list of "Alternative Sources" that had been previously identified by the group was distributed to the groups for their consideration:

ALTERNATIVE SOURCES

- Aquifer storage and recovery and artificial aquifer recovery
- Desalination
- Demand management and conservation
- Direct potable reuse
- Indirect potable reuse
- Increased use of surface water in lieu of groundwater
- Reservoirs
- Water trading
- Interconnections between localities
- Collaborative infrastructure maintenance
- Salt water intrusion barriers
- Reclaim water unused under a permit
- Converting stormwater BMPs
- Rainwater harvesting
- Grey water, stormwater reuse
- Framework for small projects
- Impoundments

ALTERNATIVE SOURCE CRITERIA

- Affordability
- Protect public health

- Sustainable/adequate supply
 - Reliable volume
 - Protect quality and integrity of products that rely on water
 - Consistency of quality
 - Ease of monitoring as to quality and quantity
 - Practical, available, feasible
 - Assurance of safety to the public
 - Availability during emergencies
 - Adequate quantity for current and future needs
 - State and federal regulatory consistency
 - Rural and small locality sensitivity
 - Effective waste management from purification process
 - Protect interests of private well owners
 - Unregulated sources/unpermitted users
 - Allow citizens to build and live where they want
 - Balance the needs of current users with future needs
 - Minimize stranding of existing infrastructure
 - Injection
 - Consistency in design standards
 - Optimize demand management where practicable
 - Consistency in consumption standards
 - Small scale alternatives
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The instructions to the groups were to consider and discuss for your areas "What is the most viable alternative source that we ought to be looking at?" What priority would you place on the options? What options are not feasible for your area? What constraints are there for the various options? Why are some options not viable choices? The groups met and discussed the various "alternative sources" viable for their areas and reported back to the group. The idea is to come up with some options so that ultimately we can arrive at an integrated water management system.

The groups reported on their deliberations and noted the following:

What can we "knock off the list" or put as a lower priority; what things are more management options than alternative sources?

- Water trading;
- Interconnections between localities (one group felt better about the possibility of interconnections as an option for a management option);
- Collaborative infrastructure maintenance;

- Demand management and conservation;
- Reclaimed water unused under a permit (this is more of a management strategy – it doesn't create more water);
- Framework for small projects

Options that could be considered as the least desirable – less feasible:

- Direct potable reuse (also could be considered not feasible);
- Reservoirs are probably not feasible – Impoundments that are built by nature on a major river are probably less feasible – those filled by artificial means are more feasible (probably something that could be focused on).
- Some things are just very limited – water trading – it is viable but it is really case specific.
- Looking at trading in terms of banking could be a topic to focus on.
- Ocean desal is on the least desirable list but brackish desal should not be.
- Salt water intrusion barriers – limited application
- Converting stormwater BMPS – very small scale – site specific – small scale for localized irrigation
- Rainwater harvesting – have to have somewhere to store it

Areas to focus on:

- Impoundments by diversion
- Injection (HRSD example)
- Converting BMPs to small local irrigation
- Conventional ASR – use of surface water
- Banking – Trading
- Brackish Desal
- Direct reuse – nonpotable – irrigation
- Increase surface water supply

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

This has been a useful exercise but the harder piece is to figure out exactly how we are going to evaluate the options – probably at the next meeting we will need to start talking about figuring out a matrix that can be used to evaluate and prioritize the available options.

The thought right now is that for the next meeting that there will be some discussion of reservoirs and an identification of the "lessons learned" from the last big attempt to put a reservoir in Virginia. Luck Stone wants to talk to the group about the use of quarries and there have been some discussions about including information related to the development of "private impoundments" (off-stream). In addition we will likely need to talk about payment structures – the types of things that might incentivize folks to put these types of things together.

A suggestion has been made for this group to try to meet in early January prior to the start of the General Assembly Session. Sometime during the first two weeks of January were recommended.

ACTION ITEM: Bill Norris will identify available dates during the first two weeks in January and will send out a Doodle Poll to select a preferred date for the meeting.

6. Other Item for Consideration:

It was suggested that it might be a worthwhile exercise to take a step back and identify how we would design a water system to support the population is we were just starting out? If we had just landed in James Town and were looking to the future – what kind of water system would we have designed? What if we were starting with a blank slate? How would we address the future needs if this was virgin land? How would we make the water system physically work? How would we design a system to supply our current needs? It was suggested that we might be able to look at it from the perspective of meeting industrial needs. It might be helpful to be able to identify those mega industrial sites that are under consideration.

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.