

**EASTERN VIRGINIA GROUNDWATER MANAGEMENT
ADVISORY COMMITTEE**

**JOINT MEETING OF
WORKGROUP #1 – ALTERNATIVE SOURCES OF SUPPLY &
WORKGROUP #2A – ALTERNATIVE MANAGEMENT STRUCTURES SUB-
WORKGROUP/DRAFTING WORKGROUP**

MEETING NOTES – DRAFT

**TUESDAY, DECEMBER 13, 2016
TROUTMAN SANDERS**

9:00 – 12:00

Meeting Attendees

EVGMAC WG #1 & EVGMAC WG #2A – SUB-WORKGROUP	
Richard Costello – WG#1 - VA Home Builders	David Jurgens – WG#1 - City of Chesapeake
Jason Early – WG#1 - CARDNO	Whitney Katchmark – WG#1 & WG#2A - HRPDC
Bill Gill – WG#1 – Smithfield Foods, Inc.	Eric Rosenfeldt – WG#1 – Hazen and Sawyer
Barrett Hardiman -	Matt Wells - WestRock
Steve Herzog – WG#1 - Hanover County	Andrea Wortzel – WG#2A - Troutman Sanders/Mission H2O

EVGMAC STATE AGENCIES WG #1 & WG #2A	
Susan Douglas – WG#2A - VDH-ODW	Mark Rubin – VCU – Mtg. Facilitator
Scott Kudlas – WG#1 & WG#2A - DEQ	

INTERESTED PARTIES ATTENDING MEETING	
Barrett Hardiman – Luck Companies	

SUPPORT STAFF ATTENDING MEETING	
Brandon Bull - DEQ	Jutta Schneider - DEQ
Bill Norris - DEQ	

HANDOUTS:

- **Draft Meeting Agenda (Emailed and Hard Copy at Meeting);**
- **Goal of Meeting Statement**
- **Draft Notes from the last Joint Meeting of Workgroup #1 and Workgroup #2 – Tuesday, November 15, 2016**
- **Revised Strategy Matrix**

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 this drafting committee meeting of volunteers from the Eastern Virginia Groundwater Management Advisory Committee Workgroups on Alternative Sources of Supply (WG#1) and Alternative Management Structures (WG#2A). He asked for introductions of those in attendance.

2. Goal Statement:

Mark noted that the goal for the meeting as distributed prior to the meeting was:

Our goal is to draft a brief paragraph or two on each of the various alternative source projects that are included in the scoring matrix. The paragraph should identify the source and then state the benefits, costs and feasibility of each project. To create a more efficient meeting next week, please take a few minutes and write a paragraph on each project which you are familiar with to bring to the meeting. We will create a paragraph or at least bullets for each project based on your description. For those projects that no one is familiar with we will create bullets from scratch at the meeting or discuss whether to include them in the matrix at all. If possible please route your descriptions and/or bullets to me so they can be copied for distribution at the meeting. By the end of the meeting the goal is to have rough drafts of these contextual paragraphs or sets of bullets to polish up and append to the matrix for presentation to the main Advisory Committee.

He told those in attendance that if we were successful in identifying some specific bullet points during the course of the meeting that could be used to develop those specific paragraphs that we will have a successful meeting.

3. Revised Scoring Matrix:

Andrea Wortzel told the group that Jamie Mitchel could not be here today but that she had sent her a copy of a revised spreadsheet. Andrea had copies made of the revised spreadsheet/scoring matrix and provided that as a handout to the meeting participants - included was a copy of the scoring spreadsheet as originally envisioned and discussed by the workgroup; a revised scoring spreadsheet that focused on the four main areas of “Benefits”; “Costs”; “Feasibility”; and “Actions Needed/Approvals Required”; and an example of those new columns filled out for one of the existing projects – HRSD SWIFT.

ACTION ITEM: A copy of the revised scoring spreadsheet will be distributed to the workgroup as information following the meeting.

An example of a completed Existing Project using the revised Scoring Sheet is included below:

New Source Project Type: Aquifer Recharge

Source of Water: Purified Wastewater

Scale: Regional

Existing Proposals: HRSD SWIFT

Benefits: Restores the aquifer by recharging it with approximately 120 MGD, volume offsets current

permitted use, modeling demonstrates water level increases through much of eastern Virginia, can protect groundwater from saltwater intrusion. With phased construction of the advanced water treatment facilities, modeled water levels increasing by 2037 due to increase in pressure. Travel time of the actual injected water is very slow, modeled at no more than 1 mile in 180 years. Additional benefits: Reduces surface water inputs of nutrients, reduces or eliminates need for urban stormwater retrofits within Hampton Roads required as part of the CB TMDL, has the potential to reduce land subsidence allowing more time for adaptive strategies.

Costs: Estimated \$1 billion in capital, approximately \$21-43 million in annual O&M.

Feasibility: Aquifer recharge using purified wastewater currently practiced in California, Texas, Florida, New Mexico, and Arizona. Not currently practiced in Virginia. Permitting is through EPA Region III UIC program. City of Chesapeake has an Aquifer Storage and Recovery well that has been in use since the 1980's. This work provides local information on injection practices.

Actions Needed/Approvals Required: **Actions Needed:** Installing a 1 MGD demonstration project for further evaluation. Will be on-line in early 2018. Information will be useful for further defining regulatory targets and desired water chemistry for aquifer compatibility. Currently working collaboratively with DEQ/VDH and EPA to identify permit and monitoring requirements. HRSD's ability to financially support the program is contingent upon approval of an Integrated Plan that will allow HRSD to prioritize SWIFT ahead of the bulk of the wet weather consent decree projects.

Approvals Needed: Permitting is through EPA Region III Underground Injection Control (UIC) program. Full-scale SWIFT will require individual UIC permit.

4. Discussions – Development of Bullet Points – Compilation of Flip-Chart Notes:

The Sub-Workgroup volunteers/participants discussed a number of generic project types and attempted to development bullet points for each of the project types. The sub-workgroup volunteers/participants concurred that the information contained in their discussions as reflected in the flip-chart notes should be included in the report from the Workgroup to the Advisory Committee. Those discussions are summarized in the following flip-chart notes:

Aquifer Recharge:

A. Purified Wastewater:

a. Benefits:

- i. Recharges Aquifer**
- ii. Available Source**
- iii. Potential to Reduce Nutrient Loading to Surface Water**
- iv. Potential to Reduce Land Subsidence**
- v. Utilizes Natural Structure for Distribution and Storage**

b. Costs: \$\$\$

c. Actions Needed:

- i. Pilot/Demonstration Study**
- ii. Risk Analysis**
- iii. Government Approvals**

d. Feasibility

- i. **Proven Technologies in Other Areas**
 - ii. **Proven Demand**
 - iii. **Need Means to Recover Costs**
 - iv. **Public Acceptance**
 - e. **Specific Projects:**
 - i. **HRSD – Regional; Underway**
 - ii. **New Kent – Local; Potential**
 - iii. **Hanover – Local; Potential**
- B. Aquifer Recharge – Surface Water**
 - a. **Benefits:**
 - i. **Recharges Aquifer**
 - ii. **Available Source**
 - iii. **Potential to Reduce Land Subsidence**
 - iv. **Utilizes Natural Structure for Distribution and Storage**
 - b. **Costs: \$ - \$\$ - Depends on Whether New Construction is Needed**
 - c. **Feasibility:**
 - i. **Proven Technology**
 - ii. **Available Source**
 - iii. **Need Means to Recover Costs**
 - d. **Actions Needed/Approvals:**
 - i. **Pilot/Demonstration Study**
 - ii. **Risk Analysis**
 - iii. **Government Approvals**
 - e. **Specific Projects: ASR – Chesapeake**
- C. Reservoirs – Quarry:**
 - a. **Benefits:**
 - i. **Existing**
 - ii. **Reduces GW Demand**
 - b. **Costs: \$ - \$\$ - Depends on Location and Whether New Construction is Needed**
 - c. **Feasibility (Low Because of Location Constraints):**
 - i. **Proven Technology**
 - ii. **Proximity to Source/Demand**
 - iii. **How Water Tight is It – Water Loss/Leakage**
 - d. **Actions Needed:**
 - i. **Withdrawal Permit – Surface Water**
 - ii. **Access to Quarry – Easements**
 - iii. **Chemical Analysis**
 - e. **Specific Projects:**
 - i. **Luck Stone**
 - ii. **Richmond**
 - iii. **VERDON – Hanover**

- iv. **Cranston Mill Pond**
- D. Surface Water Reservoir (New):**
 - a. **Benefits: Reduces Groundwater Demand**
 - b. **Costs: \$\$ - \$\$\$ - There Could Also Be Mitigation Costs**
 - c. **Feasibility:**
 - i. **Environmental Impacts**
 - ii. **Proximity to Source & Demand**
 - iii. **Local Acceptance**
 - iv. **Ability to Find Partners**
 - d. **Actions Needed:**
 - i. **Regulatory Stability; Consistency & Predictability**
 - ii. **Environmental Permits**
 - e. **Specific Projects: None**
- E. Surface Water Withdrawal:**
 - a. **Benefits: - Reduce Groundwater Demand**
 - b. **Costs: \$ - \$\$ - Depends on Quality – Need for treatment and Location**
 - c. **Feasibility:**
 - i. **Flow Issues – Fish**
 - ii. **Location for Results of Treatment**
 - iii. **More Affected by Drought**
 - d. **Actions Needed:**
 - i. **Environmental Permits**
 - ii. **Local Acceptance**
 - e. **Specific Projects:**
 - i. **James City County**
 - ii. **New Kent**
- F. Infrastructure (Potable Water) Enhancements:**
 - a. **Benefits:**
 - i. **Reduce Groundwater Demand**
 - ii. **Increased Reliability**
 - iii. **Support Economic Development**
 - iv. **Uses Available Water**
 - v. **Creates Opportunity to Level Playing for Rates**
 - b. **Costs: \$ - \$\$\$ - A La Carte**
 - c. **Feasibility:**
 - i. **Good at Local Level; Harder at Regional Level**
 - ii. **Funding is Issue – No Means to Recover Costs**
 - iii. **Politics**
 - iv. **Maintenance Inevitable at Some Point**
 - v. **Compensation/Interconnection Issue**
 - d. **Actions Needed:**

- i. **Potential Alternative Management Structure Needed**
 - ii. **Perception/Historic Approach – Reorienting Policy Makers – Political Will**
 - iii. **Incentives for Public/Private Projects**
 - e. **Specific Projects:**
 - i. **Supersize Existing Efforts**
 - ii. **Newport News/York County**
-

The “Drafting Volunteers” decided that these concepts and approaches should not be ranked but that the general sense was that “Aquifer Recharge” with wastewater is the best solution to pursue.

5. Alternative Management Structures:

Andrea Wortzel reminded the group that this is a sub workgroup of the joint workgroups of both the Alternative Sources of Supply and the Alternative Management Structures Workgroups but that the main focus of the discussions has been on the “alternative sources of supply” piece and that the summary information has all focused on that. She noted that the “alternative management structures” discussions from previous meetings were important and should not be lost even though the workgroup had not reached a consensus or made any real decisions. She noted that we need to make sure that those discussions are captured and presented in some manner to the Advisory Committee so that they are aware that we did consider various alternative management structures during the course of the workgroup and joint workgroup meetings and that a number of different options were debated. At a minimum we need to summarize the various ideas that were considered by the workgroup and inform them that we didn’t reach consensus. Mark noted that those discussions would be included as part of the workgroup report to the Advisory Committee. He noted that the decision on alternative management structures was something that was appropriate for discussion and resolution at that level. Unfortunately we do not have a specific product as a report to the main committee. Andrea noted that as detailed as the notes are that there is still a need for a one page summary of what “alternative management structures” were discussed and considered by the workgroup as a work product for presentation to the Advisory Committee. It should also be noted that the workgroup did not reach consensus on which alternative management structure would be the best option to pursue. Andrea also noted that during the course of the discussions that there were a number of potential options that were specifically rejected by the workgroup members, those should also be captured and reported to the Advisory Committee. She specifically noted one of the alternative that was rejected by the workgroup was the option of if you were in a Groundwater Management Area that there could be voluntary agreements formed on how to achieve the reductions required rather than having it be done through permits.

ACTION ITEM: A summary of the alternative management structure options discussed by the Alternative Management Structures Workgroup and by the Joint Alternative Sources of Supply and the Alternative Management Structures Workgroups (including notation of the options that were specifically rejected) will be developed into a short (one page) summary for inclusion in the report to the Advisory Committee. Andrea Wortzel volunteered to work on developing that summary (one page) document for consideration.

6. Public Comment: No public comment was offered.

7. Meeting Adjournment:

The meeting was adjourned at approximately 12:00 P.M.