

**EASTERN VIRGINIA GROUNDWATER MANAGEMENT
ADVISORY COMMITTEE**

MEETING #7 NOTES – FINAL

MONDAY, APRIL 17, 2017

DEQ CENRAL OFFICE – 2ND FLOOR CONFERENCE ROOMS B&C

Meeting Attendees

EASTERN VIRGINIA GROUNDWATER MANAGEMENT ADVISORY COMMITTEE MEMBERS	
John Aulbach – Aqua Virginia	David Paylor – DEQ
James Baker – City of Chesapeake	Chris Pomeroy – Western Tidewater Water Authority
Tom Frederick – VA Water and Wastewater Authorities Association	Travis Quesenberry – King George County
Rhu Harris – Hanover County	Curt Smith – Eastern Shore Groundwater Committee
Bryan Hill – James City County	Mike Toalson – VA Home Builders Association
Marissa Levine – VDH	Ellis Walton – VA Farm Bureau
Rob McClintock – VA Economic Development Partnership (for Sandi McNinch)	Bob Wayland - Citizen

NOTE: Advisory Committee Members NOT in attendance: Nina Butler – WestRock; George Harlow – USGS; Chip Jones – Northern Neck Soil & Water Conservation District; Keith Martin – Chamber of Commerce; Sandi McNinch – VA Economic Development Partnership; John O’Dell – VA Well Drillers Association; Paul Rogers – Production Agriculture – Farmer; Nikki Rovner – The Nature Conservancy; ; Kurt Stephenson – Virginia Tech; Wanda Thornton – Eastern Shore Groundwater Committee (Resigned from Committee); Dennis Treacy – Smithfield Foundation/Smithfield Foods, Inc.; Brett Vassey – Virginia Manufacturers Association

INTERESTED PARTIES ATTENDING MEETING	
Ken Bannister – Draper Aden	Jonathan Harding – Virginia Agribusiness Council
Arielle Brown – Virginia Farm Bureau	David Jurgens – City of Chesapeake
Preston Bryant – McGuire Woods Consulting/James City Service Authority	Whitney Katchmark - HRPDC
Jeff Corbin – Restoration Systems	Jamie Mitchell - HRSD
Chuck Duval – West Rock	Wilmer Stoneman – VA Farm Bureau
Jason Early – CARDNO	Shannon Varner – Mission H2O
Chris Gill – Christian & Barton	Matt Wells - WestRock
Eric Gregory – King George County	

SUPPORT STAFF ATTENDING MEETING	
Brandon Bull - DEQ	Craig Nicol - DEQ
Drew Hammond - DEQ	Bill Norris - DEQ
Scott Kudlas - DEQ	Mark Rubin – VA Center for Consensus Building
Amber Leasure-Earnhardt – VCU/VA Center for Consensus Building	Jutta Schneider - DEQ

MEETING HANDOUTS (Materials were also distributed via email prior to the meeting.):

- Transmittal Letter to Advisory Committee;
- Draft Agenda;
- Draft Meeting Notes – EVGMAC Meeting #6 – Tuesday, March 14, 2017;
- Groundwater Problem Statement – Working Draft (Revised);
- Draft Outline of Report Structure (Revised);
- Draft GWAC Report – Working Draft (Revised);
- Proposed Statutory Revisions regarding Permit Terms;
- Groundwater Issue Summary for April Meeting;
- Public Comments Received after the March EVGMAC Meeting

In addition the following documents were distributed at the meeting:

- Data Needs: Priority and Detailed Budgets; &
- Financing SWIFT Summary

1. Welcome & Introductions (Mark Rubin – Director of the VA Center for Consensus Building at VCU and Meeting Facilitator)

Mark Rubin thanked Scott Kudlas for filling in as the meeting facilitator for the March meeting. He welcomed the members of the Advisory Committee and members of the Interested Public to the meeting and asked for introductions from the Committee Members and the members of the Interested Parties that were in attendance. He noted that there would be a temporary “Open Chair” available for anyone from the audience wishing to make comments relevant to the ongoing discussions.

2. “Closing-the-Loop” from March Meeting (Mark Rubin):

Mark Rubin noted that one of the first things that we would be doing during the next few meetings would be to take a moment to “close-the-loop” from the previous meeting. First of all in the materials that you received prior to the meeting there is a revised outline of the Groundwater Committee Report – if you have any further comments about that proposed outline structure please route those comments to Bill Norris for incorporation into the next revisions. The current outline structure reflects the discussions and recommendations made at the last meeting of the Advisory Committee. He noted that there was also a “revised problem statement” that was also made available – this was also revised based on the comments made at the last meeting. Any comments related to any of these documents should be sent to Bill Norris.

Mark noted that Amber Leasure-Earnhardt will be drafting the report as we progress through these remaining meetings. A “working draft” of that document was also provided to the Advisory Committee prior to today’s meeting. If there are any comments or suggested revisions they need to be routed to Bill Norris for compilation and routing to the appropriate staff for incorporation into the next revision.

Mark noted that an interesting questions was raised this morning regarding the posting of the “draft report” materials – having that draft report out on the Internet (on the DEQ Webpage dedicated to the Eastern Virginia Groundwater Advisory Committee) might potentially give the wrong impression to people that it is a “final – approved document” when it is clearly very much a work in progress. The proposal is for those documents – those “works in progress” to be distributed to the Advisory Group but not made available on the webpage since they are “works in progress” and subject to change as the result of the discussions and recommendations from each meeting. He asked whether there were any objections to this approach. No objections were noted.

ACTION ITEM: Staff will revise the postings on the webpage dedicated to the Eastern Virginia Groundwater Management Advisory Committee:

<http://www.deq.virginia.gov/programs/water/watersupplywaterquantity/easternviriniagroundwatermanagementadvisorycommittee/evgmacmaingroup.aspx>

to reflect todays discussions and will make a note that the Report Problem Statement and the Draft Report documents are “working documents” and will be made available to the Advisory Committee for their consideration and further revision at the next meeting of the Advisory Committee.

During the last meeting the group discussed the revision of the language for the permit terms. He noted that Scott had incorporated the proposed change from 10 to 15 years as discussed by the group:

Code of Virginia

Title 62.1. Waters of the State, Ports and Harbors

Chapter 25. Ground Water Management Act of 1992

§ 62.1-266. Ground water withdrawal permits

A. The Board may issue any ground water withdrawal permit upon terms, conditions and limitations necessary for the protection of the public welfare, safety and health.

B. Applications for ground water withdrawal permits shall be in a form prescribed by the Board and shall contain such information, consistent with this chapter, as the Board deems necessary.

C. All ground water withdrawal permits issued by the Board under this chapter shall have a fixed term not to exceed ~~ten~~ fifteen years. The term of a ground water withdrawal permit issued by the Board shall not be extended by modification beyond the maximum duration, and the permit shall expire at the end of the term unless a complete application for a new permit has been filed in a timely manner as required by the regulations of the Board, and the Board is unable, through no fault of the permittee, to issue a new permit before the expiration date of the previous permit. Any permit to withdraw ground water issued by the Board on or after July 1, 1991, and prior to July 1, 1992, shall expire ten years after the date of its issuance.

Discussions included the following:

- There seemed to be a consensus at the last meeting that the group would like to see a version of the statute drafted with a 15-year permit term instead of a 10-year term which is reflected in the handout.
- One of the items that were discussed that is not reflected in the revised document is that there was a conversation about there being some kind of 5-year review as part of the permit. There are a number of different ways to do that – it doesn't have to be in the statute – it could be in the regulation – it could be in the boiler plate language for the permit. There is already some language that speaks to a 5-year review in terms of the overall amount of water used in reference to the demand that is permitted but there is no language or reference to the status of the aquifer – i.e. have water levels gone up or have they gone back down. Is that desired?
- Wouldn't a 15-year permit automatically include some kind of "reopener" language that would allow DEQ to intervene anytime that "science dictated"? Yes, there is existing "reopener" language that would provide for that. There is an authorization for "reopeners" in the statute.
- There seemed to be a consensus to follow this "simple approach".
- With this proposal would it be the intent of the department that a 15-year permit term would be the typical permit term moving forward? Yes, in all of DEQ's permit programs we issue permits for the maximum term of the permit unless there is some kind of intervening science that requires a different approach, but that is very rare.
- Is the term for Surface Water Permits also 15 years? Yes, this would make both Surface and Groundwater Permits have the same permit term length. Staff noted that there would likely be a review of the fees along with the extended permit terms.
- A question was raised about the current "5-year" review trigger time frame – would that time limit still work with a 15-year term? The original language that still remains in the system is that there would be a mid-point review contemplated for year 5 of a 10-year permit to assess whether or not an applicant was likely to use the full amount that they were permitted – that provision remains in the statute/regulation but it has not ever been implemented in that manner.

3. Review and Approval of Meeting Notes from the March EVGMAC Meeting (Mark Rubin/Bill Norris)

Mark asked the group whether there were any additions or corrections to the meeting notes from the Tuesday, March 14, 2017 meeting of the Advisory Committee. No changes were recommended by members of the Advisory Committee.

Bill Norris informed the members of the need for a revision to the meeting notes related to the receipt of comments received prior to the last meeting that were inadvertently not distributed to the group. He noted that there had been several conversations related to these comments and that they had been distributed "after-the-fact" to the members of the Advisory Committee for their review and information following the meeting. He noted that it is difficult to address something that happens following a meeting in a set of meeting notes but that the following recommended language added as a "note" to

the meeting notes might address the concerns that have been raised.

He recommended the following revision to Item Number 15 on Page 20 of 20 of the Tuesday, March 14, 2017 Meeting Notes:

15. Public Comment: No public comment was offered by those attending the meeting.

[NOTE: There were comments received prior to the meeting from several individuals. However, due to unforeseen circumstances the comments that were received prior to the meeting were not distributed to the Advisory Committee; Support Staff and Interested Parties until after the meeting. The comments from the following individuals were distributed electronically on March 31st: Gayl Fowler; Frank Fletcher; and Stuart Cole – Fernbrook Homeowners Association.]

The members of the Advisory Committee approved the meeting notes as revised.

ACTION ITEM: Staff will revise the meeting notes to reflect the revisions as approved by the Advisory Committee and will post them to Town Hall as “Final”.

4. Continued “Closing the Loop from March Meeting” Discussion (Mark Rubin/Scott Kudlas)

Mark Rubin introduced the remaining item to “close-the-loop” from the March meeting – this was to review the budget and prioritization of data needs. He noted that Scott Kudlas had compiled information related to the DEQ Data Needs discussions from the last meeting and will present that information in “priority order” to the group.

Scott Kudlas provided a handout and introduced the following information to the Advisory Committee:

Data Needs: Priority and Detailed Budgets

Priority Order:

(1) Update Unregulated Use Estimation Methodology (~\$200,000 per project). This would be conducted as a USGS Cooperative Agreement as a joint project with DEQ and VDH. USGS estimates 1 man year of effort to complete this work. One man year equals approximately \$200,000. On a coop project USGS typically is able to contribute 30% of the project cost. The project would blend collection of on-site well records and use of newly registered private wells to develop an updated snapshot of unregulated water withdrawals (including private wells, irrigation, and geothermal) as well as a methodology for updating this estimate over time. Further detail would be negotiated as part of a project proposal. This water withdrawal estimate would be used in the model as part of the 2019-2020 rebuild/update.

(2) Model maintenance (TBD). The main VAHydro-GW model was put into use in 2010 and in accordance with best practice standards it will be due to be rebuilt or be updated as a new version in 2020. This work would include updating the hydrogeologic framework in the model to reflect aquifer picks made on site from geophysical data and cuttings collected during permit review and the information from any new cores. Ideally, core data could be collected for use in this review in the

Middle peninsula and northern Virginia area and in the primary area of critical cells in the Norfolk Arch west of Franklin. This work will be conducted through contractual services with a DEQ modeling contractor and may also include a cooperative agreement with USGS to supply data analysis of recent cores.

Task 1 – Evaluate impact of HUF package

Task 2 – Recalibrate heads to include new water level monitoring through 2015

Task 3 – Interpolate to create “new” hydrogeologic framework surfaces based on new data from permit process

Task 4 – Update MD/NC pumping

Task 5 – Review Boundary conditions

Task 6 – Evaluate performance and determine need for larger rebuild

(3) Suffolk and Franklin Extensometers O & M (\$40,000 per year). The cost of contractual services with the USGS for operation and maintenance of these facilities is \$40,000 per year.

(4) Address Gaps in Hydrologic Framework and Water Level Monitoring Network (\$993,000 per year). Currently this work is bid out on the open market in an ad-hoc manner by both DEQ, when funds allow, and permittees as permit requirements.

Task 1 (\$500,000) - New SOW installation (coastal plain), 1 per year at \$500,000 each equals \$500,000 per year

Personnel (\$234,000) - 1 FTE to service new SOW wells Coastal Plain at \$78,000 per year plus 2 FTEs for new SOW installation, at \$156,000 per year (salary and fringe)

Other costs (\$259,000) - Initial Real time equipment costs for 15 per year at \$10,000 per well equals \$150,000 per year and annual operational costs, (fuel, vehicles, field supplies, etc.) of \$100,000 per year. Also USGS cost to host real time water level data on their website, add 10 per year at \$900.00 each equals \$9,000 per year.

(5) Existing Well Network Repair and Maintenance (\$306,000 per year). DEQ is currently assessing the scope of the need for this activity. Costs indicated represent the costs of contracting these services on the open market. Assessment of network wells to date indicates that it is prudent to assume the following:

Task 1 - SOW well replacement, 1 per year at \$100,000 equals \$100,000 per year

Task 2 - SOW well abandonment, 5 per year at \$10,000 each equals \$50,000 per year

Personnel - 2 FTE's to coordinate well maintenance, replacement, and abandonment at \$156,000 per year

(6) Implement Saltwater Intrusion Network (\$2.5745 mil. per year for 10 years then \$1.35 million per year thereafter). Chloride Network installation estimates are based on current well installations costs using commercial drillers; the number of wells necessary was determined by assessing the USGS chloride monitoring strategy. Three geologists would be needed over ten years to oversee monitoring well installation and maintain the installed equipment. The Chloride network sampling costs are estimates based on current analytical costs. The sampling program will shift from a more comprehensive analyte suite and frequent sampling up front to a less comprehensive suite less frequently with time. The estimate is based on 200 samples a year (higher frequency) at \$1,250 per sample (reduced analyte suite). It is estimated that 75 to 100 samples per year can be collected by a dedicated sampling team consisting of two employees. The proposal includes four employees (two teams) and sufficient equipment to acquire the target number of samples. The sampling costs also

include budget for overnight travel and per diem while conducting the sampling. The chloride monitoring support and assistance is based on the current cost of contracting one joint study per year between the DEQ and the USGS. One full-time support staff is included to manage and analyze the data. Maintenance costs are estimated based on an average repair/replacement cost of \$5,000 for 20 incidents per year.

Item	Number	Unit Cost	Total Cost
Upconing MW	42	\$ 150,000	\$ 6,300,000
Lateral MW	12	\$ 150,000	\$ 1,800,000
Geologist (MW install)	30 m.y.	\$ 125,000	\$ 3,750,000
Instrumentation	54	\$ 5,000	\$ 270,000
Land/Access	1	\$ 125,000	\$ 125,000
TOTAL WELLS			\$ 12,245,000

3 annually for 10 years

Lump sum estimate \$1.2245 mil. annually for 10 years

Item	Number	Unit Cost	Total Cost
Geologist (Sampling)	4	\$ 100,000	\$ 400,000
Sampling Equipment	1	\$ 100,000	\$ 100,000
Sampling Budget	1	\$ 250,000	\$ 250,000
Per Diems	1	\$ 50,000	\$ 50,000
SAMPLING			\$ 800,000

Annually

Annually
Annually (200@\$1250)

Annually

Annual

Item	Number	Unit Cost	Total Cost
Hydrogeology Studies/ Consultation	1	\$ 100,000	\$ 100,000
Data Management/ Statistics Staff	1	\$ 100,000	\$ 100,000
Geologist (Equip Maint.)	1	\$ 125,000	\$ 125,000
Geologist (Manager)	1	\$ 125,000	\$ 125,000
Equipment Maintenance	1	\$ 100,000	\$ 100,000
SUPPORT			\$

Annually

Annually

Annually

Annually

Annually
Annually (20@\$5000)

Annual

(7) Install New Extensometer near West Point (\$1.3 mil. first year then \$30,000 per year thereafter).

The installation of another extensometer in this area is critical to monitoring land subsidence in an area of known land subsidence. The extensometer will be installed through a cooperative agreement with the USGS as was done this year at Nansemond. The costs associated with the project are \$1.3 million with an on-going O & M cost of \$30,000 per year.

Discussions included the following:

- When was the data used for the unregulated use estimation collected? The data is based on a 2006 time frame and published in 2008.
- The group discussed the interconnectivity of the water between and among our neighboring states. It is a really slow moving process and a very long time frame to see any level of impact.
- According to international “model” standards, a model should be reviewed every 5 years and then there should be a reevaluation every 10 years to determine if the model needs to be revised or rebuilt.
- It was noted that it would have been useful to have this level of detail on budget needs prior to the authorization of this Commission. It seems, based on this data that what you currently have is either outdated or doesn’t work. Staff noted that everything is fully functioning but there is just a lot of it. It was also pointed out that the questions being asked of the Agency are at a level of specificity that requires additional data to answer in a meaningful way.
- Would the new staff be dedicated to the Eastern Virginia Groundwater Management Area or statewide? Right now the new staff would be dedicated to the Eastern Virginia Groundwater Management Area.
- It was suggested that the proper context for this data needs and budgetary needs summary is based on the answer you would get if you asked ideally what does DEQ need to have a program as good as we think it ought to be then this is what it would be. The items are presented in a priority order to give an idea to those reviewing it as to what is needed and what items should be considered for funding if additional funds become available. What we want to have communicated as much as anything is what we can do and what we cannot do with the current levels of funding and staffing. The task of this committee is not whether they can get behind this and support it but to increase the awareness of capabilities and needs and to set priorities – if anything the role of this committee is to comment on capabilities and risks that you see – we are not asking you necessarily to support this level of budget increase but to have this group to pass its own judgement on what risks you think you can live with and where you would like to see the state’s capacity increased.
- The group discussed permit fees. The permit fees are used strictly for DEQ. The VPDES permit fees do not go into Scott’s program. The existing permit fees currently only pays for 10% of the actual existing program costs. Permit fees are currently approximately \$6,000. For an existing use fee in the new expanded Groundwater Management Area it is about \$1,200. It was noted

that part of the discussions related to extension of the permit term was a need for a reevaluation of the fee. The fees go to the salaries of those personnel processing the permits not to those items on this list. This is a matter of practice. The permit fee right now pays for the cost of doing the “technical evaluation”. It was noted that permit fees are dedicated funds that are used strictly to support the costs of permitting. The current fee covers the cost of approximately 10% of the cost staff.

Mark asked the group whether this group wants to include this information about DEQ’s Data Needs – Priorities and detailed budget needs in the final report developed as part of this process. It was suggested that it is important to include this type of information. It could be included as information and a statement made that this is what DEQ says it needs these things to implement this program to its full extent possible. The group could include a statement that the group feels that these are things that are reasonable for DEQ to be doing. This could stress the need for better and more data. We need to be able to identify those areas where the “standards for the industry” are not being met and what might be needed to bring things up to those standards. It was suggested that what we are actually talking about is the need for the creation of a data infrastructure to get the data and to meet the appropriate standards. It was noted that we are confident in the current available data but we recognize that there is a need for more data – updated data. We need more certainty in the data. There is a risk in not having new and better data and more certainty. You could say that the credibility of the current data is such that we are being too restrictive or you can say that without data maybe there is more water available or maybe there is less water available – we don’t know without creditable data.

5. BREAK – 10:25 AM – 10:35 AM

6. Issues Summary for April Meeting – Unpermitted Users (Mark Rubin):

Mark Rubin referred the group to the document entitled “Issues Summary for April Meeting” and specifically to the section on “Unpermitted Users”:

Unpermitted Users

The issue that took up the majority of the alternative permitting criteria workgroup’s time was the management of unpermitted users. Unpermitted users are those who do not take more than 300,000 gallons per month from the aquifer and are not, therefore, required to obtain permits. The Virginia Department of Health and most public service utilities use a 325 gallon per day per household number for their projections. DEQ indicates that this may be high as reported use is holding consistently at about 180-200 gallons per day per household. It appears that a significant percentage of this usage is tied to residential irrigation, as much as 20 per cent. The data on how much unpermitted use is through small commercial and industrial use is not definitively known. Based on a DEQ-USGS Study published in 2008 (using 2006 census data) it was estimated that the cumulative amount of unpermitted use was 29 mgd. This is the value used in DEQ’s groundwater model. A preliminary investigation of private well permits issued since that time indicate that this use may be expanding at approximately 1 mgd per year. If that is true then an addition 10 mgd of unpermitted use has occurred. That total 2016 value would then be 39 mgd. It is estimated that unpermitted use volume nearly equals the reduced permitted use volume proposed by DEQ. As permitted volumes are lowered, the percentage of use by

unpermitted users grows and is unmanaged.

Based on this and other information, the workgroup agreed that:

- 1. Unpermitted users have a proportionate responsibility to the aquifer.**
- 2. The issue is the cumulative impact of unpermitted use not the individual impacts on the aquifer.**

In addition, the workgroup discussed but did not agree that:

Water is a state resource subject to management; however, landowners have an expectation that they can drill and use the water that is beneath their property. Effectively, there is a conflict between the law and the widespread expectations of citizens.

There also was considerable discussion on whether to mandate and/or encourage unpermitted users to connect to available public utility supplies. Recommendations were:

1. Mandate that new construction, both residential and commercial, be connected where a public supply is readily available at the site (within 300 feet is one suggestion). One condition for such a mandate is that the connection fee must be reasonable.
2. Create incentives for existing well owners to connect to the public system such as
 - a. Reduce fees
 - b. Low cost financing
 - c. Create incentives to expand public supplies
 - d. Create incentive/disincentives for conservation
 - e. Have consistency of programs across jurisdictions

In addition, several other steps were recommended:

1. Only allow irrigation wells from unconfined aquifers
2. Use reclaimed and storm water for irrigation
3. Designate uses from all aquifers in particular regions based on impact – going forward.

Flip-Chart Notes:

Options:

- 1) New construction – must connect to available public water supply (surface water alternative to groundwater supply – alternative to use of surface water) – capacity to serve needs to be considered;
 - a. Incentivize more public supply tied to surface water
 - b. Readily available at site – within 300 feet – real interest is the costs and who pays
 - c. Reasonable connection fee – reasonable to whom – reasonable costs in comparison to drilling a well (Have we reviewed how this is addressed in other states?) – The question is how you pay for it.
 - d. Geographic limitation ties into costs

- e. “Setting a new floor” – cannot be more lenient – reasonable available surface water alternative
 - f. Closely interface with local and government ordinances – clarify interface
- 2) Create Incentives for existing agricultural and residential well owner to connect. (Enable local and state government and private party incentives.) – will need incentives – the challenge is how you are going to fund incentives
 - a. Possible credit to locality – incentives to lower connection fees
 - b. Look at electric utility model – must serve everyone and everyone pays
 - c. Agricultural – yes?
 - d. Funding – big issue – existing owners?
 - e. Type of incentive is a big issue.
 - 3) Only allow irrigation wells from unconfined aquifers – new residential and commercial irrigation wells only from unconfined aquifers – where available and adequate.
 - a. Food production exempt – but encourage the use of the unconfined aquifer where practical.
 - 4) Encourage the Use reclaimed and stormwater for irrigation – where practicable and within food safety parameters and practicable available
 - a. Need to make it easier to build ponds for agriculture – need to look at state regulatory barriers.
 - 5) Designate uses from all aquifers in particular regions based on impacts going forward – designating uses? – What does “based on impacts” mean? Operationalizing this might be an issue. Does this relate back to the model? Is this a form of “aquifer zoning”? Don’t know how we would do this.
 - 6) Incentives/disincentives for conservation? Does this get a credit? What form of credit? Encourage the use of a tiered rate structures. Don’t know how this applies.
 - 7) Encourage existing well owners and public supply users whose supply is dependent on the aquifer to replace plumbing to modern standards (more efficient fixtures) – funding will be an issue – where is the money for rebates coming from?
 - 8) Consistency of programs across jurisdictions. Need to have consistent standards. Probably not needed as an important item.
 - 9) Health of the Aquifer – Personal Impact – Feedback loop on the Health of the Aquifer - Create educational effort based on “feedback process” example “Eastern Shore”. There is a need for a feedback mechanism on the Status of the Aquifer – An annual state of the Aquifer report – The Eastern Shore Groundwater Committee does an annual state of the aquifer report that they have done over the last several years.

Discussions included the following:

- How do you or where do you factor into the discussions the fact that the legislature has proclaimed twice that the priority of “public water” is “human consumption”? This needs to be taken into consideration and will be further discussed at a future meeting. If it is a priority than how does it relate to the other priorities. What does “human consumption” means? It is defined in the regulations using the federal safe drinking water act definition, but it is not defined in the statute. Some reference needs to be included in the final report as to how “human consumption” is being taken into consideration and how that concept is going to be “operationalized”.
- Need to address the expectations of the land owner.
- Need to meet the responsibility of maintaining the health of the aquifer.
- All existing well users have to connect? What incentives are needed?
- How do you get all existing well users to connect to the Public Water Supply?
- The nature of the incentive matters.
- How do we address irrigation wells? Residential irrigation wells?
- Water Reuse – there are new food safety guidelines that need to be taken into consideration.
- Need to investigate whether there are regulatory barriers regarding the creation of a surface water source - need to identify the “principle environmental concerns”.

7. LUNCH – 11:55 AM – 1:10 PM

8. Discussion of Previously Proposed Legislation (David Paylor):

David Paylor noted that a number of years ago, related to this question of unpermitted users/dischargers, David Bulova at DEQ’s request put in a piece of legislation that was a first attempt about what to do with the unregulated community. For example, if you were putting in a 500 home subdivision and you have a community well you have to go through a permitting exercise but if you put in 500 individual wells you don’t but the impact on the aquifer is the same. The proposal at the time was with the same di minimus of 300,000 gallons per month, if the collective impact was going to greater than 300,000, even if you were putting in wells, you would still need to go through the computer modeling and permitting exercise. He noted that DEQ agreed to pull that proposal back and to keep it on hold for a couple of reasons, the least of which was that it was going to die and to allow that kind of discussion to occur in this type of forum – this kind of stakeholder group. It still makes sense from an aquifer standpoint to at least talk about whether some concept like that is something that this group might want to recommend – with the modification that you would only need to go through the permitting exercise if you were going have those wells extracting from a confined aquifer. The question then for this group is this something that would make sense to pursue further and to consider as a recommendation or not?

Discussion included the following:

- From the Homebuilders Association perspective it was noted that it was their recollection that the proposal was going to be pulled but that they ended up killing that bill – one way or another the bill was pulled/killed and was not acted on. The Homeowners Association noted that they

objected to the proposal at that time and still objects to the concepts. The objection is not just that you have to get a permit but that a permit can be denied. They have experience with community wells and the engineers that provided them their data told them that typically it takes 9 months to a year or longer to get a permit because of the modeling that is required. In some cases the modeling couldn't be done because of budget cuts so you end up there with a project that is ready to go and you can't move on it in the marketplace because the modeling is not available – that may not be the case now – but what the engineers are telling them is that the alternative is a community well system. If you are looking at a community well system, because of the engineering costs, acquiring the permit and the time, the cost of developing storage and capacity necessary to support that type of community well system and the necessary infrastructure and operation and maintenance costs you at looking at a minimum of \$25,000 to \$35,000 per lot.

- It was noted that the concept was not necessarily to end up with a community well system but was more of a way to make a developer take a more focused look of the collective impact that a large number of wells in one subdivision has on the aquifer. It was a way to address what was seen as the larger impact caused by that concentration of wells in one area. If you put in that number of individual wells you have no permitting or modeling requirements even though the impact to the aquifer could be the same as if you had installed a community well. This was a way to attempt to address that collective impact.
- It was noted that if a permit was required then one could also be denied – if there was a way to say that in this type of situation that a permit would not be denied as long as the collective impact was taken into consideration through a modeling effort then it might be feasible. You might through a modeling exercise determine where the least impact on the aquifer would be.
- There needs to be room for flexibility for a concept of this nature to work. The equivalent impact on the aquifer needs to be addressed. The concept is a reasonable one to explore but the question is there a way to make it work?
- The Homebuilders Association noted that they are currently opposed to this proposal.

Mark noted that we would include this concept on the list of things that needs further discussion and consideration at a later time.

9. Alternative Sources of Supply (Mark Rubin/Jason Early):

Mark Rubin referred the group to page 2 – 4 of the “Issues Summary for April Meeting” document. Jason Early reviewed the recommendations related to “Alternative Sources of Supply”.

Alternative Sources of Supply

The alternative sources of supply workgroup along with the alternative management structures workgroup developed a consensus outline of alternative sources of supply which is attached hereto. This takes a number of generic sources of supply and provides a list of benefits, costs, actions needed to bring a project to fruition, criteria to judge feasibility and specific projects that fit under the generic classification. A number of options were considered and those listed below represent those considered

the best options.

It is provided to inform decision making by the GWAC on the paths or paths to creating greater supply in the management area.

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:

A. Aquifer Recharge - 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.

Discussions included the following:

- It was noted that some concerns had been raised by the Health Department regarding the HRSD SWIFT Project – those items will be discussed during the “Alternative Management” discussions at the next meeting.
- The use of “quarries” was discussed. The question was raised regarding whether there was any estimate of the number of “quarries” or locations of the quarries that exist in the state. It was noted that there are a number of quarries on the Eastern Shore that are in use. “Cranston Mill Pond” is listed under “Reservoirs/Quarries” but is not a quarry – it is an existing reservoir.
- Need to look at allowing for private/public partnerships.
- Need to identify options to foster innovations – surface water; filtration technologies; new technologies.

Mark Rubin asked the group whether this information should be included in the report as an overview of the concept of “alternative sources” in the final report. The group concurred that this information was important to include. Do we want to prioritize these items? It was suggested that would be hard to

do without more details but to the extent possible it might be worthwhile. It was suggested that we might include some recognition of “potential effectiveness”.

10. BREAK – 2:00 PM – 2:07 PM

11. Funding Discussions (Mark Rubin/Matt Wells/Jamie Mitchell):

Mark Rubin introduced the concept of funding from the “Issues Summary for April Meeting”. Matt Wells reviewed the information on “funding” with the group.

Funding

The Funding workgroup began by identifying the purposes for creating new funding sources:

1. To provide monies to entities to help pay for recharging the aquifer
2. To ensure the long term viability and health of the potable aquifer
3. To ensure that DEQ has the needed funds to manage the resource
4. To pay for projects to remove users from the groundwater resource to reduce demand on the aquifer
5. To support and expand necessary infrastructure

The workgroup did not come to consensus on whether or not to impose a user fee. A summary of the discussions is included to provide a basis for further discussion by the GWAC.

It is first important to reiterate expectations that are currently held by many citizens. Although it may not be supported by the law, most landowners believe they have the right to water under their property. They believe they can drill a well on their property and use what is available. The cost to access the water is the landowner’s expense and is minimal. There are provisions in the law that appears to state that this is a public resource. There is no cost to the landowner or withdrawer for the use of the water resource itself (arguably a public resource). The current climate in the General Assembly not to impose additional fees for any purpose was also well recognized. At the same time, there is an assumption that there will always be groundwater and it will be available for their use. Current conditions belie that assumption; thus, there is a need to consider funding alternative sources of supply and the tools to manage the resource in a holistic sense.

Considerable discussion was devoted to the hypothetical question, if you were to have a user fee, what would it look like?

1. It should be applicable to both permitted and unpermitted users.
2. It should not be additive: it should not be in addition to significant expenditures made by an industry or private party to reduce their use to meet permit reductions.
3. One possibility is to have a well permit fee and another was to have it look like the Hampton Roads Transportation Tax.
4. While it was recognized that local governments do not like to collect state fees, it was suggested that collection as part of a tax bill would be most efficient.
5. The fee could be tiered or capped in some manner. It should not be on a per gallon basis but rather on whether usage fell into a range of usage.
6. It could be based on a gallon per ton of production to encourage beneficial use.

7. There should be a mechanism to allow farmers to increase usage during a drought without penalty.
8. It was noted that the number of users is high so a relatively small fee could create a significant pool of money. At the same time, it was noted that the cost of new projects is very high.

The workgroup also identified a number of alternative funding sources which should be considered, none of which are consensus recommendations.

1. Trading – look at the existing nutrient exchange program
2. GO Virginia funding for regional projects to encourage economic development
3. General fund dollars
4. State programs such VRA
5. Federal government – particularly in regard to funds to address sea level rise concerns
6. Localities
7. Sales tax
8. Economic development incentives – per project
9. Water quality improvement fund

The concept of creating a regional commission to administer these funds was discussed but not endorsed by the funding workgroup.

JLARC made several recommendations that touched on funding:

1. Recommendation 11 suggested that DEQ be asked to assess and report on additional resources needed to facilitate regional planning and provide differentiated regional assistance.
2. Recommendation 22 asked the Water Commission to evaluate the establishment of a fund to provide incentives for regional collaboration and to finance regional water projects.
3. Option 1 says the General Assembly could establish a user fee for water withdrawn from the aquifer.

Mark Rubin noted that in response to a request made by the Advisory Committee at the last meeting related to the funding for the HRSD SWIFT project has compiled an information sheet which she has distributed to the group and will now provide an overview to the group. Jamie Mitchell presented the following information to the group:

Financing SWIFT:

The HRSD enabling legislation empowers the HRSD Commission to set rates and fees.

Such rates, fees and charges shall be so fixed and revised as to provide funds, with other funds available for such purposes, sufficient at all times (a) to pay the cost of maintaining, repairing and operating such sewage disposal system or systems and such sewer improvements, if any, including reserves for such purpose and for renewals and replacements and necessary extensions and additions to the sewerage system, (b) to pay the principal of and

the interest on such revenue bonds as the same shall become due and to provide reserves therefor, and (c) to provide a margin of safety for making such payments.

In practice, the Commission reviews rates, fees and charges annually with the budget process and revises these rates as required to support the budget and future investment needs. The future investment needs are based on capital improvement projections over the forecast period. The capital needs include investments to meet known regulatory requirements; appropriate reinvestment in existing infrastructure renewal and any anticipated new capacity. This is done with a 20-year financial forecast that is constrained by HRSD financial policies to ensure adequate revenues are available throughout the forecast period to meet all obligations including maintaining debt service coverage ratios and unrestricted reserves within policy limits and as required by current bond holders (in accordance with trust agreements). The 20-year forecast includes the required revenue requirements (rate increases) over the forecast period and is published annually with the HRSD budget.

HRSD is under Federal enforcement to reduce the number of sanitary sewer overflows (SSOs) that occur within the regional sewer system. While HRSD strives to prevent overflows, the sewer system is designed to handle a fixed capacity and at times, under the right storm and tide conditions, the system is overtaxed and overflows occur from manholes and clean-outs. SSOs in Hampton Roads are sporadic and water quality monitoring demonstrates that they do not have a long-term impact on local waterways. Although not a pressing issue from a local water quality or public health perspective, HRSD actively works to eliminate SSOs where feasible. The Federal enforcement action is part of a national enforcement priority that the US Environmental Protection Agency and the Department of Justice established in the late 1990's with a goal of having every sewer system with a treatment capacity in excess of 100 million gallons per day (reduced to 10 million gallons per day in the late 2000s) under an enforcement action for SSOs. The national enforcement priority neglects to account for any impact of the SSOs on local waterways or local public health as a result of this initiative. HRSD is in full compliance with the enforcement action (a Consent Decree) and is preparing a Regional Wet Weather Management Plan (RWWMP) to address SSOs that is currently estimated to cost \$2.2 billion and be completed in 25 years. The RWWMP is due to EPA on October 1, 2017 for their approval.

HRSD has included the \$2.2 billion investment in the RWWMP in our 20-year financial forecast with investments beginning in fiscal year 2018 and continuing throughout the forecast period. The revenue requirements (rate increases) are included to support this level of investment in the forecast.

In 2010, USEPA introduced a new concept referred to as integrated planning. The concept was developed as local governments were struggling to find the funds to meet all the various environmental regulatory requirements imposed upon them by USEPA. The integrated planning concept acknowledges that the financial burden of meeting all requirements simultaneously is too great on most communities and some recognition of local environmental priorities must be factored into regulatory compliance actions. Integrated planning does not relieve a community from meeting their regulatory obligations but provides a process where the local community can prioritize their obligations and invest in the ones with the greatest local environmental benefits first. It is this concept, of investing in projects with the greatest local environmental benefits (integrated planning) that creates the opportunity for HRSD to fund SWIFT within current financial constraints.

HRSD is proposing to fund SWIFT before the RWWMP to gain the greatest environmental benefits (reduction of nutrients to the Chesapeake Bay) before addressing SSOs. HRSD will have some funding

available to address priority SSOs while SWIFT is under construction. The balance of the RWWMP will be constructed upon completion of SWIFT in the 2030 – 2053 timeframe.

HRSD is capable of supporting the SWIFT program through the Integrated Planning framework. Beyond SWIFT implementation, however, there is a recognized need for third party oversight of SWIFT and potentially other managed aquifer recharge projects within the Potomac Aquifer. The Occoquan Watershed Monitoring Laboratory (OWML) provides a successful model that may help guide the development of a Potomac Aquifer Monitoring Program to provide this oversight. HRSD is committed to working with VDH, DEQ, and other key stakeholders to develop a third party oversight program. Though the general structure of the OWML may provide a useful framework, the funding mechanism for the OWML in which the costs are split equally between water supply and sewages uses does not have direct applicability to a Potomac Aquifer program. Innovative funding approaches will be needed to support a third party oversight program.

Mark noted that the big question is “Should there be a User Fee?” But before we address that question, it would be a useful exercise for the group to assume that there will be a “User Fee” and discuss what it might look like and what it would be used for? He referred the group back to Pages 4 – 6 of the “issues summary” document.

Discussions included the following:

- The Big Question is “Should there be a User Fee?”
- It was noted that item number 2 under funding on page 4 is too broad. The suggestion was made to move that statement into an “overview statement” and then have the other items listed as bullets under that topic statement.
- It was noted that this is kind of a “chicken and egg” concept – because in the abstract all of these things are great things to accomplish but everything is relative to how much money you have, if you have any at all. Then you prioritize under that. If you have a small pot of money maybe you don’t include as many items in the “wish” list.
- This is a broad discussion of concepts. Are there more specific things needed? Are there other specifics that need to be included?
- The fund should be a dedicated fund and can’t be used for other purposes other than what it is designated for. This introduces the concept of the “Lock Box” to the fund discussions.
- Now the questions are what would it look like? There was not a consensus in the workgroup other than the concept that we needed more resources.
- Does a user fee concept apply to both permitted and unpermitted users? YES
- Agriculture is going to have to be a “NO” because they have not gotten over the hurdle of their perception that they already have access to the water because it is under their property.
- Every landowner believes that they have the right to the water under their property – that issue has not been satisfactorily addressed. When the water is gone, who stole your water?
- The General Assembly is going to have to clear this up before the agricultural community is going to be willing to pay a fee.

- The Homebuilders are willing to pay their fair share – need to get the thoughts of the homeowners and whether they would be willing to pay?
- The notion that the landowners still feels that they own the water is entrenched.
- Do we have any idea of the amount of water that is withdrawn for agricultural use? The estimates appear to be smaller than anticipated. Staff can probably pull some numbers to help identify the agricultural usage. It is probably around 5%. There is a lot more potential for irrigation of food crops/food production. Potential is high but the actual use is low.
- The concept of including a “groundwater user fee’ as part of your real estate tax assessment was discussed. How would you collect the fee? It was noted that it could be cost prohibitive in some of the smaller communities – even a fee of \$10 per month could be considered cost-prohibitive.
- Would industrial guys pay? Industry appears to be willing to pay a user fee within reason based on their expenditures to meet their permit reductions.
- Could a rate of \$3 or \$5 per year for all tax bills in the regional be a reasonable rate – for everyone in a region on an annual basis on your tax bills? Could all of the residents/tax payers be readily identified?
- Need to try to narrow the options down to a couple of options – something that we could at least not oppose.
- A concern was raised about the concept of having the Local Government to collect a state fee – there is likely to be feedback from the Local Governments.
- The folks around this table need to look at the items that have been discussed and decide whether there are things that they feel are willing to buy into and promote as recommendations to the general assembly. What are the items that we can consider as having the least amount of political headwinds associated with this effort that we could get behind and support as recommendations from this group.

Flip-Chart Notes:

Funding

1) HRSD – Funding for Monitoring and Oversight

User Fees (What should it look like?)

- 1) Applies to both permitted and unpermitted users.**
- 2) Applies to those on the aquifer? Blended? This would be everyone in the Region (both permitted and unpermitted users). It should apply only to those on the aquifer.**
- 3) Monthly better than annual.**
- 4) How is it collected? Local governments? If it included as part of real estate taxes then Local Government would be appropriate.**
- 5) Low amount – broad base of users.**
- 6) A “triggering amount” results in a fee?**

- 7) **Annual well permit fee?**
 - 8) **Fee per tax parcel?**
 - 9) **Fee per household?**
 - 10) **How is the fee remitted to the state? Logistically what is the collection point and mechanism?**
 - 11) **Legitimate need – Could the local PDCs be involved in the collection of the fee?**
 - 12) **Not for capital – should be used for technical costs/needs.**
 - 13) **There could be a new well permit fee. – could be efficient to collect a fee on new wells.**
 - 14) **Existing user permit fees.**
 - 15) **Could be some combination of methods/types of user fees that could be used for specific purposes – to meet some of the technical program needs on the DEQ list of needs - Could be in the amount of \$1 - \$3 million?**
-

12. Next Steps (Mark Rubin):

Mark noted that the next meeting of the Advisory Committee is currently scheduled for May 15, 2017 – 9:30 AM to 4:00 PM here at the DEQ Central Office – 2nd Floor Meeting Rooms B&C.

He noted that Bill Norris would be developing the set of meeting notes from today's meeting and will be getting them back out to the group for their review and consideration. As noted earlier, Amber will be working on edits to the report that will be presented to the Committee as a working draft at the next meeting. We will try to follow the same process as we did today and try to “close-the-loop” from today's discussions as a starting point for our next meeting. The specific topic areas that will be covered for the next meeting include “planning”; “alternative management” and “trading”.

13. Public Comment: No public comment was offered by those attending the meeting.

14. Meeting Adjournment: Mark Rubin thanked everyone for their attendance and participation in today's meeting. The meeting was adjourned at approximately 3:40 P.M.