EASTERN VIRGINIA GROUNDWATER MANAGEMENT ADVISORY COMMITTEE MEETING #5 NOTES – DRAFT

MONDAY, OCTOBER 17, 2016
DEQ PIEDMONT REGIONAL OFFICE – TRAINING ROOM

Meeting Attendees:

EASTERN VIRGINIA GROUNDWATER MANAGEMENT ADVISORY COMMITTEE MEMBERS	
John J. Aulbach – Aqua Virginia, Inc.	Sandi McNinch – VA Economic Development Partnership
James Baker – City of Chesapeake	David Paylor – DEQ
Nina Butler – WestRock	Chris Pomeroy – Western Tidewater Water Authority
Tom Frederick – VA Water and Wastewater Authorities Association	Mike Toalson – VA Home Builders Association
Randy McFarland – USGS (alternate)	Dennis Treacy – Smithfield Foods
Bryan Hill – James City County	Brett Vassey – Virginia Manufacturers Association
Marissa Levine – VDH	Ellis Walton – Farm Bureau
Keith Martin – Chamber of Commerce	Bob Wayland - Citizen

NOTE: Advisory Committee Members NOT in attendance: Rhu Harris – Hanover County; Chip Jones – Northern Neck Soil & Water Conservation District; John O'Dell – VA Well Drillers Association; Travis Quesenberry – King George County; Paul Rogers, Jr. – Farmer – Production Agriculture; Nikki Rovner – The Nature Conservancy; Curtis W. Smith – Accomack-Northampton PDC/ Eastern Shore Groundwater Committee; Kurt Stephenson – Virginia Tech

INTERESTED PARTIES ATTENDING MEETING	
Rob McClintock – VA Economic Development Partnership	Susan Douglas - VDH
Michael Vergakis – JCSA	Rhea Hale – WestRock
Doug Powell – JCSA	Alan Knapp - VDH
Chuck Duvall – WestRock	Katie Frazier – VA Agribusiness Council
Jason Early – CARDNO	Jamie Mitchell - HRSD
Joe McMann – JLARC	Cheryl Stephens
Gerrod Seifert – Booz Allen Hamilton	Christine Wolfe - JLARC
David Jurgens – City of Chesapeake	Justin Brown - JLARC
Whitney Katchmark – HRPDC	Tom Greer - JLARC
Jamie Mitchell – HRSD	Jamie Bitz – JLARC
Christopher Gill – Christian & Barton	Robert Hamm – Hunton & Williams
Shannon Alexander – A-NPDC	Eric Rosenthal
Robb Buchanan – Fairfax Water	Wilmer Stoneman – VA Farm Bureau
Johnathan Harding – VA Agribusiness Council	Brent Fults - CBNLT
Robert Crockett – City of Chesapeake/Advantus Strategies	Matt Wells - WestRock
Jeff Corbin – Restoration Systems, LLC	
SUPPORT STAFF ATTENDING MEETING	
Brandon Bull – DEQ	Craig Nicol - DEQ
Angie Jenkins – DEQ	Mark Rubin – VA Center for Consensus Building
Scott Kudlas – DEQ	Jutta Schneider - DEQ
Debra Harris – DEQ	

The meeting began at 1:01 pm with a break from 2:18 pm until 2:39 pm, and the meeting was adjourned at 3:42 pm.

1. Welcome, Introductions and Overview of the Day

Mark Rubin, Executive Director of the Virginia Center for Consensus Building at VCU, opened the meeting and welcomed everyone. All attendees were asked to introduce themselves. After the introductions, Mr. Rubin provided a brief overview of the agenda and handouts (see Attachment A).

2. Report on Findings of JLARC Study

Jamie Bitz, the Chief Analyst for JLARC, presented the JLARC report resulting from their work related to HJR 623. Mr. Bitz presented an overview of the report, *Effectiveness of Virginia's Water Resource Planning and Management* , with the presentation focusing on the EVGWMA.

For this report, JLARC studied water resource planning and management for: (i) the sustainability of surface and groundwater resources; (ii) the effectiveness of state and local water planning; (iii) the effectiveness of water withdrawal permitting; and, (iv) the need for strategies to preserve or increase water supply. Mr. Bitz noted that his presentation does not cover the entire report, just the topics regarding groundwater sustainability, groundwater permitting and water resource planning. Mr. Bitz's presentation is provided in Attachment B.

After the conclusion of the presentation, the EVGMAC was asked if there were any questions or comments on the report. The following were the questions[1] asked of and responses provided by Mr. Bitz and the other JLARC members present:

Q: The chart depicted in the summary does not adequately represent unregulated withdrawals. Approximately, 50 MGD is the estimate for non-regulated withdrawals by 2026. Why is that?
A: The state only controls permitted withdrawals and not the small unpermitted withdrawals. To include these small unpermitted withdrawals would be very costly because of the modeling and the process, and therefore, making it not feasible to regulate these small users.

Q: Did JLARC have the opportunity to discuss technology limits regarding conversion or alternative sources? It should be noted that when converting from groundwater to surface water is it not always gallon for gallon.
A: JLARC did not get into the specifics of the conversion from groundwater to another source. However, during the research for this report, there were discussions with paper mills regarding the limits of technology. It is hoped that those details would be worked out during any planning/recommendation implementation.

Q: What about infrastructure? The report notes that the state role in financing and construction of water supply projects is minimal, but the sustainability challenges are not significant enough to justify changing that role.
A: At this time, JLARC did not feel the need to ask for a larger state role in actual building of water resource projects. The regional water supply planners will be the ones to handle that primary role for these projects.

Q: How did you all find a definition of human consumption?
A: JLARC used the definition from code and it includes the typical household uses such as bathing, washing, drinking, cooking, etc.

Q: Do other states have cushion values in their permits?
A: No, they do not.

Q: Who will decide the highest economic value as discussed in the report?
A: The regional water supply planners will likely have to have input in that decision.

Q: Did JLARC consider that human consumption is more than just household use? For instance, we need agricultural withdrawals to provide food and the industrial withdrawals allow industries to provide jobs. Were all the recommendations driven by the idea that household/human consumption was the priority?
A: It was a little bit of both. There will be implementation details that will need to be worked out for any of the recommendations. This does highlight the need for greater state input in planning of water supply projects.

Q: The report discussed limits on permits, do other states have limits on the permitting process?
A: No.

Q: What about the criteria for permitting, do any other states have that type of criteria on permitting?

[1] The Virginia Manufacturer's Association representative also provided written questions/comments on the JLARC report (see Attachment C).

A: No, we are not aware of other states that use an economic criterion in making permitting decisions. The idea is to treat the groundwater as a public resource and finding ways to monetize it for other uses.

In addition to the questions noted above, the EVGMAC also provided the following comments on the report:

- The "water drops" chart seems to indicate that all groundwater withdrawals shown are equivalent. But, not all withdrawals are equivalent and that is not reflected adequately in the report.
- Prioritizing human consumption is critical and having the municipality partner with industry is better for the future of the water supply.
- The focus on human consumption needs to include the conflict between other needs and human consumption. The near term challenge is to get to point where the water is enough so that there is not a conflict.
- The report does not consider a possible modification of what is defined as human consumption.
- What about agriculture use of the water supply that provides food for the humans to consume? What about industrial use that provides jobs that humans need to make a living? These issues should be considered as things are more related then the report suggests.

At the conclusion of Mr. Bitz's presentation, Mr. Rubin noted that the JLARC report can be very helpful to this group. The report calls for an expanded state role regarding water issues. Currently, it is the localities that have a great deal of control over water issues. Mr. Rubin asked the EVGMAC for their comments on how they see the balance between state and local control. The following comments were noted:

- Virginia is probably more extreme over state control than other states and the state already controls too much. However, there is an issue with a resource like groundwater which is a finite resource. Perhaps users pay for the amount of water that they use? Local governments need to provide the best rates to our citizens so that controls the amounts that public water supplies charge; however, there is no oversight when one user sells to another. We need to look at what are the problems now and see if state could intervene in the area of distribution of water for instance. Additionally, there are areas in water supply planning that need involvement from the state.
- During the drought of 2001 to 2003, there was legislation that was introduced to limit who could connect to water supply. This was never an issue before because Virginia was always a water rich state; however, that is not the case anymore. We are now at a time where we need to discuss the JLARC recommendations. Water supply needs that next level of planning that involves the state intervening in the planning process.
- The reality is that some jurisdictions can grow or cut supply as they need for their use; that is a predicate of a trading system. Not everyone is going to be able to have the equal opportunity to make the changes needed.
- Industry is very efficient with the amount of water that it uses. So there is a boundary on how much industry can grow with limits placed on the water resource even with good management. That needs to be a consideration as well.
- Planning needs to use science to assist in identifying regional solution with public and private stakeholders to inform one another.
- It was noted that the DEQ was not prepared to move forward with a planning discussion involving a more robust role by the state without clear signals from the policymakers. There is always a concern when it comes to the state's role/involvement in a jurisdiction's planning process.
- Does everyone here have the same end goal and what is the balance we are trying to define? After we define that then we can see who, the locality or the state, should be doing what for water supply issues.
- The water supply planning process was contemplated to account for and consider all water users. One of the things that the state plan does give us is the best inventory of existing water uses that we have ever had.
- It is hard to process this question without considering the utility function. Who is really going to deliver the service of the public utility? Delivering water is a different business operation than permitting.
- JLARC's report noted that regional planning seems to be fundamental recommendation as the report concludes that local planning is not working well enough. However, some on the EVGMAC disagree and noted that there is little evidence that regional planning works any better.
- There needs to be incentives to promote regional planning.
- Regional planning would promote interdependence and allow for the region to handle contingencies; however, the commodity nature of the water is something that it is hoped that the regional planning process can sort through.

After all comments were noted, the group took a brief break.

3. Report on Work of Joint Workgroup: Workgroup #1 – Alternative Sources of Supply and Workgroup #2A – Alternative Management Structures.

Andrea Wortzel and Jamie Mitchell presented the scorecard spreadsheet to the EVGMAC (see Attachment D). During the overview of the chart, it was noted that it is difficult trying to put together a plan where everyone gets the water they need and the resource remains sustainable so it was hoped that the chart could help with prioritizing. The chart includes feedback from the workgroups. The group was asked if they had any comments on the chart. The EVGMAC noted the following comments:

- Should be there be a column for ancillary benefits from a project so that they can be captured?
- Perhaps add these columns: (i) other benefits (ancillary – nutrient reduction for instance); (ii) criteria column/established technology?; and, (iii) is technology currently in use in VA?
- May want to say human health not public health on the chart.
- Would fixing leaking pipes be a potential project for the chart – it is not currently captured.
- It will be challenging to fill out the chart fully for generic concepts but there will be some that can be filled in a generic manner.
- Some categories are more subjective. Perhaps, if there is a difficulty found when trying to fill it out, put in the specific reason for the difficulty.
- Some of the issues need to be footnoted since they are subjective so the reasoning can be included.
- Is there any way to capture the JLARC issue on human consumption for these projects?

Mr. Rubin asked if the chart was useful and if the workgroups should continue with the chart's development. The group concluded that the work on the chart should continue. The next step is to finalize the chart and at conclusion of workgroup meetings there will be a complete chart.

4. Report on Work of Workgroup #3 – Alternative Permitting Criteria.

Scott Kudlas presented a report on Workgroup #3's efforts. The workgroup was provided information for the Virginia Department of Health (VDH). The VDH estimated that there are 300,000 private wells in the groundwater management area based on census and other information. VDH broke down the information that they have actual data for which is a subset of the 300,000. VDH has post-2003 data for about 35,000 wells. Of these 35,000 wells, about 67% are for drinking water supply and about 27% for outdoor irrigation. The other 6% is a combination of other uses such as agriculture, geothermal, etc. On average, there are about 2000 new wells a year being constructed in the management area.

At its next meeting, the workgroup considered if it was important to further regulate these types of wells based on the amount of water they are using. The discussion centered on whether the 300,000 gallons/month limit was low enough for these types of wells. Should it be lower and if so, how low does it need to go? The workgroup also discussed: (i) a way to perhaps charge a fee for the water withdrawal; (ii) providing incentives for individuals to hook up to the public water system ; (iii) further enforce 60% permitting claw back criteria and enhance re-opener clauses; and (iv) how to provide incentives to people to inject more water into the system.

5. Report on Work of Workgroup #4 – Funding Chart.

Mark Rubin provided a report on Workgroup #4. He asked the EVGMAC to look at the chart from the workgroup's last meeting minutes (see minutes excerpt in Attachment E) and to look at the "what" column. It was noted that this chart provides a wish list of concepts that the workgroup thinks would require funding. However, since there is not a source of unlimited funding, how to prioritize this list is the next consideration. Mr. Rubin asked the EVGMAC if they had any ideas on what or how to prioritize this list. Their suggestions were:

- Under DEQ Resources, will need additional resources if you expand the State's role in planning and/or expedited permitting.
- There needs to be an evaluation of land acquisition and an inventory for lands available for water supply projects.
- Dealing with public education (the "ick" factor issues) needs to be considered.
- Any thoughts on stranded assets?
- What about efficiency? Does that address water loss and leakage? Yes, but water efficient fixtures have been put in for the last 10 years.

- As this is a wish list and to do everything would require lots of funding, we would need to know what the priorities are before the costs for DEQ resources can be estimated. It seems infrastructure would be the greatest need of the categories.
- We need to prioritize based on what category gives us the most bang for your buck.
- Based on the JLARC report, it seems that planning should be moved higher on the list.
- The generic list is useful over a list of projects because those generic criteria can be used to make better judgements when the projects do come along.
- What about nonmonetary incentives for doing the right thing?

After the suggestions, Mr. Rubin noted that the workgroups would continue to meet through mid-December. After General Assembly session, the group will begin the very difficult job of making decisions and will be meeting more often in 2017.

6. Public Comment.
Mr. Rubin asked if there was any public comment. There was no comment.

7. General EVGMAC Comment.
Mr. Rubin asked if anyone on the EVGMAC had any further comments. It was suggested that this group have a primer on water quality planning and perhaps see if this fits with the GO Virginia projects/rewards.

ACTION ITEM - DEQ will work on the suggestion for a primer and contacting Go Virginia.

As there was no further comment, the meeting was adjourned.

Attachment A

Eastern Virginia Groundwater Management Advisory Committee Agenda - DRAFT

Monday, October 17, 2016

DEQ Piedmont Regional Office – Training Room

1:00 – 4:00

1. Welcome, Introductions and Overview of the Day

2. Report on Findings of JLARC Study

3. Report on Work of Joint Workgroups – Workgroup #1 – Alternative Sources of Supply and Workgroup #2A – Alternative Management Structures

4. Report on Work of Workgroup #2A – Alternative Management Structures

5. Report on Work of Workgroup #2B – Trading

6. Report on Work of Workgroup #3 – Alternative Permitting Criteria

7. Report on Work of Workgroup #4 – Funding

8. Public Comment

9. Next Steps - Conclusion

Links to Handouts:

Summary: Effectiveness of Virginia's Water Resource Planning and Management
http://jlarc.virginia.gov/pdfs/summary/Rpt486Sum.pdf

Recommendations: Effectiveness of Virginia's Water Resource Planning and Management
http://jlarc.virginia.gov/pdfs/summary/Rpt486Rec.pdf

Attachment B

JLARC slides for
EVGMAC (10-17-16).p

JLARC
JOINT LEGISLATIVE AUDIT AND REVIEW COMMISSION

October 17, 2016

Effectiveness of Virginia's Water Resource Planning and Management

Eastern Virginia Groundwater Management Advisory Committee

Study mandates

- JLARC to study water resource planning and management
  - Sustainability of surface and groundwater
  - Effectiveness of state and local water planning
  - Effectiveness of water withdrawal permitting
  - Need for strategies to preserve or increase water supply

HJR 623 & SJR 272 (2015)
Item 33, Appropriation Act (2016)

Research activities

- Interviews
  - Federal and national experts
  - DEQ staff
  - Public water suppliers and industrial water users
  - Local economic developers
  - Other states
- Survey of public water suppliers, localities, businesses, and local economic developers
- Review of the research literature
- Collaboration with Virginia water experts

Status

- Report presented to JLARC Commission at October 11 meeting
  - Report received by Commission
- Today's presentation covers subset of study findings and recommendations
  - Full report also addresses surface water
- Full report available at: http://jlarc.virginia.gov/

In this presentation

Groundwater sustainability

Groundwater permitting

Water resource planning

Coastal aquifer is depletable source of high-quality, low-cost water for eastern Virginia

- Aquifer requires thousands of years to recharge naturally
- High-quality water
  - Sediment naturally filters the water
- Low-cost water
  - Low pumping costs because water is under pressure
  - Minimal need for piping infrastructure

Even with permit reductions, sustainability is tenuous and can easily be tipped out of balance

- Withdrawals sustainable over next few years
  - Assumes DEQ reduces permits for 14 largest users
- Three variables could contribute to unsustainability in long term
  - Increases in unpermitted withdrawals
  - Increased withdrawals by current permitted users
  - New permit requests

Injection could substantially increase aquifer water supply but has substantial costs

- Up to 120 MGD of water would be injected — roughly equivalent to current permitted use
- Reduce nutrients released into Chesapeake Bay and reverse land subsidence and saltwater intrusion
- $1.2 billion in capital costs and $21–$43 million in annual operating costs

Full implementation of injection project will take decades, even under best case scenario

- Project has not yet received federal regulatory approval
- Full benefits will not be realized for more than 2 decades
  - Not fully operational until 2030 (if timeline is maintained)
  - Additional 10-20 years to realize full impact on water levels
- Large scale of project and ensuring water compatibility could delay project completion

In this presentation

Groundwater sustainability

Groundwater permitting

Water resource planning

Statute gives highest priority to withdrawals for human consumption

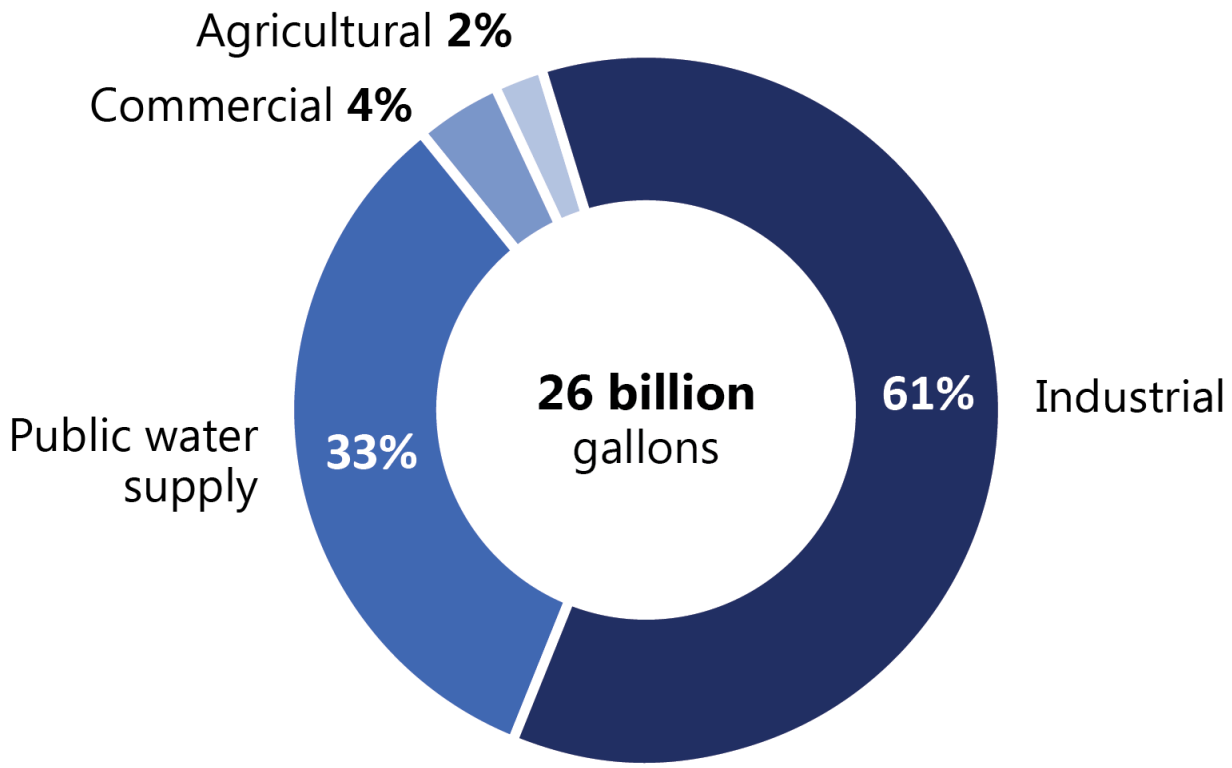
"When proposed uses of groundwater are in conflict or when available supplies of groundwater are insufficient … preference shall be given to uses for human consumption, over all others."

Code of Virginia § 62.1-263

Groundwater permitting has not sufficiently prioritized human consumption

- Permits historically granted on first-come, first-served basis
- DEQ is seeking reductions for all types of permits, including public water suppliers
  - James City Service Authority
  - Western Tidewater Water Authority
  - Portsmouth City
  - Newport News City
  - Franklin City

More than 60% of permitted groundwater withdrawals are by industrial users



Shown in gallons per year. Excludes non-permitted use.

Not sufficiently prioritizing human consumption is crowding out public water supply needs

- Public water suppliers will need to develop more costly water supply alternatives
  - Substantial cost on residential and small business ratepayers
- JCSA has initiated $128 million surface water project
  - DEQ reducing JCSA withdrawals by 30%
  - Project could increase water rates ≈ $23 to $33/month (depending on a variety of factors)

JCSA = James City Service Authority

Recommendations

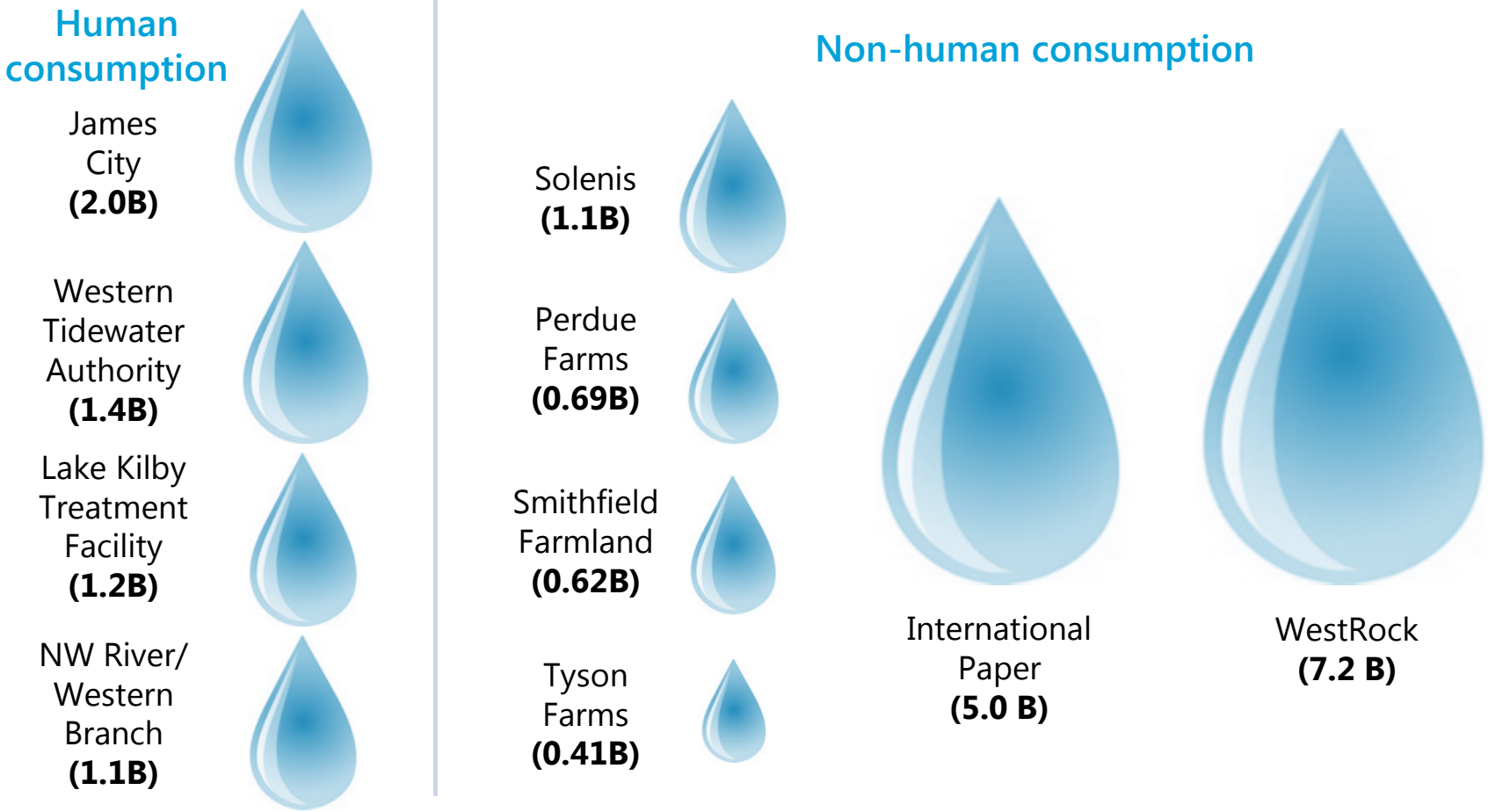
The General Assembly may wish to consider requiring that permits for non-human consumptive uses are

- approved only after meeting the demand for human consumption.
- reduced as necessary to meet human consumptive needs.

Substantial amount of permitted use is concentrated among two large industrial permittees

- Two permittees account for nearly half of permitted usage
  - WestRock mill in West Point = 28% of use
  - International Paper mill in Franklin = 20% of use
- Constrains the state's ability to accommodate
  - Growth among existing public water supplier and other types of users
  - New industrial users

Two paper mills use substantially more water than other major users (gallons per year in 2014, shown to scale)



Substantial amount of permitted, but unused, groundwater limits what is available for others

- Only 30–40% of permitted withdrawal amounts are actually used
- Permit requests often build in substantial room for growth
- “Hoarding” of capacity impedes
  - Fair and efficient allocation of water
  - Economic growth
  - Prioritizing human consumption

Recommendations

The General Assembly may wish to consider establishing limits on the proportion of overall permit capacity that can be awarded to a single user.

DEQ should develop a plan for reducing permitted withdrawals to more closely correspond to actual need.

Lack of economic prioritization mechanism contributes to overuse or misallocation

- Groundwater in coastal aquifer is a low-cost, high-quality, finite public resource
- Users pay a permit fee ($600 to $6,000) but do not pay for water usage
  - At least 12 other states charge for volume of groundwater used
- Allocation of permits does not consider net benefit to the state's economy

Options

General Assembly could

1. Establish authority to assess a user fee for groundwater withdrawn from the coastal aquifer.

2. Direct the establishment of criteria to, among industrial users, award permits to those with greatest net benefit to the state's economy in return for water used.

Groundwater trading could be effective, but has significant challenges

- Trading can promote more efficient and effective use of scarce resource
- Implementation and policy challenges
  - Appropriateness of benefiting financially from sale of scarce public resource
  - Initial groundwater allocations
  - Division of aquifer into administrative zones

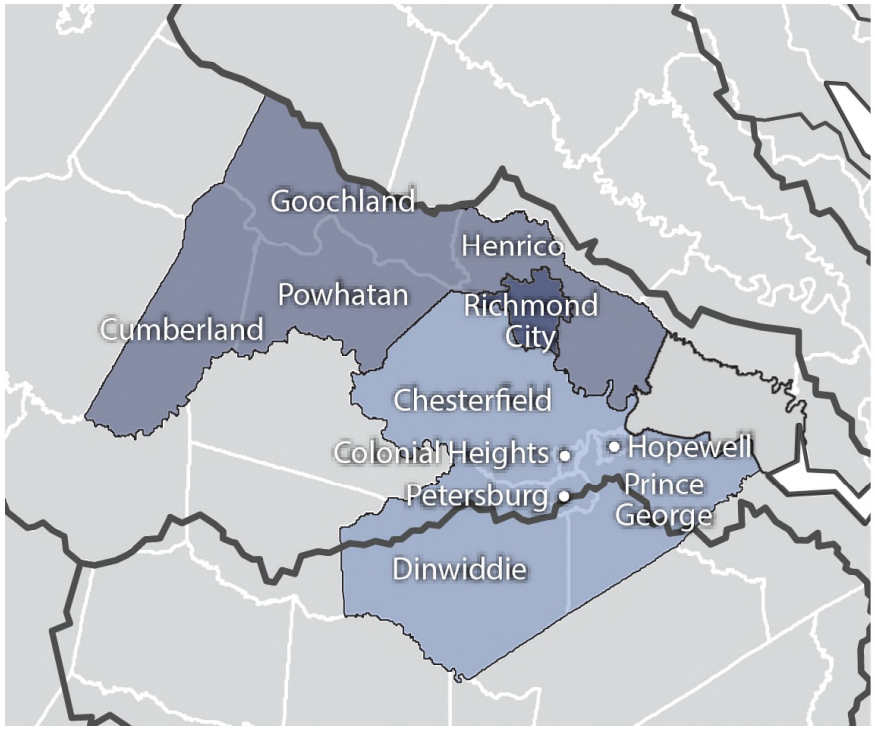
In this presentation

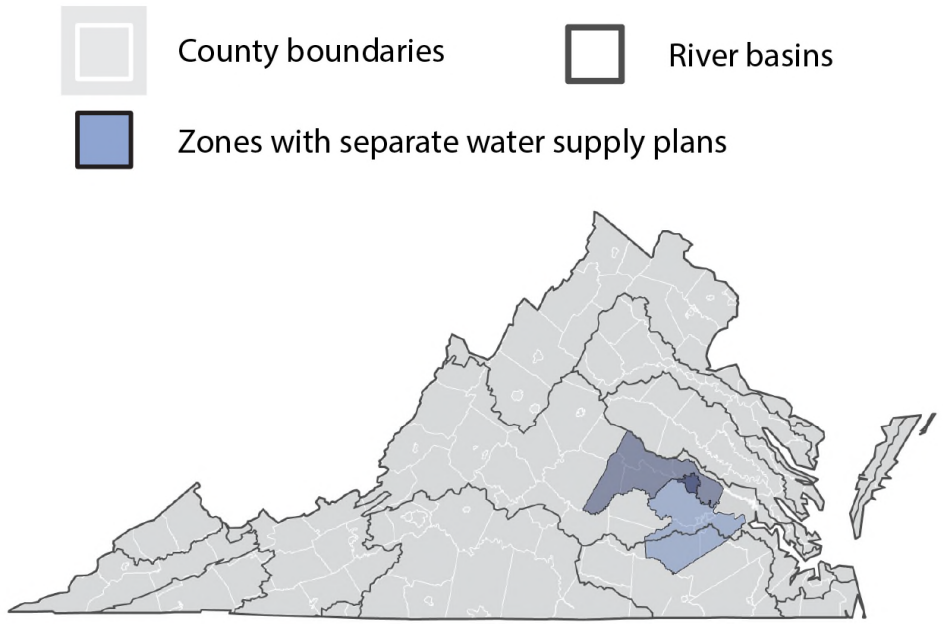
Groundwater sustainability

Groundwater permitting

Water resource planning

Local water supply plans did not sufficiently reflect common water use





Regional water planning used in other states to lower costs and avoid conflicts

- Other states require more regional planning
  - Florida
  - Georgia
  - Texas
- Regional, rather than single locality, planning can help
  - Identify opportunities for lower cost, cross-locality projects
  - Avoid potential water conflicts among localities

Recommendations

The General Assembly may wish to consider directing the State Water Control Board to designate regional planning areas based on factors such as primary water source.

The State Water Control Board should define regional planning group membership.

Various water supply projects can be cost-effective, depending on specific circumstances

- Using existing water supply more efficiently
  - Infrastructure repairs
  - Conservation
- New water supply projects
  - Aquifer storage and recharge
  - Reuse of treated wastewater
  - Reservoirs
  - Stormwater retention
  - Water transfers and purchases

Planning is hindered by lack of clear state role to ensure useful regional planning

- State plan improved understanding of water use, but is too vague to inform decision-making
- Localities have widely varying expertise and supply arrangements
  - Smaller localities may lack expertise for complex water projects
  - Localities often compete over water supply and develop projects independently
- Minimal state role addressing key policy questions

Recommendations

The General Assembly may wish to consider directing

- DEQ to use the state plan to define how the state will facilitate and support regional water planning.
- DEQ to propose how it would provide guidance for projects with cross-jurisdictional impact and technical assistance.
- the State Water Commission to evaluate providing grants to incentivize regional water planning and financing regional projects.

QUESTIONS?

Attachment C

VMA Comments on JLARC Report

VMACommentLetter.pdf

VMA
2108 W. Laburnum Ave., Suite 230, Richmond, VA 23227

October 17, 2016

Mr. William K. Norris
Environmental Specialist II
Regulatory Analyst
Office of Regulatory Affairs
VA Department of Environmental Quality
629 East Main Street
Richmond, Virginia 23219

RE: JLARC Report - Effectiveness of Virginia's Water Resource Planning and Management

Dear Bill:

As the Eastern Virginia Groundwater Management Advisory Committee (EVGMAC) continues its evaluation, the VMA would like to raise a few initial concerns about the recently published JLARC report on the effectiveness of Virginia's water resource planning and management. The report's summary contains some statements that may confuse legislators into an evaluation of false choices. Specifically, the report and its summary do not properly raise the impacts of non-regulated withdrawals. The report and its summary clearly establish human consumption as the state's statutory priority but also goes as far as suggesting that new business growth may be a higher priority than existing business retention. The report is missing any relevant economic and limit of technology analysis on its recommendation to continue to reduce existing permittees' withdrawals by 50%. The report also appears to attempt to prematurely inoculate the state from any responsibility in infrastructure solutions to meet these challenges. The VMA is concerned that these elements of the report may suggest to legislators a simpler set of solutions than exists in reality and undercut the ongoing work of the EVGMAC.

- **Non-regulated withdrawals**. The water withdrawal graphic in the summary document is missing an estimated 50MGD or 18.25B gallons in non-regulated withdrawals by 2026.

- **Use prioritization**. The summary report states, "*Substantial industrial use of low cost, high quality water has the effect of 'crowding out' higher priority use for human consumption…Without substantial changes to the state's groundwater permitting process, this crowding out and higher costs to residential customers and businesses will continue.*" Industrial permittees have substantially reduced their groundwater consumption over the last decade.

Water Withdrawals in Virginia, by Use Category and Source Type (in Millions of Gallons Daily)

Water Use	2010	2011	2012	2013	2014
Agriculture	24	30	31	33	33
Commercial	14	13	12	12	15
Irrigation	35	29	30	19	30

Manufacturing	432	382	386	379	372
Mining	22	19	14	16	14
Other	3	3	3	3	3
Public Water Supply	785	775	752	740	752
TOTALS	1315	1251	1228	1202	1219

Sources: Virginia Performs, Natural Resources; Virginia Dept. of Environmental Quality, Water Use Data System

Further, without an affordable and reliable alternative source of water, it could be argued that new business consumption is actually 'crowding out' existing business – a choice Virginia should not make if it does not want to fall further in its rapidly sliding national economic competitiveness rankings.

- **Economic & Limit of Technology Analysis**. The report glosses over any analysis of the limits of technology for existing permittees, particularly private sector companies, in meeting the 50% reduction goals. Each permittee has unique circumstances that limit their ability to convert to new sources or reduce consumption by 50%. In several cases, the entire local economy is driven by these permittees and the state must weigh the total economic impact of decisions that would reduce production at these facilities or make them less attractive for future capital.

- **Infrastructure**. The summary report states, "*The state role in the financing and construction of water supply projects is also minimal, but Virginia's sustainability challenges are not significant enough to justify materially changing this role.*" This statement seems incongruous with the dire consequences warned about in previous segments of the report.

In closing, the VMA remains committed to the work of the EVGMAC. It is our hope that by raising these concerns with the JLARC report that all parties can continue to deliberate in good faith. It is our view that the EVGMAC process can lead to solutions that protect both groundwater and our economy.

Sincerely,

Brett A. Vassey

President & CEO

www.vamanufacturers.com 804.643.7489 Phone 804.780.3853 Fax

Attachment D

Scoring Chart

Copy of EVGMAC
101016 Scoring Matrix

Each box in these columns should be populated by a collapsible row containing a bulleted list of considerations for each metric

	New Source Project Type	Source of Water	Scale	Current Proposal (see attached)	Recharges Aquifer	Direct Benefit to Permittee	Indirect Benefit to Aquifer or Permittee	Time to Realize Benefits, Yrs	Geographic Extent of Benefit: Local (L), Regional (R)	One Water Mgmt	Currently in Use in Virginia	Grant/Loan Funding Availability	Infrastructure Costs, per gallon ($, $$, $$$)		Permitting Feasibility	Policy / Reg Framework	Management Structure	Public Health Considerations	Public Perception / Outreach	Drought Resilience	Seasonal Availability: Seasonal (S), Intermittant (I), Always (A)
													Capital	O&M							
1	Aquifer Recharge	purified wastewater	Regional	Y								N									
2	Aquifer Recharge	purified wastewater	Local	Y								N									
3	Aquifer Storage and Recovery	drinking water	Local	Y								N									
4	Reservoir	quarries/existing impoundments	Local	Y								N									
5	Surface Water Withdrawal	surface water	Local	Y								N									
6	Aquifer Recharge	impoundments	Local	N								N									
7	Aquifer Recharge	surface water	Local	N								N									
8	Aquifer Storage and Recovery	surface water	Local	N								N									
9	Reservoir	surface water	Local	N								N									
10	Reservoir	surface water	Regional	N								N									
11	Reservoir	stormwater ponds	Local	N								N									
12	Reservoir augmentation	purified wastewater	Local	N								N									
13	Reservoir augmentation	purified wastewater	Regional	N								N									
14	Desalination	saltwater	Local	N								N									
15	Desalination	salt/brackish water	Regional	N								N									
16	Surface Water Withdrawal	surface water	Regional	N								N									
17	Non-Potable Reuse	wastewater	Local	N								N									
18	Non-Potable Reuse	wastewater	Regional	N								N									
19	Non-Potable Reuse	process water (on-site)	Local	N								N									
20	Non-Potable Reuse	stormwater ponds	Local	N								N									
21	Direct Potable Reuse	purified wastewater	Local	N								N									
22	Inter-connections/redistribution	surface water	Regional	N								N									

Definitions

Direct benefit to permittee: meet's a water user's need.
Indirect benefit to aquifer or to permittee: reduces water level decline (by reducing withdawals from aquifer)
Time to realize benefts: timeframe for benefits to be felt in the aquifer from the time a proejct becomes operational
One Water: recognition of other water system benefits, in addition to benefits to the aquifer. Allows for consideration of the impacts on the holistic water system.
Currently in use in Virginia: reflects whether a given project type has been implemented successfully in Virginia
Permitting Feasibility: ease and availability of obtaining necessary permits
Policy/Regulatory Framework: regulatory jurisdiction not defined or not ideal
Management Structure: changes to management structure needed for project or would improve likelihood of success for the project

NOTE: The ratings do not represent an endorsement of the state agencies participating in the Eastern Virginia Groundwater Management Advisory Committee Process, nor do they predetermine permitting decisions.

Attachment E

Funding List

WorkGroup4.pdf

meeting. These workgroups put together a matrix that we hope to be able to have for the upcoming meeting of the Advisory Committee on Monday, October 17th.

He informed the group that the HRSD folks had an event recently where everyone got to drink the water from their HRSD SWIFT project.

He noted that we had hoped to have some speakers for today's meeting from the VRA and the Virginia Revolving Loan Fund but we couldn't get that done for this meeting. Speakers representing both the VRA and the Virginia Revolving Loan Fund will be available for the next meeting of the workgroup (Friday, October 21st).

2. Funding Discussion: What needs to be funded and how do we fund it? (Mark Rubin)

Mark Rubin referred the group to a chart which had been distributed prior to the meeting and was also available as a hand-out (illustrated below).

WHAT	HOW MUCH$	SOURCE	WHO GOVERNS EXPENDITURE
Public Infrastructure			
Private Infrastructure			
Research - Pilot			
Research - Data Collection			
Research - Modeling			
Research - Source Identification			
Research - Economic Benefits			
DEQ Resources			
Land Acquisition			
Switch Consumer to Municipal Systems			
Improved Planning			
Public Education - Problem			
Public Education - Solution			
Conservation and Efficiency Program			
Stranded Assets			

He noted that in our discussions today, the stuff under the "WHAT" column of the chart are all things that we identified during our last meeting (Thursday, August 25th) of "what needs to be funded". We will talk a little bit about "HOW MUCH" which will likely include some "WAGs" – "Wild Ass Guesses" but we may be able to come up with a range of possible funding amount needs. Then we will need to talk about what the "SOURCE" of that money might be – some kind of a fee, maybe. Then we