MISSION H2O Virginia

May 8, 2015

By Electronic Mail:
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Ms. Tammy Stephenson
Virginia Department of Environmental Quality
P. O. Box 1105
Richmond, VA 23218

Re: Virginia State Water Resources Plan

Dear Ms. Stephenson:

Thank you for the opportunity to provide these comments on the Virginia State Water Resources Plan (the "Plan"), published on the Virginia Department of Environmental Quality's ("DEQ's") Website and the Virginia Regulatory Town Hall on April 7, 2015. Mission H_2O is a stakeholder group of municipal water providers, industrial water users, agricultural water users, and water supply professionals. Our members are invested in the sustainable management of Virginia's water resources, and support the need for and development of a meaningful water supply planning process. Many of our members participated both in the development of local and regional water supply plans and on the Virginia Water Supply Advisory Committee.

The Plan marks the first effort by Virginia to collectively assess and plan for water needs. DEQ has designed the Plan to be iterative, updated periodically to incorporate new information and to reflect changes. This is a tremendous effort, and our members appreciate the time and resources DEQ has dedicated to putting this initial draft together. The framework and layout of the Plan is logical and provides good context for the information contained. For example, the overview of Virginia's water management framework explains how the various regulatory programs that impact water management are related. Likewise, the Plan offers insight into the various metrics and models used by DEQ in evaluating water availability. The Plan identifies a number of important issues for stakeholders to consider in future water management decisions.

General Comments

A. Scope of Plan

The water supply planning process was initiated at the conclusion of the 1999 – 2002 drought. The goal was to develop a planning framework to ensure adequate water is available to meet future needs. The statute's specific goals for the water supply plan are to (i) ensure that adequate and safe drinking water is available to all citizens of the Commonwealth, (ii) encourage, promote, and protect all other beneficial uses of the Commonwealth's water

resources, and (iii) encourage, promote, and develop incentives for alternative water sources, including, but not limited to, desalinization. Va. Code § 62.1-44.38.1.

Water supply cannot be evaluated in a vacuum; water quantity and water quality are integrally linked. However, by converting the state water supply plan into a state water resources plan, DEQ has diluted the purpose and power of a water supply plan. The Plan includes connections to other regulatory programs, highlighting regulatory implications from the information gathered, but does so without first addressing the central need for developing a water supply planning framework. Making conclusions that could potentially reduce water availability should not be done without first establishing the means for achieving the water necessary to meet those requirements.

The state water supply plan represents an opportunity to evaluate not only the water needs, but to plan for how to meet those needs. Identification and vetting of alternative water sources, as well as concrete recommendations for how to further identify and implement those solutions, should be the primary goals of the Plan. Instead, the Plan identifies the regulatory implications of predicted water demands without critically evaluating the legitimacy of those demand predictions. Moreover, by focusing on the regulatory implications, the Plan further restricts water availability without identifying concrete alternative sources to offset those restrictions. While water quality and other regulatory programs will impact the assessment of water needs, the Plan focuses too much on these other impacts and too little on water supply planning itself.

Additionally, the Plan is lacking in a cost-benefit analysis. The costs associated with certain water withdrawal restrictions are not evaluated, thus there is no context for comparing those costs against various water supply alternatives. Evaluation of the cost impacts of the issues raised by the Plan must include the potential effects on a community, economic or otherwise, to put restrictions on them.

Likewise, the Plan does not include any analysis of the potential alternative sources identified at the local level. Recognizing that this is the initial Plan and is to be used as a planning tool, it is necessary to highlight potential impediments to alternative sources identified in the local/regional plans. Likewise, where multiple localities are considering the same source or there is a need among localities in proximity to one another, the Plan should highlight opportunities for joint development of alternative sources.

There are two topics that are not addressed in the Plan. One topic is a recommendation in the report of the Water Supply Advisory Committee. A potential alternative source of water which was not recognized in the local/regional plans is stormwater. Virginia is working to better control the quality and quantity of stormwater runoff. One means of controlling it is to reuse it. This is a concept that deserves greater analysis to determine whether it could provide both a quality and quantity benefit.

The second topic is one that has generated interest as a result of discussions about the management of groundwater in the Eastern Virginia Groundwater Management Area. The idea of creating a water trading program, providing incentives for individual water use reductions and an opportunity for new partnerships in achieving water quantity goals, is one that should be considered as part of the water supply planning process.

Finally, the Plan highlights a series of challenges with accompanying recommendations. There is no prioritization of the need to address those challenges. More context and discussion is needed about how to proceed in the planning process, and how to devote resources toward those challenges with the greatest implications. The three most critical issues highlighted in the Plan, from the perspective of Mission H_2O members, are (1) identification of the need for not only sufficient data, but also validation of the data submitted in local and regional plans, to better inform water management decisions; (2) recognition of the need for additional water storage sites and recommendations for how to locate and develop such sites; and (3) support for development of incentives, including funding, for improvements to water infrastructure (both upgrades to existing infrastructure and development of new infrastructure).

B. State Water Demand

Water supply is inherently local in nature. For this reason, lumping all of the local/regional plans together to make state-wide conclusions about water needs is misleading. Compiling the data from the local/regional plans in this manner has a built-in bias to over-estimate demands in total. Because water is withdrawn from different sources, compiling the calculated demands does not necessarily provide an accurate prediction for future demand. This is particularly true if there has not been any comparison of past consumption trends to assess the validity of predictions regarding future consumption trends.

The Plan reaches a conclusion, expressed in the Executive Summary (page xii), that there will be an increase in water demand of 32% by 2040. Including this statement without any context does not provide an accurate picture. This statement does not take into account the reductions in water usage that have been achieved in the past, and that demand on a per capita basis is in fact decreasing. Moreover, an increase in demand in one area may be counterbalanced by a decrease in demand elsewhere. The demand projections should be provided on a regional or watershed basis to better inform water users in that area and to provide a more complete picture of where water will be needed. The Major Basin Summaries found in Appendix B provide a better and more complete picture of future demand.

C. Safe Yield

The term "safe yield" is used throughout the Plan. It is unclear what this term means, and how it is being applied in this document.

Safe yield is not a term that exists in the Virginia Code. The statutory provision relating to the state water supply planning process (Va. Code § 62.1-44.38.1) does not define or reference safe yield. The section of the Code relating to water resource planning (Va. Code § 62.1-44.38) likewise does not reference the term safe yield. Instead, this section of the Code refers to development of minimum instream flows during drought conditions to maintain water quality and avoid permanent damage to aquatic ecosystems. It also requires DEQ, in cooperation with the Virginia Department of Health ("VDH") and local water supply managers, to evaluate the current and future capability of public water systems to provide adequate quantity and quality of water. It is unclear whether DEQ is equating safe yield to one of these required analyses.

A definition of safe yield can be found in the Health Department permitting regulations for waterworks systems. 12 VAC 5-590-830.A.2. Safe yield is calculated by applicants, and is reviewed by both VDH and DEQ. DEQ has also developed guidance on safe yield. *See* Planning Bulletin #335, Safe Yield of Municipal Surface Water Supply Systems in Virginia, dated March 1985. In that bulletin, DEQ cites Va. Code § 62.1-44.38 for its authority, and explains that the purpose of the safe yield calculation is "to provide reliable estimates of the water supply capabilities of existing publicly owned and operated surface water supply systems in Virginia." The Bulletin also cites VDH's regulatory definition of safe yield. The focus of the bulletin is the sustainability of the water works treatment system, not the environmental impacts of the withdrawal. The Planning Bulletin acknowledges that safe yield is different from environmental flowby. Planning Bulletin at p. viii.

A proposal has been made to amend the VDH waterworks regulations to remove the definition and reference to safe yield, and to add a new definition to the Virginia Water Protection regulation for "Public Water Supply Safe Yield," defined as the highest volumetric rate of water that can be withdrawn by a surface water withdrawal during the Drought of Record since 1930, including specific operational conditions established in a Virginia Water Protection permit, when applicable. These are proposals, not yet final.

Given this history, it is unclear what is meant by the term "safe yield" as it is used in the Plan. The term is found throughout the Plan (see, e.g., xii, 3, 61, 69, 88, 98, 99, 133, 135, 194, 206, 264, 267, 300, 312, 318). It is most commonly found in the comments made by VDH in its review of local/regional plans, furthering the confusion about the purpose and responsibility for conducting the safe yield determination.

While the Plan does reference the definition proposed in the amendments to the Virginia Water Protection ("VWP") regulation, the usage in the Plan itself does not appear to be limited to public water supply safe yield, and, in fact appears to relate to something broader than the definition included in the proposed amendments to the VWP regulation. As a result of the fact that the definition is in flux and appears to be used in different ways in different parts of the Plan, there is significant confusion about the meaning, purpose and intent when using the term "safe yield."

Specific Comments – Water Supply Challenges and Recommendations

A. Understanding the Impact of Unpermitted Water Withdrawals (Challenge 1)

At the outset, the challenge appears to address two different topics: unpermitted withdrawals and grandfathered withdrawals. It would be more appropriate to state the challenge that clarifies that grandfathered withdrawals and unpermitted withdrawals are separate issues. Using these terms interchangeably is misleading.

The plan states that unpermitted withdrawals, including grandfathered withdrawals, are of an "unspecified volume regardless of the flow in the stream," that "DEQ has limited operational information on unpermitted withdrawals," and "are not subject to periodic review as is the case for permitted withdrawals." Draft Plan at page 11. This is not accurate.

The Virginia Code exempts withdrawals in place as of July 1, 1989 from the VWP permitting requirement. Va. Code § 62.1-44.15:22. This exemption is limited to the capacity of the intake in place as of that date. In order to obtain the grandfathering protection, withdrawers were required to register their withdrawal, as well as the intake capacity, with DEQ. Additionally, such withdrawers are required to report to DEQ annually the volume of water withdrawn over the course of the previous year. Thus, the volume of grandfathered withdrawals is controlled by the size of the intake in place as of July 1, 1989, and DEQ does in fact have information regarding the volume of grandfathered withdrawals, and the operational information associated with such withdrawals. Moreover, to the extent such withdrawals are from community water systems, such systems are required to have drought response plans in place to govern the withdrawal during periods of low flow. Many industrial withdrawers likewise have contingency plans in place for drought conditions.

Based on the above, the characterization by DEQ of the "challenge" posed by "unpermitted withdrawals" is not accurate. Likewise, it is unclear what additional "control" or operational restrictions DEQ would be seeking as part of the solution to this challenge. To the extent there is evidence that, as a result of grandfathered withdrawals and permitted surface water withdrawals there are predicted water shortages, there are tools available under the State Code for addressing such conditions, such as those identified in Challenge 11. For example, DEQ has the ability to form a surface water management area if low flow conditions develop that could adversely impact instream uses (a tool that has been available since 1996). Va. Code § 62.1-246.

B. Gaps in Data (Challenge 2)

Mission H_2O members agree that accurate data is needed to better manage water resources. Obtaining this data should be a priority for the Commonwealth. Such data is readily available for surface water. However, the costs associated with development of observation

wells and monitoring nests to obtain groundwater data are significant. While groundwater users have been willing to help obtain this data at their own expense, the total costs associated with these data needs should not be borne solely by groundwater users.

C. Quantifying Current/Future Risks to Groundwater Availability Outside Current Groundwater Management Areas (Challenge 3)

As noted above, Mission H_2O members agree that additional data is needed to better evaluate groundwater use and related impacts in areas outside of the groundwater management areas. It is important that all stakeholders be included in such discussions. Industrial and agricultural water users are not identified in the list of stakeholders referenced in the recommendation and should be. Early discussions among all stakeholders in a given area will help ensure that there is buy-in to the analysis and will allow for more comprehensive and sustainable solutions to be identified.

D. Reservoir Site Development (Challenge 4)

The Plan itself should be used to identify areas where water is needed in the future, and how additional water storage sites can help meet that need. The challenges identified relate to the actual siting of reservoirs; but the challenge description should also highlight the challenges Virginia will face if such projects are not identified and advanced. DEQ has a role and an interest in seeing such projects located in the right areas and implemented.

DEQ's recommendation does not go far enough, simply stating that DEQ will assist in efforts to "optimize the use of the resource." DEQ, as the agency charged with developing the plan and reviewing the local/regional plans, is uniquely suited to help identify or, at the very least, vet potential reservoir sites. And DEQ can also play a critical role in advocating for those projects, particularly through the federal regulatory process. As an example, based on Georgia's realization of the need for additional water storage sites, a task force was established to help identify water storage sites, and the state works as a partner in the development of those sites. Recommendations for streamlining the regulatory process at both the state and federal level and development of funding support mechanisms have also been implemented. A copy of a report summarizing Georgia's program is attached. Georgia's program offers examples of the type of concrete recommendations that can be implemented to ensure that additional storage is created.

Finally, the Plan should acknowledge the role of the US Army Corps of Engineers and how they can partner in the reservoir siting and planning process.

E. Threats to Water Quality (Challenge 5)

The threats identified in the challenge description do not appear to correlate to the recommendation. Virginia Code § 62.1-44.38(b) states that DEQ is to establish minimum instream flows to maintain water quality and to avoid *permanent* damage to habitat. The

identified threats to water quality relate to potential releases or contamination of water sources and an analysis of water quality regulatory programs potentially impacted or impacting available water. While it is important to acknowledge this linkage, this is one area where the scope of the Plan creates confusion. A water supply study is needed separate and apart from a broader water resources plan. While the water supply plan may be a component of a broader water resources plan, combining the two detracts from the overall need for water supply planning.

The description of the challenge is a conclusory catalog of potential impacts without explanation of how (or whether) such water quality concerns are linked to water quantity. Moreover, the regional/local water supply plans do not provide any detailed information about these issues, or potential contamination sources, and how they affect water availability. There is no clear summary of the actual impact of these issues, nor any acknowledgment of the regulatory programs already in place to address them, including the VDH-administered source water protection program.

By contrast, the recommendation accompanying this challenge is directly related to water quantity (despite the heading description of threats to water quality), and does not correlate with the description of threats. It is unclear how using August low flow and 7Q10 numbers can be used to address the identified threats. Moreover, it is inappropriate to use these numbers as the criteria for reviewing VWP water withdrawal permits. It is unclear how these numbers will be used to assess potential impacts and in what context. While it may be appropriate to use these criteria in some areas, they should not be applied uniformly. Instead, the appropriate criteria should be chosen based on site-specific factors.

F. Consumptive Use (Challenge 6)

DEQ states that there is a need for additional information regarding the consumptive use of water withdrawn from Virginia water resources. DEQ specifically references the need for calculations of water lost to evaporation, transpiration, etc. Quantifying such information is difficult, particularly in cases where the return flows associated with a given withdrawal are under the control of an entity different from that withdrawing the water. It is unclear the purpose or need for performing such calculations.

To the extent such information is needed, DEQ already possesses data that can be used to estimate consumptive uses. There is a consumptive use factor already included in modeling. Additionally, DEQ receives annual reports on water withdrawn, as well as information about discharges from those same sources. The development of the Plan itself demonstrates the ability to determine where withdrawals are impacting water availability for beneficial uses. If additional information is needed, DEQ should consider sector-wide estimates of water consumption and determine if actual individual operator estimates are needed before pursing individual reporting. Finally, the Plan does not clearly state the need for this information and how such information would alter or benefit the recommendations or assessments already being performed.

G. Increased Conservation (Challenge 7)

Mission H_2O members agree that conservation is an important component of water management. For this reason, our members have implemented extensive conservation measures and achieved significant reductions in water usage. Such conservation measures should be recognized in the plan, and it would provide helpful context to demonstrate the reductions that have already been achieved as a result of the conservation efforts implemented to date. Despite continual increases in population, the water demand for human consumption has remained relatively static. Industries in Virginia have likewise reduced the amount of water used per unit of product. Agriculture continues to refine irrigation practices and has achieved significant reductions in water use as compared to 20 years ago.

As a result of the measures previously put in place, the current demand is more hardened. Additional reductions in water demand through conservation efforts are not so readily achieved, and are more costly. As mentioned in our general comments, a cost benefit analysis would be useful for this challenge and recommendation. This also may be an area where incentives are needed given the fact that achieving additional reductions through conservation will come at a greater cost. Finally, the recommendation may be enhanced by including information about conservation efforts employed in other states to provide ideas for how to enhance already existing water conservation practices.

H. Critical Infrastructure Deficiencies (Challenge 8)

Outdated water infrastructure is an issue that is not unique to Virginia. Mission H_2O members agree that more thought and planning are needed about how to upgrade our municipal water infrastructure, and would like to see more concrete recommendations for addressing this challenge. The Water Quality Improvement Fund, established by the General Assembly in 1997, provides a good example of Virginia's government recognizing the need to invest in infrastructure to achieve an important environmental goal. The same program could be established for water infrastructure.

Another recommendation is for DEQ to use the water resources plan as an opportunity to promote regional cooperation (and possibly consolidation) among municipalities to deal with infrastructure. The costs and benefits of such cooperation would be an important component of this recommendation.

Finally, recommendations regarding infrastructure upgrades must recognize that such investments cannot be made on a one-time basis. Ongoing, sustainable planning and revenue generation for water infrastructure is needed.

I. Sea Level Rise, Changes in Precipitation Patterns and Land Subsidence (Challenge 9)

Sea level rise is a reality for water users in the Tidewater area. Better monitoring and modeling to help predict impacts and allow for adaptive management would be welcome.

Recommendation 9.1.a is confusing; clarification about the purpose, intent and implementation of this recommendation is needed. For example, what is the cumulative impact analysis related to – water withdrawals, sea level rise or changes in precipitation patterns? And is the information expected to be generated intended to show needed changes to withdrawals or potential impacts on infrastructure? More explanation of this recommendation is needed.

J. Source Water Protection (Challenge 10)

As the challenge description points out, VDH already has a source water protection program in place and is actively working with localities to ensure that appropriate measures are in place to protect water supplies. Public water suppliers conduct source water protection surveys annually. Given the numerous other recommendations included, this seems an unnecessary addition, given DEQ's limited resources and the fact that this program is already in place and working effectively.

K. Conflict Resolution (Challenge 11)

This challenge and recommendation are consistent with the recommendations of the Water Supply Advisory Committee. Mission H_2O members support its inclusion.

L. Public Education and Outreach (Challenge 12)

Mission H_2O members agree that public education is a critical component of both achieving water conservation goals and gaining public support for the measures needed to effectively manage Virginia's water resources. Such public education measures should be complementary of the existing communication plans of local governments and water providers that are already in place. The development of the Plan in and of itself is an important tool for education and outreach.

Thank you again for the opportunity to provide these comments. Mission H_2O members believe that this draft Plan is a step in the right direction, and that water supply planning is critical to ensuring that long-term water supply needs in Virginia are met. Our members look forward to continuing to work with DEQ to protect our water resources for all beneficial uses.

Sincerely,

Andrea Wortzel

Andrea W. Wortzel

AWW/hmn

cc: Mission H_2O Members