



Be River Friendly  
It's Your Backyard

The Rappahannock River Basin Commission

February 12, 2016

The Honorable Terry McAuliffe  
Governor of Virginia

The Honorable Chris Jones,  
Chairman, House Appropriations Committee

The Honorable Thomas K. Norment, Jr.  
Co-Chairman, Senate Finance Committee

The Honorable Emmett W. Hanger, Jr.  
Co-Chairman, Senate Finance Committee

c/o Division of Legislative Automated Systems (DLAS)  
910 Capitol Square  
General Assembly Building, Suite 660  
Richmond, Virginia 23219  
Attention: Legislative Documents and Reports Processing

Re: 2015 Accomplishment of the Rappahannock River Basin Commission

Dear Governor McAuliffe:

As Chairman of the Rappahannock River Basin Commission, I am pleased to present this report to you on the accomplishments during 2015. I remain deeply appreciative of the continued membership and the work efforts expended by members of the House of Delegates and Senate as well as my colleague members of the local governing bodies of the basin.

Please do not hesitate to call upon me if I may be of further assistance.

With kindest personal regards and all best wishes, I remain

Sincerely,

M. Keith Hodges  
Chairman, RRBC and  
Member, Virginia House of Delegates

As defined in Section 61.1-659.27 of the Code of Virginia, the Commission's purpose and mission is to provide guidance for the stewardship and enhancement of the water quality and natural resources of the Rappahannock River Basin. The Commission is a forum in which the state, and fifteen local governments to include the city of Fredericksburg and the counties of Rappahannock, Madison, Fauquier, Culpeper, Orange, Stafford, Spotsylvania, King George, Caroline, Essex, Westmoreland, Middlesex, Richmond and Lancaster and citizens of the Commonwealth work to affect the Basin's water quality, quantity and other natural resources. We continue to promote communication, coordination and education, and by seeking appropriate solutions to identified problems, the Commission promotes activities by local, state and federal governments and individuals that foster voluntary resource stewardship for the environmental and economic health of the Basin.

Since our last report, we are very pleased to report that, as in previous years, we have continued to carry out our designated work program with significant success. In 2015, we conducted four meetings in March, June, September and December in Fredericksburg, Richmond County, Stafford County and the city of Richmond (in the Capitol building) respectively. Meeting materials are available on the Commission's website: [www.RappRiverBasin.org](http://www.RappRiverBasin.org)

The Commission and the Technical Committee spent considerable time on the basin-wide summit held in lieu of the September meeting. Eighty-five stakeholders participated in a series of sessions and discussions on the state of water quality efforts in the basin and in the Chesapeake Bay watershed as well as identifying potential for the future. The Executive Summary of the Summit. This report was accepted by the Commission at the December meeting.

### **Executive Summary Rappahannock River Basin Commission's 2015 Summit**

This summary is intended to capture the key discussions on September 23, 2015 and to highlight the major issues identified as worthy of further exploration. The Rappahannock River Basin Commission will be considering and prioritizing these issues for future deliberation and recommendation.

Delegate Keith Hodges, Chair of the Rappahannock River Basin Commission opened the meeting thanking the Rappahannock River Basin Commission's Summit partners the Department of Environmental Quality, the Department of Forestry and the Chesapeake Bay Foundation. He also recognized the Technical Committee of the RRBC for the work done to plan the details of the day. He then introduced Delegate Ed Scott, Chair of the House Committee on Agriculture, Chesapeake and Natural Resources to start the day's discussions.

Delegate Ed Scott, Chair of the Agriculture, Chesapeake and Natural Resources Committee and member of the RRBC offered **A Perspective on Chesapeake Bay Wellness, Where We Are and Where We Should Be Headed**. He began by summarizing the water quality improvement mandates including the Clean Water Act, the

Bay Agreements beginning in 1983 and the Chesapeake Bay Total Maximum Daily Load (TMDL). He discussed the importance of Virginia's Water Quality Improvement Fund, established in 1997, in providing grants for sewage treatment plant upgrades as well as nonpoint sources pollution reduction projects. The Fund has been highly dependent on year end surpluses and although it has provided significant investments over a number of years it fluctuates year to year. This has pushed the General Assembly to supplement WQIF funding sources with bonds and direct general fund appropriations. Almost \$850 million has been committed to treatment plant upgrades. The supplemental funding for treatment plant upgrades has allowed the Assembly to redirect some of the mandatory WQIF funds (surpluses) to nonpoint source projects.

Since 1998 State investments for pollution reduction projects has totaled over \$1.2 Billion. Over \$838 of that amount has been for sewage treatment plant improvements, the remainder has gone to nonpoint source projects. In 2011 the General Assembly increased deed recordation fees to supplement funding for agricultural BMPs. Agricultural BMPs are voluntary but incentivized with cost-share funding. Most BMP funding goes to five priority BMPs: 1) nutrient management, 2) cover crops, 3) continuous no-till, 4) livestock exclusion and 5) riparian buffers. Livestock exclusion has received significant attention since 2012, including 100% cost-share. \$68 million in backlog funding still needs to be addressed in this program.

The most recent assessment of Chesapeake Bay progress was for fiscal year 2014. This report represents the latest science and best estimate of pollution loads. Virginia's modeled nutrient reductions are ahead of schedule but our sediment reductions are behind. We are exceeding our milestones (targets) in many cases but there are some key questions that need to be addressed: - Are we under-calculating the anticipated impact of some practices? - Have many practices become the "industry standard" even for those outside of the Ag BMP program? - Are we unable to gain credit for practices undertaken outside of the program?

Some "takeaways" that Delegate Scotts suggests: 1) significant funding is not guaranteed for future efforts because the program is highly dependent on surplus revenues; 2) point source progress has been critical to meeting milestones but that excess capacity will provide the economic growth of the future; and 3) continued residential activity in many areas is dependent on conventional septic which is an issue that will have to be addressed.

Delegate Scott added that we must continue to analyze the cost-benefit of programs and strategies and cautioned about the ability of the federal government as a reliable funding partner. He concluded by pointing out the value of the forum for policy discussions offered by the RRBC.

In answer to a question about how much private sector funding that gone into pollution reduction projects (versus the \$1.2 billion by the Commonwealth) Delegate Scott said he could not quantify it but its significant between farmers, the development community and local utility customers.

Ms. Peggy Sanner, Chesapeake Bay Foundation Virginia Assistant Director and Senior Attorney reviewed the **Current Gaps in Meeting Chesapeake Bay Obligations**. She reviewed the solid progress made to date but highlighted the work needed to meet the 2025 goals and the 60% interim deadline of 2017. She reiterated the statements of Delegate Scott about greater progress having been made on nutrient reductions than on sediment pollution. Our challenges going forward include Stormwater generally with the specific need to accelerate Ag BMP practices such as stream exclusion. Another challenge is the pollution loads from Pennsylvania; progress made there will benefit Virginia. In response to questions, the importance of nutrient management plans for farmers and MS4 permit holders was stressed. In response to a question on how helpful nutrient trading can be, it was pointed out the strong effort made by Virginia to develop the program, has proved successful, the program is expanding, and is one of the many tools necessary for cost effective solutions.

Ms. Laura Cattell Noll of the University of Virginia Department of Environmental Science presented on **The Nitrogen Cascade and UVA's Nitrogen Footprint Reduction Goals**. She began by explaining the global increase in Reactive Nitrogen in our environment over the past 150 years. The increase is primarily the result of human activities associated with energy and food production. Nitrogen is a “leaky” element that easily escapes to the environment. The impacts of increasing nitrogen in the environment include smog, acidification, damage to forests, eutrophication, warming and growth of the ozone hole. She explained the Nitrogen Dilemma: nitrogen is necessary for life and synthetic nitrogen fertilizer provides for unlimited food supply but excess reactive nitrogen negatively affects environmental and human health (too much of a good thing). Our challenge is to optimize the use of nitrogen while minimizing the negative impacts. She said that we can address this dilemma through technology, good policy and individual/institutional action. UVA has embarked on a project to reduce its nitrogen impact as an institution. They have identified their nitrogen footprint, the amount of reactive N released to the environment by its activities. UVA is one of the first institutions to quantify their nitrogen footprint (492 Metric Tons in 2010) consequently comparisons to others is limited. To understand the relative magnitude of impact other data points are needed. The University has articulated reduction goals (25% reduction by 2025) and strategies. They have strategies to reduce energy consumption, transportation impacts, stormwater runoff, purchase offsets, improve wastewater treatment, increase the use of sustainable food practices, expand composting and food recycling, reduce food waste and buy more local foods. In response to a question, Ms. Noll said the University is developing plans to plant more trees on campus a part of their strategies.

The State Forester, Ms. Bettina Ring, began the session on **Healthy Watersheds Forest/TMDL Project, Preliminary Findings and Next Steps** by reviewing the purpose of the project. She said Phase 1 of the project addressed the hypothesis that retaining more forestland will reduce nitrogen, phosphorus, and sediment loads, thereby reducing the slope of the current TMDL 2025 load increase projections for localities within the Chesapeake Bay Watershed. Forests have a significant roll in clean water therefore identifying strategies to protect high value forests will promote clean water. Gregory Evans of the Department of Forestry thanked the partners in the project and said

that the team has been successful in proving the concept that local policies which result in protection of high-value forests have a positive impact on water quality. He referred participants to the draft report that can be downloaded at [www.RappRiverBasin.org](http://www.RappRiverBasin.org).

Phase I was designed to test and prove the concept. It is now largely completed and the working hypothesis has been validated. Phase I's findings are summarized in this report. Phase II will focus on the engagement with localities required to identify potential changes in the land-use decision process required to achieve increased forest retention throughout the Bay Watershed. He added that the study findings will be shared with 1) local government officials in the study area to inform their decision making as it pertains to development patterns and forest retention; 2) state officials for consideration in milestone planning and attainment of Chesapeake Bay Watershed Agreement Outcomes; and 3) Bay Program officials to help inform the suite of growth models and advance efforts to account for and credit forest retention actions. It is the goal of the partners that this "proof of concept" effort can provide encouragement for further study of public policy-sponsored forest retention efforts and lead to adoption of a forest retention BMP recognized by the Chesapeake Bay TMDL Model.

During the panel discussion Joe Grzeika of the King George County Board of Supervisors talked about the value this project can be to local land use decision making. He said he is hopeful that the Phase II dialogue with localities will identify ways to improve comprehensive plans to identify high value forest land and prioritize the the protection of those lands so that private land owners know which land is best for development and which is best for protection. Good data and policies can help land owners/developers to work with the locality to make better land development decisions that are profitable for the land owner and improve water quality. He encouraged all involved to be engaged in Phase II in order to identify the best practices and recommendations.

Senator Emmett Hanger talked about the Chesapeake Bay 2000 Agreement and its 2010 land conservation goals. He said that those goals were somewhat arbitrary with no direct link of the value of those goals to water quality but the idea here is to help establish the clear link between protecting certain forests and improved future water quality. We achieved many of the 2000 Agreement goals but we only intuitively understood it to be good for water quality. We are now talking about moving past that intuitive understanding. He added that the Chesapeake Bay Commission is a partner in this effort so we are talking about these approaches beyond Virginia.

In response to a question about how to identify high-value forests it was pointed out that localities will have to rely on the expertise of the Department of Forestry to provide the technical support. In response to another question it was pointed out that many localities have done work on green infrastructure plans and the importance of information in those plans to this effort. It was also expressed that the development of a model or similar tool for evaluating development plans that include forest protection can potentially empower localities to incentivize such protection.

Mr. Michael Collins, Executive Director of the Center for Natural Capital presented on **Adding Wellness to Diet-based Chesapeake Bay Best Management Practices**. He explained the Center's program called Soil Keepers which is an entrepreneurial solution to problems associated with unhealthy soils. He explained that one project was partially funded by DEQ to work cooperatively with a home owner to convert a traditional subdivision yard to a more Bay-friendly landscape. He said that as we have seen modest interest in these types of conversions they usually focus on changing from a traditional lawn to a low impact development type of landscape, changing of plant material. Soil Keepers goes farther and begins with creating a healthy soil foundation for the bay-friendly landscape. The benefit is that healthy soil supports healthy roots and plants and less demand for fertilizers and thereby having a direct impact on nutrients. The healthy root structure and healthier plants also reduces runoff. It was pointed out that the current BMP requirements make it impractical to implement a yard conversion that receives credit for TMDL progress yet conversions such as the one implemented in this project has a positive return on investment for the land owner and society. It was recommended that it is time to consider 3<sup>rd</sup> generation Chesapeake Bay wellness-based BMPs such as healthy soils.

Mr. Collins introduced the next session, a **Simulation – Is Nutrient Trading Really Workable?** The cast conducted a Two-Act play demonstrating in a humorous way how nutrient trading currently works and how it might work with some programmatic changes. The conclusions of the simulation:

- The program can be confusing and complicated.
- Although term credits have been enabled under Virginia law there is currently no market; is it because there is no demand or is demand suppressed because there is not enough flexibility in the regulations?
- There are opportunities for permanent trades that work well for the traders.
- Nonpoint trading involving trades across MS4 boundaries are more challenging.
- There is concern about the requirement to meet the baseline before trades can occur and this may be an impediment to urban/suburban trades, these trades are generally not economically competitive and currently don't occur; it may become important to revisit the current policy down the road.
- The current debate over requiring trades to occur upstream is an important discussion and, however resolved, a full understanding of the trade offs is also important.
- The role of an aggregator in the trading of term credits is another issue that is unresolved and will need further exploration and debate if that market is to more fully develop.
- The use of an In Lieu Fund should also be more fully explored to consider its viability as an enhanced tool.

After lunch Chairman Hodges introduced Mike Randall of North Carolina's Division of Energy and Land Resources to talk about **North Carolina's Stormwater Programs**. Mr. Randall explained the structure of his division and the Department of Environment and Natural Resources. He explained the post construction requirements administered by localities and compared them to the post construction requirements administered by the

State. He covered many aspects of the North Carolina's stormwater program, including the LID initiative. He also explained their Impaired Waters Initiative and the Sustainable MS4 Program Initiative and its ongoing gap analysis and programmatic review, development and implementation effort. He said that his motto for the stormwater program is why pay to treat the stormwater runoff when you can reduce it. Their philosophy is focus first on the amount of runoff rather than a particular pollutant, if you can reduce the hydrograph then what enters the stream is reduced.

Chairman Hodges then introduced Congressman Rob Wittman of Virginia's 1<sup>st</sup> District. The Chairman reminded everyone that the Congressman had been a member of the RRBC when he was a local official and a member of the House of Delegates, including several years as Chair of the Commission.

Congressman Wittman thanked everyone for their participation and talked about the legislation that he and Senator Warner worked for many years to pass, **The Chesapeake Bay Accountability Act**. He explained that the Act requires the Environmental Protection Agency (EPA) to develop a management plan for the Chesapeake Bay Program and restoration activities related to the bay. EPA would be required to update the management plan every two years. The legislation would require new financial reports on the Chesapeake Bay Program from the Office of Management and Budget and would require EPA to appoint an independent evaluator, who would review and report to the Congress on the plan. The Act requires a cross-cut budgeting of Chesapeake Bay programs so that it is easier to see how much is being spent on Bay clean up across the breadth of programs and agencies. The report will help policymakers assess what is working well and what is not and the associated cost, better enabling us to reprioritize investments to improve cost effectiveness.

Melanie Davenport, Director of the Division of Water Permitting of the Department of Environmental Quality offered a recap of where we stand with **Virginia's Stormwater Management Program**. She began by reviewing some of the recent history of the MS4 program, the Chesapeake Bay TMDL action plans and MS4 inspections. She then explained which localities are now local Virginia Stormwater Management Program (VSMP) authorities and which ones have opted out to allow DEQ to run the local program. She also summarized the VSMP reporting. She then moved to the Construction General Permit. She talked about Stormwater BMPs, how the clearinghouse works and the non-proprietary and proprietary BMPs that are approved for use. She then moved on to the Industrial Stormwater General Permit and the basic requirements.

She concluded the presentation with a review of the current effort to develop consensus on revisions to the Stormwater, Erosion and Sediment Control and Chesapeake Bay Preservation statutes. A Stakeholder Advisory Group was called together to assist DEQ staff in the effort. The goal is to better align the programs and streamline the laws.

The ensuing discussion highlighted the desire to simplify current law and to resolve some of the conflicts between the statutes. The difference between small and large localities

and those inside and outside the Bay Act area was stressed. It was also highlighted that complicated programs can be frustrating for the general public and it is even more challenging for a small locality with very limited staff resources.

Chairman Hodges thanked Ms. Davenport and everyone for participating in the day. He said we will be summarizing today's discussions for sharing at the December Commission meeting. He stressed the importance of participating in Phase II of the Healthy Watersheds Forests project that will begin next year. You will likely be invited to one of more meetings in your area.

#### CONCLUSIONS, CONSIDERATIONS AND RECOMMENDATIONS:

- Are investments and progress being properly documented?
  - Are we under-calculating the anticipated impact of some practices?
  - Are we unable to gain credit for (voluntary) practices undertaken outside of formal programs?
- Funding/resources concerns:
  - WQIF funding is highly dependent on surplus revenues and fluctuates year to year.
- Program challenges that will need to be addressed:
  - Point source progress is commendable and the excess capacity will allow for economic growth but then what?
  - Individual on-site systems will need greater focus in the future.
  - Stormwater generally and Ag BMP practices specifically will need to accelerate to continue meeting milestones.
  - Appropriate local land use tools will need to be identified to protect high-value forests
  - VDOF will need to help localities identify high-value forestland.
  - The nutrient trading program can benefit from continuous evaluation and enhancements -- learning from experience.
  - Are there other opportunities to test different trading constructs as part of program evaluation and refinement?
  - Is policy refinement needed to protect against conversion of "too much" prime farmland?
  - Is it time to consider 3<sup>rd</sup> generation Chesapeake Bay wellness-based BMPs such as healthy soils (biology) and how should this be done?
  - Should there be an enhanced focus on the overall reduction of the volume stormwater run-off?
  - Revisions to the Stormwater Management, Erosion and Sediment Control and Chesapeake Bay Preservation statutes should look to better align the programs, simplify and streamline them and allow flexibility that recognizes the different needs and capabilities between large and small localities.
- Opportunities that can be explored:



- Optimizing the use of nitrogen while minimizing its negative impacts through technology, good policy and individual/institutional actions will provide water quality and broader environmental benefits.
- UVA has set an institutional example for nitrogen reduction by establishing strategies to reduce: energy consumption, transportation impacts and stormwater runoff, to purchase nitrogen offsets, to improve wastewater treatment, to increase the use of sustainable food practices, to expand composting and food recycling, to reduce food waste and to buy more local foods. Should the Commonwealth's environmental policy be more reflective of the broader impacts of Reactive Nitrogen?
- Good data of high-value forests and good policies may help land owners/developers work with localities to make better land use decisions that are profitable for the land owner and improve water quality.
- As implementation of the Chesapeake Bay Accountability Act takes effect we may have better data on assessing program effectiveness and the opportunity to fine tune investments.

The Commission's next task is to further consider the issues identified during the Summit and determine which should be prioritized for additional deliberation by the Commission, which warrant greater exploration by the Technical Committee and which should be referred to others who may be better suited to take the next step.