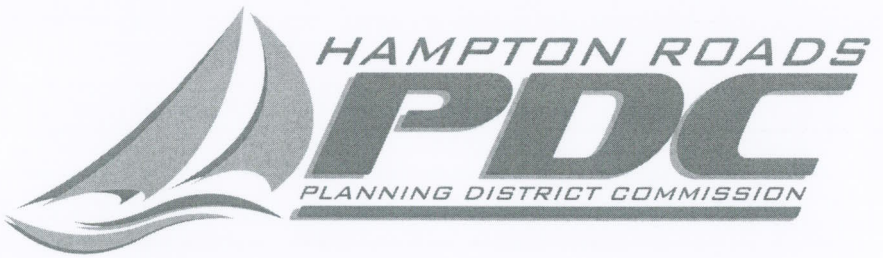
Agenda Note #14: Chesapeake Bay Total Maximum Daily Load (TMDL) - Supplemental Material

Hampton Roads Planning District Commission

September 15, 2011



HRPDC Executive Committee Meeting

AGENDA NOTE – HRPDC EXECUTIVE COMMITTEE MEETING

ITEM #14: CHESAPEAKE BAY TOTAL MAXIMUM DAILY LOAD (TMDL) – SUPPLEMENTAL MATERIAL

Attached for your information is (1) copy of the response from the Virginia Department of Conservation and Recreation to the HRPDC letter of August 15, 2011 outlining key issues and requesting answers to a number of outstanding questions concerning modeling data and information. This material was inadvertently omitted from the Agenda Packet.

The responses were discussed with the Chesapeake Bay TMDL Steering Committee at its meeting on September 1, 2011. Ms. Katchmark will address these comments during her presentation.

Attachment: HRPDC letter to DCR, incorporating DCR Responses

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August 15, 2011

Ms. Joan Salvati, Division Director
Department of Conservation and Recreation
Division of Stormwater Management
Pocahontas Building
900 E. Main Street, 8th Floor
Richmond, VA 23219

Dear Ms. Salvati:

The HRPDC is aware that the State has concerns with the data from the 5.3.2 model, and that this has caused a delay in the development of the official 'tool' that local governments will be able to use to submit Phase II scenarios to Virginia. However, the Hampton Roads local governments and members of the Regional Phase II WIP Steering Committee have a multitude of issues and questions that need to be addressed in order for local governments to continue developing their Phase II WIP strategies. The answers to most of the questions are not dependent on the model output. Localities are having trouble assessing and correcting the baseline data and estimating the nutrient reductions of proposed actions because the State has not provided information that is critical to make those calculations. Localities are also concerned about how the locality target loads were developed and whether or not they are equitable.

We request a response to the questions and issues, outlined below, prior to our next Steering Committee meeting on September 1, 2011. We also request that you attend the meeting in order to provide the Steering Committee with an update on Virginia's progress towards Phase II WIP development and to address any concerns of the Committee members.

Critical Information for Developing Phase II Strategies

1) What are the loading rates for the different land cover classes? Do these rates vary by physiographic region (coastal plain versus piedmont)? These loading rates are important for localities to have, so they can calculate a reduction from the baseline load for the area treated by a particular BMP.

The loading rates (pounds/acre) can be calculated by dividing the loads (pounds) by the land use (acres). These figures vary by land-river segment, the finest segmentation in the model, so there will be variability based on physiographic region, segmentshed and county.

2) Localities need urban loads broken down into pervious versus impervious, so that they can better estimate load reductions from BMPs applied to specific land cover classes.

In the revised data set for Phase 5.3.2. the urban loads and BMPs will allow differentiation between regulated and unregulated, pervious and impervious data.

3) Is the State working with EPA to reconcile the differences between Virginia's BMP efficiencies and the Bay Model efficiencies? When will this issue be resolved?

The State is working through the Bay Program's Urban Workgroup and Water Quality Goal Implementation Team to resolve the differences. The timeline for completing this important task is not yet clear.

Concerns about Target Loads

1) Localities are concerned that the use of '2009 Progress' model run as the baseline for determining urban stormwater load reductions for all localities creates inequity for localities within the Chesapeake Bay Program Act areas that have been implementing stormwater requirements since 2000. Additionally, the information contained in the '2009 progress' scenario is incomplete. HRPDC suggests that DCR use the '2010 no action' model run to determine the necessary percent load reductions for urban stormwater.

EPA has dictated using the 2009 Progress model run as the baseline when accounting for new reductions toward meeting the TMDL. We recognize the BMP data in this scenario is imperfect and have asked localities to provide an improved accounting of the BMPs currently on the ground as part of the Phase II Process. The BMP implementation targets used in developing the Phase I WIP and the TMDL were based on consistent statewide treatment of the various landuses with BMPs. There was no distinction made for Bay Act areas in that process. Bay Act localities should actually be advantaged in this process because they have a much longer record of BMP implementation that can be accounted for through the Phase II process, thereby moving them closer to the TMDL implementation levels.

2) How are the nutrient reduction goals of each locality influenced by the model effectiveness factors for each segmentshed?

The local targets and reduction goals have been provided as edge of stream loads, so the delivery factors that the model uses to adjust loads for in-stream processes through delivery to tidal waters do not influence them.

3) If the State developed the Phase I WIP load goals using a standard treatment percentage for each BMP for each locality, why are the nutrient and sediment load reductions for localities so disparate?

The Phase I process applied a percent treatment for a BMP on the applicable landuse. So, variations in landuses between localities will produce a different mix of BMPs. Additionally, because the loading rates vary by land-river segment, the load reduction per unit of BMP will also vary at that scale.

4) How can localities account for the nutrient reductions achieved by the Fertilizer restrictions recently passed by the General Assembly?

The details of how the model will credit the fertilizer restriction have not been finalized. It is anticipated that it will be accounted for on a state wide basis and will produce a reduced loading rate in the urban pervious landuse that would be evident to localities in future progress runs of the model.

a. Will there be an input for this in the tool that DCR is developing?

There will not be an input for this in the initial version of the VAST.

b. How will this relate to the Nutrient management plan requirement for localities?

This is not related to Nutrient Management plan requirements, except that it is possible that a lawn with a nutrient management plan and soil tests that call for application of phosphorus could do so.

i. How can localities account for property owners that do not apply any fertilizer to lawns?

If there is a local program that promotes, tracks and verifies that fertilizer is not being applied to lawns, this should be documented as a Phase II strategy. We could then work with EPA to include a BMP in the model that would give credit similar to the loads from hay without nutrients (unmanaged grass).

5) Virginia's Phase I WIP included a statement that federal properties would be held to a higher implementation level of BMP implementation than non-federal properties. Was this included in the model runs for the Phase I WIP? Will it be included in the model runs for the Phase II WIP?

The Phase I WIP was run on the 5.3.0. model that did not have a breakout of federal lands, so it was not possible to apply the different treatment levels. The Phase II WIP will use the 5.3.2. model which does include the federal landuse breakout, so the higher treatment level could be modeled.

6) What additional programs or implementation levels were required for agriculture? What additional funding has been dedicated to achieving nutrient and sediment reductions from agriculture?

The specifics of the Phase I actions identified for agriculture and information on current programs and funding are in the WIP I document, Section 5. http://www.dcr.virginia.gov/vabaytmdl/documents/vatmdlwip.pdf

Issues on cataloging and documenting nutrient reductions

1) Localities need guidance on how to document pre 2006 BMPs that have not been included in the model, so that they can be included during the recalibration in 2017. Localities also request that the Tool DCR is creating have the ability to estimate the reductions achieved by these 'missing' BMPs, so that localities can account for that nutrient removal during their planning process.

Localities can provide information on pre-2006 BMPs at any time. The information needed are the specifics of the BMP type, the amount of the BMP (linear feet, acres, systems or acres treated as appropriate), the date the BMP was installed and the location of the BMP. The VAST will not work for estimating the effects of these BMPs as their effects are already accounted for in the Phase 5.3.2 model calibration process. A locality could use the VAST to estimate the loads, but the loads would not be representative of what would be produced through a recalibrated model in 2017.

2) Localities have not been receiving credit for some management actions that have Model efficiencies because they have not been reported.
   a. Please list the BMPs that the State is aware of that have not been reported.
   b. What is the State's plan to address this during the Phase II process?

The state reports all BMPs for which we have the necessary information. (What BMP, How Much, Where, and When). Generally, the agricultural BMP data collected through Federal and State cost-share programs is very reliable. New efforts to track voluntarily installed BMPs in agriculture are currently being assessed. The urban and septic BMP data are less reliable. Generally, we have tried to use information reported through existing regulatory programs and permits for these sectors. Unfortunately, this data often lacks one or more of the required elements which results in under reporting. The Phase II process will allow localities to report BMPs on the ground through the VAST. The VAST may also serve as a tool that localities may choose to use to report annual implementation progress in the future, until better tracking systems can be developed.

3) Additional BMPs and efficiencies need to be added to the Model.
   a. What priorities has the State submitted to EPA?
   b. What actions is the State taking to establish interim efficiencies for localities to use during the planning process?

The state is working with EPA to address agricultural nutrient management, the ability to stack other BMPs with continuous no-till, septic denitrification practices with 25% and 75% efficiencies, and a capture/reuse BMP for nurseries. These will be available for Phase II planning using the VAST. Additionally, we are working on the efficiency of stream restoration and the urban BMP efficiency differences discussed earlier. If you have other priorities that you think are critical, please communicate those as part of the Phase II process.

4) Erosion and Sediment Control
   a. How were the acres under e and s control determined?
   b. The BMP loading sheet has a 2025 target for acres under E and S. Does this number refer to the acres that will be under e and s control in the year 2025, or the number of acres that have been controlled during a longer period preceding 2025? If the latter, what is the starting year?
   c. How is a locality supposed to increase areas under erosion and sediment control when that is a factor of the pace of development?

Acres under E&S are reported to the state by DCR regional offices that compiled locality data. The E&S practice is and annual practice, so the 2025 acres treated are for that year only. The E&S BMP is applies to the construction landuse in the model. This landuse is changed based on the models assumptions on growth rates, and may not be representative of current conditions. If the models construction landuse area is significantly different than what is on the ground, a locality may benefit from reporting E&S as a % of the landuse treated. So if the locality's E&S program has a 95% compliance rate, they could apply the BMP to 95% of the available landuse.

5) How can localities estimate the benefit of tree plantings not associated with reforestation or buffer restoration (ie. Street trees or increased canopy on developed lots)?

Urban tree planting is planting trees on urban pervious areas at a rate that would produce a forest-like condition over time. The tree planting BMP includes any tree plantings on any site except those along rivers and streams. Plantings along rivers and streams are considered riparian buffers and are treated differently.

The definition of tree planting does not include reforestation. Reforestation replaces trees removed during timber harvest and does not result in an additional nutrient reduction or an increase in the forest acreage. The intent of urban tree planting is to eventually convert the urban area to forest. If the trees are planted as part of the urban landscape, with no intention to covert the area to forest, then this would not count as urban tree planting.

6) How are septic pumpouts and biosolids applications being tracked?

Septic pumpouts are currently only tracked in Chesapeake Bay Act localities as part of the Bay Act Annual Reports from localities. The Department of Health is working to improve the accounting of septic pumpouts in non-Bay Act localities. Virginia is the only Bay state that currently reports biosolids applications into the Bay Model. Biosolids are applied in the model to the localities where the application is made based on the permits. The model treats biosolids similarly to other organic nutrient sources (manures and poultry litter).

7) The BMP crosswalk spreadsheet indicates that street sweeping can be reported in acres swept or pounds of material collected. Which unit was used for the street sweeping in the load reduction spreadsheets delivered to localities?

The spreadsheet reports street sweeping as the acres of streets swept annually.

8) Is the State or EPA concerned about localities assuming urban nutrient management plans and agricultural practices will be implemented indefinitely even though the agreements are only effective for 1-3 year periods?

The acres under agricultural Nutrient management plans are reported based on the acres with a current nutrient management plan based on the effective dates in the plans. Urban nutrient management is tracked annually.

9) How does the TMDL account for air deposition, and is there an opportunity for local/state air emissions reductions programs to have an impact on nutrient reductions locally?

Yes. Local/State initiatives and programs that exceed the actions required by the national air standards can be reported to the bay program for credit.

10) Are the impacts of extreme storms causing major water quality impacts and should we be considering different BMPs to mitigate these extreme storms?

Yes. Major storm events cause significant water quality impacts. BMPs to address these extreme storms are generally cost prohibitive, but if there are some effective and affordable solutions, they should be considered.

The HRPDC staff, the region's localities, and members of the Chesapeake Bay TMDL Regional Steering Committee have been working diligently to address the state's expectations of the Phase II WIP effort. At the August 4, 2011 meeting of the Regional Steering Committee, the HRPDC staff sensed a growing frustration on the part of the localities and other stakeholders over the lack of important information and guidance from the state that is critical to moving the process forward. We believe that it is essential that we address these gaps at the September meeting.

We appreciate your participation and assistance in this effort. If you have questions or desire to discuss these concerns further, please call Whitney Katchmark or Jennifer Tribo.

Sincerely,

John M. Carlock
Deputy Executive Director

WSK/fh