

## **AGENDA NOTE – HRPDC ANNUAL COMMISSION MEETING**

### **ITEM #16: CHESAPEAKE BAY TOTAL MAXIMUM DAILY LOAD (TMDL)**

#### **SUBJECT:**

Hampton Roads Planning District Commission (HRPDC) requests a response from EPA and Virginia's Secretary of Natural Resources regarding load allocations in the Chesapeake Bay TMDL and Phase I Watershed Implementation Plan (WIP).

#### **BACKGROUND:**

In the March 31, 2011 letter to the EPA (attached), HRPDC requested that individual Waste Load Allocations for the localities with Phase I MS4 permits be removed from the TMDL. HRPDC has not received a response resolving this issue. Virginia's Secretary of Natural Resources has sent correspondence to the EPA (attached) stating that the model "is not appropriate for use in assigning loads in permits, developing local load targets, or measuring reduction progress." This position supports HRPDC's request for the Waste Load Allocations to be removed from the TMDL. The Secretary's proposed "Path Forward" (attached) recommends additional model revisions, a shift in focus from local target loads to maintaining implementation levels, and a deadline of June 1, 2012 for interim Phase II WIPs.

Whitney Katchmark, Principal Water Resources Engineer, will provide a presentation summarizing strategies for localities to consider in the next few months in light of the unresolved issues between Virginia and EPA.

#### **Attachments:**

- A. Draft letter to EPA from HRPDC
- B. March 31, 2011 letter to EPA from HRPDC
- C. September 28, 2011 letter and Path Forward from Virginia Secretary of Natural Resources to EPA

#### **RECOMMENDED ACTION:**

Approve draft letter from the Commission requesting the EPA remove the individual Waste Load Allocations for the Phase I MS4 permits (Hampton, Newport News, Chesapeake, Norfolk, Portsmouth, and Virginia Beach) from the Chesapeake Bay TMDL.

**DRAFT**

October 20, 2011

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Mr. Jeffrey Corbin, Senior Advisor  
Office of the Administrator  
U.S. Environmental Protection Agency  
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1200 Pennsylvania Ave., NW  
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[Corbin.jeffrey@epamail.epa.gov](mailto:Corbin.jeffrey@epamail.epa.gov)

Re: Waste Load Allocations in the Chesapeake Bay TMDL

Dear Mr. Corbin:

Thank you for your July 8, 2011 letter and responses to the Commission's questions. We greatly appreciate the time and effort that you and your EPA colleagues devoted to preparing the responses.

As you know, the Commission is particularly concerned about the individual Waste Load Allocations (WLAs) for the Virginia Phase I MS4s because they are based on inaccurate data and has asked that they be removed from the Chesapeake Bay TMDL. Your responses to Questions 1 and 2 indicated that EPA would work with the state to respond to our request that these be removed from the TMDL. Although you stated during our March 31, 2011 Commission meeting that EPA was close to resolving this issue, we have heard nothing since receiving your letter.

The Commission would appreciate knowing whether EPA has decided to remove the individual WLAs for the Virginia Phase I MS4s from the Bay TMDL, and if not, when you expect this issue to be resolved. Further, if EPA has decided not to remove the individual WLAs, we would appreciate an explanation for that decision. We ask that EPA respond within 30 days of the date of this letter.

I look forward to receiving EPA's response, and please do not hesitate to contact the Commission's Deputy Executive Director, John Carlock at 757.420.8300 or at [jcarlock@hrpdcva.gov](mailto:jcarlock@hrpdcva.gov) if you wish to discuss this matter further.

Sincerely,

Stan D. Clark  
Chairman

Copy: Anthony Moore, Assistant Secretary Chesapeake Bay Restoration  
Office of the Secretary of Natural Resources  
David A. Johnson, Director, Virginia Department of Conservation and Recreation  
Dwight L. Farmer, Executive Director, HR Planning District Commission  
John M. Carlock, Deputy Executive Director, HR Planning District Commission

MEMBER JURISDICTIONS

March 31, 2011

CHESAPEAKE

Mr. Jeffrey Corbin  
Senior Advisor to the Administrator  
U.S. Environmental Protection Agency, Region III  
Ariel Rios Building  
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FRANKLIN

GLOUCESTER

HAMPTON

RE: Chesapeake Bay TMDLs

ISLE OF WIGHT

Dear Mr. Corbin:

JAMES CITY

Thank you for attending the March 31, 2011 special meeting of the Commission's Executive Committee and for presenting EPA's perspective on the Chesapeake Bay Total Maximum Daily Loads (TMDL).

NEWPORT NEWS

NORFOLK

POQUOSON

PORTSMOUTH

SOUTHAMPTON

SUFFOLK

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As you know from recent reports in the media, the Commission has been evaluating the potential impacts of the TMDL on its member localities that operate Municipal Separate Storm Sewer Systems (MS4s) together with legal options for addressing any flaws in the TMDL that could cause adverse socio-economic impacts on the Hampton Roads region without providing any meaningful water quality benefit. Based on that evaluation, we have concluded that there are legitimate reasons to be concerned about the potential impacts of certain aspects of the TMDL. Those concerns, however, largely reflect uncertainty about the outcome of the Phase II Watershed Implementation Plan (WIP) process now underway as well as EPA's intentions with respect to the way in which the Hampton Roads region's MS4 permits must be written to be consistent with the assumptions and requirements of the TMDL. Therefore, the Commission wishes to know EPA's answers to the following questions so that we can make the best informed assessment of the TMDL's likely impact on the region's MS4 localities. The Commission has decided to defer further consideration of its legal options pending receipt of EPA's response.

WILLIAMSBURG

To put the questions in context, the Commission wishes to make clear that it and its member MS4 localities are supportive of the TMDL's goals as reflected in their ongoing commitment of significant resources to implementation of the

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Hampton Roads region's MS4 programs. No other region of Virginia has a greater stake in a clean Bay than Hampton Roads, and as stated in the Commission's comments on the draft TMDL, the region's MS4 localities are prepared to commit more money and resources to their storm water programs where needed to help restore the Chesapeake Bay and protect the James and York rivers. However, the Commission and its member MS4 localities believe that a clean Bay can be attained without wasting scarce resources or exposing the MS4 localities to enforcement actions for failing to achieve unrealistic and unattainable TMDL-derived compliance obligations. Unfortunately, it appears that these may well be the consequences of several flaws in the TMDL as reflected in the following issues of greatest concern to the Commission and the MS4 localities. I want to emphasize that the Commission and the MS4 localities believe the TMDL is flawed in other respects, but they are most concerned with the following issues because they are likely to have the greatest impact on the MS4 localities.

## **I. Issues of Greatest Concern**

### **A. Land Use Data Used to Derive the MS4 WLAs**

The waste load allocations (WLAs) in the TMDL are based on land use data, specifically the amount of impervious area within the locality. An analysis of representative Geographic Information System (GIS) land use data shows that the satellite imagery used by EPA for its land use inputs to the watershed model underestimates the extent of imperviousness in the Hampton Roads region by an average of approximately 48 percent. Locally developed imperviousness data is more accurate than the satellite imagery relied on by EPA, but EPA did not take the time to work with the Hampton Roads' localities to collect this information and use it in the model. EPA has acknowledged that the land use data used to develop the TMDL is inaccurate and has stated that it plans to develop revised load reduction estimates based on revised imperviousness data. However, we understand that EPA intends to continue using satellite imagery rather than local GIS data.

The implications of underestimated imperviousness are significant because it means that the Hampton Roads localities, including those with MS4 permits, will have to reduce their urban runoff loads based on modeling data which assumes that they are less impervious than they actually are. In other words, the urban land area that will have to be treated in order to attain the WLAs would be greater than the land area assumed in the TMDL. This has potentially serious implications for not only the ultimate cost of compliance, but also the ability of the MS4 localities to achieve their WLAs by the TMDL's 2025 deadline.

B. Establishment of Individual WLAs for the Hampton Roads Phase I MS4s

EPA should not have included individual WLAs for Virginia's Phase I MS4 localities (including the six Phase I MS4 localities in Hampton Roads) in the final TMDL. The individual WLAs were not included in the draft TMDL, so there was no notice of or opportunity to comment on the WLAs before they were established in violation of the Administrative Procedures Act. We are also troubled by the fact that Virginia's Phase I MS4s were singled out for individual WLAs as well as EPA's failure to provide any justification for adding the individual WLAs or explanation of how they were derived.

As you know, EPA and the Bay states agreed that not enough information was available during the TMDL development process to generate individual WLAs for MS4s, and therefore, agreed to defer dividing aggregate point source targets to a finer scale until the Phase II WIP process. Accordingly, we suspect that the individual WLAs are based on the same inaccurate land use data that was used to derive the proposed aggregate WLAs in the draft TMDL, but we have no way of knowing whether this is, in fact, the case or whether other errors are built into the WLAs because EPA has not explained how the individual WLAs were derived. In particular, we strongly suspect that the individual WLAs for Total Suspended Solids (TSS) are inaccurate because in addition to the use of inaccurate land use data, the TSS WLAs were derived using a model that EPA has acknowledged could not be calibrated for sediment.

The potential consequences are far reaching because the Phase I MS4 localities would be at significant risk of federal, state, and citizen enforcement for failure to comply with their permits if EPA proceeds with TMDL implementation using individual Phase I MS4 WLAs derived from erroneous land use data.

C. 2025 Deadline

As explained in the Commission's comments on the draft TMDL, we do not believe EPA has the authority to establish a deadline in the TMDL. MS4s are uniquely affected by the 2025 deadline because they are regulated as point sources, but face far greater implementation challenges than any other source sector, point or non-point. The MS4 WLAs will require widespread implementation of storm water retrofits on private property in a heavily urbanized region. The MS4 localities could implement these retrofits cost effectively through their land use approval process as redevelopment occurs, but the 2025 deadline will make it impossible for the MS4s to achieve their WLAs in this fashion because the average rate at which land is redeveloped will

not allow it. Instead, the MS4 localities will be forced to not only install and operate storm water retrofits on private property, but also to acquire retrofit easements by purchase or condemnation. Again, the potential consequences are far reaching. Aside from the cost, easement acquisition takes time, making it highly unlikely that the MS4s could achieve their WLAs by 2025, thereby exposing them to federal, state, and citizen enforcement despite their best efforts to comply.

## II. Questions for EPA.

While the Commission and the MS4 localities believe their concerns are well founded, they wish to hear from EPA. Therefore, it will be greatly appreciated if EPA will answer the following questions.

### A. Hampton Roads MS4 WLAs

1. Why does the final TMDL include individual WLAs for the Phase I MS4s in Virginia, but not the Phase I MS4s in the other Bay states?
2. Why weren't the individual WLAs included in the draft TMDL?
3. How did EPA derive the individual WLAs for the Hampton Roads Phase I MS4s?
  - i. What MS4 boundaries were used?
  - ii. Did the WLA calculations for the Phase I MS4s include areas in the Phase I boundaries that are covered by other permits held by private companies, the state, or federal agencies?
4. Is EPA prepared to work with the Hampton Roads localities during the Phase II WIP process to ensure that the urban runoff WLAs reflect the most accurate land use data available, including the available GIS data?
5. Under what circumstances will EPA modify the WLAs at the conclusion of the Phase II WIP process?

Specifically:

- a. The EPA has agreed to run the Bay model with revised land use data in 2011. Will the WLAs be revised if the WLAs increase for some Phase I MS4s?

- b. Why were Total Suspended Solids (TSS) WLAs included in the TMDL given EPA's acknowledgement that the Bay model could not be calibrated for sediment?
  - c. Does EPA intend to distribute any of the 9.5 percent TSS load reserve in the James River Basin or the 9.2 percent TSS load reserve in the York River Basin to Hampton Roads MS4s as part of the Phase II WIP process?
  - d. Can all of the MS4 sector WLAs be revised as part of the Phase II WIP process if the basin allocations are met?
6. How can the Hampton Roads region follow the Phase II WIP process when the Department of Conservation and Recreation (DCR) has already started writing permits based on the individual Phase I MS4 WLAs? EPA's Phase II WIP Fact Sheet states as follows:
- “EPA expects the Bay jurisdictions to develop Phase II WIPs that further divide final nonpoint source and aggregate point source target loads for the 92 303(d) segment drainage areas using a finer geographic scale such as counties, conservation districts, sub-watersheds, or, where appropriate, individual sources or facilities. EPA expects the local targets to be used for planning purposes and does not intend to establish local targets as separate allocations within the Bay TMDL.”
7. The Hampton Roads localities are already investing in programs that will reduce nutrient loads. Existing EPA documentation indicates that the localities cannot count these programs as efforts to meet the TMDL. How can localities get credit for investments that reduce Sanitary Sewer Overflows (SSOs)? Implementing no discharge zones for boats? Increasing oyster restoration?
  8. Will EPA count nutrient load reductions from non-structural BMPs like nutrient management and the fertilizer ban as MS4 reductions or treat them as nonpoint source reductions?
  9. Virginia's BMP efficiencies and EPA's model BMP efficiencies are not equivalent. Will EPA defer to Virginia's BMP efficiencies to assess compliance?

B. 2025 Deadline

1. Will EPA expect DCR to include compliance schedules designed to meet the applicable WLAs by the 2025 deadline in the Phase I MS4 permits when they are reissued and in the Phase II MS4 general permit when it is reissued?
2. NPDES (MS4) permits will be the enforcement tool to implement TMDL-based storm water nutrient reductions. NPDES storm water permits are based on the "maximum extent practicable" (MEP) standard. The evaluation of the MEP standard includes technical and economic achievability. Will the EPA consider adjusting the timeline for storm water load reductions in the TMDL if the existing timeline is not reasonably achievable?

We ask that EPA respond to the questions in writing within 30 days of the date of this letter. Should EPA choose not to answer the questions, we would appreciate knowing that as well within the next 30 days. EPA's responses to the questions may well lead to additional questions so it would be helpful to arrange a meeting as soon as possible to discuss the questions and answers before EPA responds in writing.

Thank you for your consideration of this request and we look forward to hearing from you at the earliest opportunity. Please contact the Commission's Deputy Executive Director, John Carlock at 757.420.8300 or at [jcarlock@hrpdcva.gov](mailto:jcarlock@hrpdcva.gov) if you wish to discuss this matter further.

Sincerely,



Stan D. Clark  
Chairman

copy: Douglas Domenech, Secretary of Natural Resources  
Anthony Moore, Assistant Secretary for Chesapeake Bay Restoration  
David A. Johnson, Director, Virginia Department of Conservation and Recreation  
David K. Paylor, Director, Virginia Department of Environmental Quality  
Hampton Roads General Assembly Delegation  
HRPDC Commissioners  
Dwight L. Farmer, Executive Director, Hampton Roads Planning District Commission  
John M. Carlock, Deputy Executive Director, Hampton Roads Planning District Commission  
David E. Evans, McGuireWoods, LLP



# COMMONWEALTH of VIRGINIA

Office of the Governor

Doug Domenech  
Secretary of Natural Resources

September 28, 2011

Mr. Shawn Garvin  
Regional Administrator  
U.S. Environmental Protection Agency  
1650 Arch Street  
Philadelphia, PA 19103-2029

Dear Mr. Garvin:

The purpose of this letter is to follow-up on our discussions concerning the reduced accuracy of the Phase 5.3.2 Watershed Model. Virginia's concerns echo those you received last July from the Commonwealth of Pennsylvania.

Virginia remains committed to do our share of the watershed wide effort to restore the Chesapeake Bay. We will continue to implement practices that reduce nutrient and sediment pollution as outlined in the Virginia Watershed Implementation Plan and will dedicated millions of dollars to the effort this year. Unfortunately, as explained below, we have discovered that the model contains inexplicable inaccuracies that must be corrected. The current watershed model is undermining the credibility of our collective efforts. Virginia proposes several adjustments to the current process so the clean-up efforts can stay on track and continue moving forward.

Virginia has significant concerns with several aspects of the Phase 5.3.2 Watershed Model. As explained in our presentation to you on September 16<sup>th</sup> (see attached), the most notable problem exists with the lack of adequate nutrient reduction credit applied to nutrient management plans. This is a problem not only in Virginia but covers numerous counties across the entire Bay watershed as illustrated on slide 4 in the presentation. This serious shortcoming alone renders one of our most effective and commonly used BMPs useless in meeting nutrient reduction goals.

We have found that the model, as currently constructed, is not appropriate for use in assigning loads in permits, developing local load targets, or measuring reduction progress. It is especially not appropriate for imposing any consequences. Attempting to use the model in these ways negatively impacts our planning for the Phase II WIP, along with the credibility of the EPA, and of most concern, exposes Virginia to potential litigation. We ask for your help to resolve these matters through what we believe are reasonable steps.

Attachment 16C

We are aware that modeling of a watershed as large and complex as the Chesapeake Bay is a monumental task. The current model may be an adequate tool for predicting overall pollution loadings on a watershed basis. However, as we demonstrated in our discussion and presentation on September 16<sup>th</sup>, and the Maryland presentation sent by Jim Edwards on September 12, when used on a local government level outrageous anomalies occur in the model that are inconsistent with current scientific knowledge.

As a consequence of these discussions, we have developed the attached "Path Forward" document that outlines needed changes and adjusts the schedule. A commitment from EPA to correct these concerns is needed as a precursor to continued Phase II WIP planning efforts.

It is clear that the model, as currently constructed, is not capable of producing meaningful, realistic loading targets for use at the local level and that our time is better spent working with local governments on implementation of the suite of practices described in our Phase I WIP or equivalent measures. Our modified approach to meet our commitments for Phase II and the 2012-2013 Milestones is also described in the attached "Path Forward" document.

Virginia is ready to move forward with the Phase II planning process and development of milestones. However, recognition from EPA of the current problems and limitations of the model, along with a commitment to work together to address them will be key to our success.

I look forward to further discussions on our proposed path forward.

Sincerely,  


Doug Domenech

cc: Jeff Corbin, Senior Advisor to the Administrator for Chesapeake Bay and Anacostia River  
Jim Edwards, Deputy Director, Chesapeake Bay Program

# Path Forward

## Proposed Approach for Phase II WIP Development

9/21/11

### Three-Track Approach to Implement Phase I WIPs and develop Phase II WIPs

#### Overview:

- The Chesapeake Bay jurisdictions have expressed serious concerns about using 5.3.2 watershed model output for localities nutrient and sediment reduction targets under the framework of the Chesapeake Bay TMDL and the approved Phase I Watershed Implementation Plans (WIP).
- While useful as a planning and evaluation tool at the watershed scale, the model was not constructed for use at the local scale and its output raises serious questions and concerns among state agencies and our local partners.
- Anomalies present in the output are difficult to explain and in many ways do not represent the “real world” of local watershed management and water quality planning and implementation.
- In order to ensure that these identified issues do not divert attention from the more important task of implementation of the Phase I WIPs and meeting associated TMDL targets, the following approach is proposed that would result in model revisions and ongoing implementation using Phase I WIP practices as the basis for the Phase II WIPs.

The following tracks are proposed to take place simultaneously:

#### Track 1

EPA continues to work on correcting identified model issues so that it can be used with greater confidence in setting local (sub-segment shed) target loads for N, P and S. The following steps are recommended:

- Holistic review of the following issues:
  - How to model Agricultural Nutrient Management (efficiency or Land Use Change)
  - Calculation of nutrient rates on acres not under nutrient management
  - Load reductions associated with application of nutrient management plans
  - Changes in manure routing preferences through time
  - Amount and nutrient content of poultry manure
  - Biosolids application (include all states or exclude all states)
  - Regional factors due to Phase 5.3.2. Watershed Model calibration

- Submitted versus credited BMPs
- BMP stacking (Urban and Continuous No-till)
- Modify Scenario Builder code
- Test Model to determine if modifications produce expected results.
- Re-calibrate watershed model
- Run scenarios
- Review outputs to evaluate other concerns and check for unintended consequences
- Upon agreement by EPA and the jurisdictions, use refined model to establish loading targets at the local level.

## **Track 2**

States develop Phase II WIPs based upon the existing practices identified in the Phase I WIP/TMDL input deck and submit these interim plans to EPA by June 1, 2012. These plans will focus on achieving the 2017 goals.

- Continue current local engagement efforts to collect improved land use, BMP implementation and local implementation strategies as the Phase II WIP is developed. Local engagement efforts will shift focus from meeting local target loads to maintaining implementation levels consistent with the Phase I WIPs.
- The Phase II WIP would provide a mix of BMPs at the segment-shed level.
- States refine the interim BMP targets once the model is deemed sufficient to assign target loads and corresponding levels of BMP implementation needed at the local level as part of the next milestone cycle or the Phase III WIP development.

## **Track 3**

States develop 2012-2013 Milestone implementation actions and strategies and submit these plans to EPA in accordance with the current schedule.