VIRGINIA MUNICIPAL STORMWATER ASSOCIATION

COMMENTS OF THE
VIRGINIA MUNICIPAL STORMWATER ASSOCIATION, INC.
REGARDING U.S. EPA'S DRAFT CHESAPEAKE BAY TMDL AND
VIRGINIA'S DRAFT CHESAPEAKE BAY TMDL WIP

I. INTRODUCTION & EXECUTIVE SUMMARY

On September 3, 2010, the Commonwealth of Virginia ("Virginia") submitted a Chesapeake Bay TMDL Phase I Watershed Implementation Plan ("Draft WIP"). On September 22, 2010, the United States Environmental Protection Agency ("EPA") issued a Notice of Availability of the Draft TMDL and request for public review and comment in the *Federal Register* regarding the development of a total maximum daily load for the Chesapeake Bay Watershed. On September 24, 2010, EPA issued a Draft Chesapeake Bay Total Maximum Daily Load ("Draft TMDL").

The Virginia Municipal Stormwater Association, Inc. ("VAMSA") hereby submits the following comments in response to the EPA's *Federal Register* Notice and Draft TMDL and Virginia's Draft WIP. VAMSA is a statewide association of Virginia localities that supports stormwater management based on good science and good public policy, including a balanced approach to environmental and fiscal sustainability. Many of VAMSA's members own or operate drainage systems, sometimes referred to as municipal separate storm sewer systems ("MS4s"), which receive and convey stormwater runoff to prevent flooding. These MS4s are regulated for water quality purposes under state-issued National Pollutant Discharge Elimination System ("NPDES") permits known in Virginia as Virginia Stormwater Management Program ("VSMP") permits. VAMSA's members have a strong interest in the development of the Bay TMDL and in its implementation at the state and local level.

As explained in greater detail in VAMSA's full comments below, EPA's Draft TMDL suffers from a number of fundamental flaws including the items discussed below. VAMSA also has concerns regarding the scope of the Urban Stormwater element of the WIP, which is addressed below where relevant.

Before turning to these issues, first we are compelled to point out the severe lack of a meaningful opportunity for public review and comment on these complex regulatory proposals. The development of the Bay models has required thousands of hours of time from dozens of EPA staff over many years. However, EPA has not provided an opportunity for the public to understand how the models work and the implications of changes to the input data sets for model results. These results define the allocations that EPA has proposed in the TMDL. Therefore, although the model is being used as far more than a "tool" and is essentially being used to define scope and extent of the TMDL requirements, it very much represents a "black box" that frustrates opportunities for meaningful public review and comment. Furthermore, VAMSA's sister association, the Virginia Association of Municipal Wastewater Agencies ("VAMWA"), has made requests for information to better understand specific issues of interest in the models,

but EPA has not responded to those requests. Against this background of complexity, EPA has only given the public 45 days to comment on what is arguably the most complex TMDL ever developed in the nation. We believe that the lack of transparency in combination with a limited review period fails to comply with both the spirit and the letter of the Administrative Procedure Act.

EPA Has Inappropriately Failed to Consider Cost, Cost-Effectiveness, and Cost-Benefit

Of particular relevance to Urban Stormwater and thus eventually to MS4s, EPA's Draft TMDL fails to adequately consider a critical aspect relating to whether or not its TMDL will be successful for Bay restoration, namely cost and feasibility, as well as cost-effectiveness and cost-benefit. VAMSA has similar concerns regarding the WIP as to Urban Stormwater.

An expert national engineering firm has estimated the cost to Virginia's MS4 localities to restore 50% of existing untreated impervious area over a 15 year term (the level and manner of effort assumed by EPA in its Draft TMDL at page 8-14 to 8-15). The low estimated ***per household***, ***annual*** cost is $678 in 2011 and possibly as high as $1,717 in 2025.[1] Further, these staggering figures are only for the specific retrofits considered in EPA's plan and thus omit other significant existing and future costs for other MS4 permit obligations (such as under existing permits and potentially increased requirements under future permits and other TMDLs) and for general maintenance of the existing stormwater system.

On a state-wide basis (for localities in the Bay Watershed), a second expert engineering firm has confirmed the extraordinary costs for urban stormwater.[2] The firm has estimated the total capital costs for Virginia localities in the Bay Watershed to be approximately $39.4 billion, with an annual cost (including O&M) of $4.2 billion. Based upon a typical industry approach to calculating stormwater bills, this translates to approximately $1,200 per year for a representative residential house, $11,100 per year for a representative small business (e.g., convenience store or gas station), $73,800 per year for a representative neighborhood shopping center, $24,600 per year for a representative church or place of worship, and $1.1 million per year for a representative regional mall. This would place a high burden on a household based upon median household income (approximately 2.0% to 2.7%).

Elsewhere, EPA has estimated that the cost for retrofits for existing MS4s may be ***$7.9 billion per year*** for the Bay TMDL watershed. Furthermore, the nationally-recognized Center for Watershed Protection has estimated urban retrofit costs at on the order of ***$88,000 per acre.***

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[1] Stormwater Retrofit Cost Estimate Case Study, D. Mason and C. Tabor, CDM (Oct. 12, 2010) (attached as Appendix 1). VAMSA hereby incorporates Appendix 1 by reference to these comments (all of VAMSA's Appendices are incorporated hereto by reference). Additionally, VAMSA incorporates by reference all EPA files or documents, no matter the form, and all materials from EPA Chesapeake Bay committees or subcommittees pertaining to Bay clean-up efforts. VAMSA is aware that a growing number of localities and planning district commissions throughout Virginia may have similar concerns and to the extent that such entities file comments on the Draft TMDL or WIP, VAMSA recommends that EPA and Virginia carefully consider those comments as well.

[2] Range of Estimated Costs for Virginia Urban Runoff (Stormwater), E. Cronin, Greeley & Hansen (Nov., 2010) (attached as Appendix 1).

Given the current economic environment and the level of associated costs, VAMSA cannot begin to understand EPA's decision to sidestep discussing the potential economic impact of the Bay TMDL on the residents of the Bay watershed, especially in light of the fact that EPA stopped its effort to conduct a Use Attainability Analysis as part of this TMDL process.

Furthermore, the Draft TMDL also does not consider cost effectiveness, sustainability, or overall environmental benefit. VAMSA is aware of the development of the Best Management Practices Benefit Planner ("BMP-BP") model discussed in VAMWA's comments. This peer reviewed model (reviewed by Virginia Tech) was designed to consider implementation costs, energy requirements, green house gas emissions, and ancillary environmental benefits (e.g. creation of wildlife habitat, flood protection, human health protection) to support environmental decision making.

VAMWA used this model to compare EPA's recommendations for the York River basin with an alternative scenario that would achieve a similar level of nutrient reduction. The alternative scenario consisted of reducing urban stormwater retrofit acreage by 50% from EPA's 50% concept, retaining municipal wastewater treatment plants at their stringent state regulatory levels, and increasing agricultural BMPs by 20%. This demonstrated the following benefits:

- Reduced capital costs by approximately 50% (~$1B)
- Reduced operation and maintenance (O+M) costs by 50% ($32M/yr)
- Increased carbon sequestration by approximately 20%
- Significantly reduced green house gas (GHG) emissions
- Increased ancillary benefits associated with wildlife habitat, flood hazard protection, and base-flow projection.

VAMSA is providing this example not to endorse the specific inputs listed in these bullets (including the still-extremely-expensive stated urban stormwater retrofits), but to make the general point that EPA could have and should have designed the TMDL to achieve greater environmental benefit, at a far lower cost. EPA should correct these lose-lose outcomes prior to finalizing the Bay TMDL. Failure to do so would be arbitrary and unreasonable.

VAMSA appreciates and supports the more flexible approach evident in the WIP as to Urban Stormwater, including crediting non-structural BMPs such as urban nutrient management, fertilizer restrictions, restrictions on improper waste disposal, street sweeping, and expanded trading program, all of which are listed at pages 78-79. Nevertheless, VAMSA has similar concerns with the WIP regarding the overall level of effort and associated costs.

From a local governmental perspective, it is imperative that the final TMDL and WIP retain flexibility for reasonable decision-making and implementation approaches and mechanisms at the local level that take into account cost considerations, reasonableness of rates for taxes/fees to implement the TMDL, and other relevant considerations.

EPA's Unpromulgated "Reasonable Assurance" Regulation Does Not Support EPA's Proposed Disapproval of the WIP and Imposition of "Backstop" Allocations

In its Draft TMDL, EPA proposed backstops based upon its view that Virginia's Draft WIP provided less than adequate "reasonable assurance" that its plan would achieve the nonpoint source load allocations. EPA's position on "reasonable assurance" is unreasonable and unlawful for many reasons.

First, EPA has no authority pursuant to the Clean Water Act ("CWA") to review and/or approve or disapprove Virginia's WIP.

Second, EPA's action is inconsistent with thousands of prior EPA actions.

Third, it is unreasonable for a federal agency to announce TMDL caps and just a couple months later expect a state administrative agency (*i.e.*, no lawmaking or taxing authority) to clearly document what the future laws and taxes will be to support implementation of the EPA mandate.

Fourth, EPA's "reasonable assurance" proposal and related backstops unreasonably increases the already heavy burden on urban stormwater.

EPA's Decision to Reject Virginia's Expanded Trading Option Is Unreasonable

Virginia's WIP includes provisions for expansion of its existing nutrient trading program to include agriculture, urban stormwater, and other sectors. In addition, Virginia's Draft WIP (unlike EPA's Draft TMDL) does not include mandatory retrofits/restoration of impervious area. Taken together, these two aspects of Virginia's plan would give affected parties the flexibility to incorporate cost effectiveness into management decisions. Unfortunately, EPA has largely ignored cost considerations in developing the TMDL. In fact, EPA has acknowledged in recent public meetings that the TMDL does not consider affordability or cost-effectiveness. Unlike EPA, local governments (including MS4 owners) have a responsibility to their citizens to seek cost-effective solutions. By ignoring cost, EPA's disapproval of Virginia's WIP essentially conflicts with the public interest in efficient and affordable regulations. EPA's acceptance of Virginia's intent to consider trading program expansion would help address this major shortcoming of the TMDL, though attainability of the TMDL remains a major question.

EPA's Choice of Daily Loads That Are Too Low and Its Failure to Appropriately Address MS4 Allocations is Unreasonable

VAMSA is concerned that EPA has not appropriately addressed daily loads in the Bay TMDL. Existing Chesapeake Bay programs are properly built on the concept of annual load. As to point source permitting, this approach has been documented in an EPA 2004 Memorandum, and VAMSA supports that approach. In the TMDL, however, EPA has inappropriately set daily loads at the segment level based upon the 95% percentile and indicates this statistical approach assumes the daily maximum load would be violated 5% of the time. Obviously this is acceptable to EPA as this statistic does not represent a real world water quality problem, and VAMSA agrees. However, VAMSA believes that higher daily loads would be appropriate, and that the

ecological insignificance of daily should be clarified, particularly in the context of WLAs for MS4s. MS4s have discharges that are highly influenced by uncontrollable precipitation events.

In addition, EPA has not clearly addressed the distinction between TMDL WLAs and MS4 effluent limitations. Consistent with EPA's existing regulations and guidance, the Bay TMDL should clearly state that MS4s are not subject to numeric effluent limitations. Under section 402(p) of the CWA, the legal compliance standard for MS4s is based on a "maximum extent practicable" ("MEP") level of effort. Here, given the extremely stringent proposed allocations, this should be made clear in the TMDL.

Other Issues

There are a number of other material deficiencies in the TMDL that render it arbitrary, unreasonable and legally indefensible, including:

- EPA's Approach to James River (Chlorophyll-*a*) is Unreasonable
- EPA's Bay Model is Flawed
- EPA's View of Relative Effectiveness is Incorrect
- EPA's Backstops Eliminate Planned Agricultural Load Reductions Despite those Controls Being Among the Most Cost-Effective Measures for Improvement
- EPA's Failure to Explicitly Include Filter Feeders and Alternative Technologies in the Bay TMDL is Unreasonable
- EPA's Failure to Aggressively Target Air Deposition is Unreasonable
- The American Canoe and Kingman Park Consent Decrees do not Address Virginia Chlorophyll-*a*

VAMSA expands on its comments below.

II. EPA HAS INAPPROPRIATELY FAILED TO CONSIDER COST, COST-EFFECTIVENESS, AND COST-BENEFIT

Available cost estimates indicate that the Bay TMDL could have cost impacts on the order of $700 to $1,800 per household per year. Yet, EPA has failed to consider this significant issue in its Draft TMDL.

In order to withstand appellate scrutiny by a Federal Court, EPA must be able to meet the "arbitrary and capricious" standard of review for a federal agency action mandated by the Administrative Procedure Act.[3] Specifically, a Federal Court will "....hold unlawful and set

[3] 5 U.S.C. §500, *et seq.*

aside agency action, findings, and conclusions found to be arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law…"[4] The U.S. Court of Appeals for the D.C. Circuit explained that an action will be held arbitrary and capricious:

> …if the agency has relied on factors which Congress has not intended it to consider, **entirely failed to consider an important aspect of the problem**, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise… [5]

Given that one of the main limitations on fully accomplishing Bay restoration has been the tremendous cost, EPA's failure to consider cost, cost-effectiveness, or cost-benefit in its Draft TMDL is the epitome of agency decision-making that fails "to consider an important aspect of the problem."[6]

EPA's Draft TMDL allocates reductions among various source sectors. VAMSA believes that considerations of cost, cost-effectiveness and cost-benefit are imperative parts of determining how to make these allocations. It is hard to imagine how EPA could have made a reasoned decision on this issue without considering cost, cost-effectiveness, and cost-benefit. EPA certainly should not have, given the scope of the Bay TMDL. In addition, a consideration of cost issues, in particular a careful review of which options are the most cost-effective, would benefit EPA, by providing more reasonable assurance for this TMDL. Cost-effective measures are much more likely to actually be implemented, and implemented on schedule, as compared to measures that are extraordinarily expensive. EPA's refusal to consider cost contradicts its own demands for reasonable assurance. This is unacceptable, particularly in light of the fact that there is insufficient federal funding for the clean-up and local resources are strained in a way that they have not been for many decades.[7]

Although economics at the state level have improved slightly over the last year, local governments continue to suffer with tightening local budgets and reduced revenues. According to an October, 2010 Research Brief from the National League of Cities ("NLC"), "Local and regional economies characterized by struggling housing markets, slow consumer spending, and high levels of unemployment are driving declines in city revenues." The October brief shows

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[4] 5 U.S.C. §706(2)(A).

[5] Eagle Broadcasting Group, Ltd. v. F.C.C., 563 F.3d 543, 551 (D.C. Cir. 2009) (emphasis added).

[6] EPA materials from April, 2009, show a willingness on EPA's part to consider affordability as a part of this process. See April 20-21, 2009 Presentation from B. Koroncai to PSC (Chesapeake Bay Water Quality Big Picture) at slide 13 ("An affordability assessment will be completed") (attached hereto as Appendix 2). Yet, EPA's Draft TMDL leaves the question of affordability entirely unaddressed.

[7] In November, 2009, the Governors of Virginia and Maryland wrote to the President asking that he consider the need for federal assistance for Bay clean-up efforts (attached as Appendix 3). Note that the letter was written in response to the Executive Order strategy and reports. VAMSA submits that financial need is even more dire now given the requirements of the Draft TMDL. See also June 15, 2010 Letter from Virginia Governor Robert E. McDonnell to Lisa P. Jackson, EPA Administrator (attached hereto as Appendix 4).

that concerns over local fiscal health remain at the highest level in the 25 year history of the survey. Two of the major issues plaguing cities are declines in personal property and sales tax. As a result, NLC concludes that:

> 2010 reflects a number of downward trends for city fiscal conditions. The impacts of the economic downturn are becoming increasingly evident in city projections for final 2010 revenues and expenditures, and in the actions taken in response to changing conditions. The local sector of the economy is now fully [sic] the midst of a downturn that will be several years in length. The effects of a depressed real estate market, low levels of consumer confidence, and high levels of unemployment will likely play out in cities through 2010, 2011, and beyond.[8]

The National Association of Counties also conducted a survey of sample counties across the United States in June, 2010 ("How are Counties Doing? An Economic Status Survey"). According to the Executive Summary: "This survey reveals that the downturn continues to be widespread with counties of all sizes feeling the crunch from many directions." Furthermore, "[c]ounties report that they are using furloughs, layoffs and service curtailment to help reduce budgets that in many cases remain problematic because of continuing shortfalls."[9]

In short, Virginia's local governments are in no position to fund an expensive and mandatory restoration/retrofit program. Of course, this begs the question: How much would it cost to implement EPA's urban restoration/retrofit proposal?

VAMSA submits for consideration by EPA and the State the attached Technical Memo by a national engineering firm with expertise in stormwater management.[10] The Technical Memo estimates urban stormwater costs for Bay TMDL implementation on an annual per household cost basis. For a level of effort that approximates that of the Draft TMDL, the analysis developed cost estimates to restore 50% of existing untreated impervious area over a 15 year term (the approach used by EPA in its Draft TMDL). ***The result was an annual per household cost from a low of $678 per year in 2011 to a high of $1,711 in 2025.***

The Technical Memo's cost estimate is only for urban retrofits; it does not include costs for stormwater management in unregulated areas or to pay for other costs associated with existing MS4 programs. Thus, total stormwater management cost increases would presumably be considerably higher factoring in increasing requirements of MS4 permits, costs of implementing other TMDLs beyond the Bay TMDL, and generally increasing liability for infrastructure renewal.

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[8] October Research Brief at 7 (available online at http://www.nlc.org/ASSETS/AE26793318A645C795C9CD11DAB3B39B/RB_CityFiscalConditions2010.pdf).

[9] Survey results available online at: http://www.naco.org/research/pubs/Documents/Surveys/Research%20Surveys/How%20are%20Counties%20Doing%20An%20Economic%20Status%20Survey%20July%202010.pdf

[10] See Appendix 1.

On a state-wide basis (for localities in the Bay Watershed), a second expert engineering firm has confirmed the extraordinary costs for urban stormwater.[11] The firm has estimated the total capital costs for Virginia localities in the Bay Watershed to be approximately $39.4 billion, with an annual cost (including O&M) of $4.2 billion. Based upon a typical industry approach to calculating stormwater bills, this translates to approximately $1,200 per year for a representative residential house, $11,100 per year for a representative small business (e.g., convenience store or gas station), $73,800 per year for a representative neighborhood shopping center, $24,600 per year for a representative church or place of worship, and $1.1 million per year for a representative regional mall. This would place a high burden on a household based upon median household income (approximately 2.0% to 2.7%).

Elsewhere, EPA has estimated that the cost for retrofits for existing MS4s may be ***$7.9 billion per year*** for the Bay TMDL watershed.[12]

The nationally-recognized Center for Watershed Protection has estimated urban retrofit costs at on the order of ***$88,000 per acre.***[13]

A. Case Study Demonstration: York River Basin

Agricultural management practices include most of the practices that EPA and others (*e.g.*, Chesapeake Bay Commission, 2004) have identified as the most-cost effective, including nutrient management, conservation tillage, cover crops, and riparian buffers. Compared to many urban and wastewater-based practices, these practices provide much higher levels of ancillary environmental benefits such as wildlife habitat, stream habitat protection, flood control, and greenhouse gas reduction. To illustrate these points, Appendix 5 presents a case study of alternative nutrient controls for the York River basin using the Virginia Tech peer reviewed *BMP Benefit Planner* ver. 1.1 (Malcolm Pirnie, 2010). For the case study the above referenced model was used to compare EPA's recommendations for the York River basin with an alternative scenario that would achieve a similar level of nutrient reduction. The alternative scenario consisted of returning municipal point sources to existing requirements (TN= 6 mg/L, TP=0.7 mg/L, design flows), ***reducing urban storm water BMP acreage by 50%*** and increasing agricultural BMPs by 20%. The results indicated the following:

- ***Reduced capital costs by approximately 50% (~$1B)***
- Reduced operation and maintenance (O+M) costs by 50% ($32M/yr)
- Increased carbon sequestration by approximately 20%
- Significantly reduced green house gas (GHG) emissions
- Increased ancillary benefits associated with wildlife habitat, flood hazard protection, and base-flow projection

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[11] See Appendix 1.

[12] The Next Generation of Tools and Actions to Restore Water Quality in the Chesapeake Bay: A Revised Report Fulfilling Section 202a of Executive Order 13508 (Nov. 24, 2009).

[13] See Appendix 1.

VAMSA is providing this example not because we agree with the specific inputs (in particular the urban stormwater aspects), but to make the general point that it is possible to derive a greater environmental benefit at a lower cost if flexibility is allowed in the TMDL. EPA should consider these types of cost issues and options before it finalizes the Bay TMDL. To do otherwise is indefensible.

This case study approach is consistent with the intent of EPA's Healthy Watersheds Initiative. This initiative advocates for a holistic approach to management that includes geomorphology, landscape condition, hydrology, habitat, and biological integrity (http://water.epa.gov/learn/training/wacademy/upload/2010_10_13_slides.pdf). EPA has contradicted its own concepts with the Bay TMDL by a narrowing its focus to only nutrient loadings at the exclusion of other end-points important to healthy watersheds.

VAMSA appreciates and supports the more flexible approach evident in the WIP as to Urban Stormwater, including crediting non-structural BMPs such as urban nutrient management, fertilizer restrictions, restrictions on improper waste disposal, street sweeping, and expanded trading program, all of which are listed at pages 78-79. Nevertheless, VAMSA has similar concerns with the WIP regarding the overall level of effort and associated costs.

From a local governmental perspective, it is imperative that the final TMDL and WIP retain flexibility for reasonable decision-making and implementation approaches and mechanisms at the local level that take into account cost considerations, reasonableness of rates for taxes/fees to implement the TMDL, and other relevant considerations.

III. EPA'S UNPROMULGATED "REASONABLE ASSURANCE" REGULATION DOES NOT SUPPORT EPA'S PROPOSED DISAPPROVAL OF THE WIP AND IMPOSITION OF "BACKSTOP" ALLOCATIONS

EPA has concluded that Virginia's WIP fails to comply with EPA's July 1, 2010 and August 13, 2010 nutrient and sediment allocations[14] and does not adequately establish reasonable assurance. EPA has established what it is calling a "backstop allocation" in response. This backstop is meant to "…reduce the point source loadings as necessary to compensate for the deficiencies EPA identified in the reasonable assurance components of the jurisdictions' draft Phase I WIPs addressing nonpoint source reductions."[15]

Each of the Bay States received a "minor," "moderate," or "high" backstop depending upon EPA's view of how severely the state had missed the allocation targets and reasonable assurance mandate. Virginia received a "moderate" backstop to bridge the gap between EPA's

[14] EPA's letters to Virginia Secretary of Natural Resources Doug Domenech establishing nutrient and sediment allocations are attached hereto as Appendix 6.

[15] Draft TMDL at 8-9.

expectations and the Virginia Draft WIP.[16] The "moderate" backstop addresses MS4s as follows:

> MS4s: 50 percent of urban MS4 lands meet aggressive performance standard through retrofit/redevelopment; 50 percent of unregulated land treated as regulated, so that 25 percent of unregulated land meets aggressive performance standard; designation as necessary.[17]

VAMSA strongly opposes the use of backstops in Virginia. EPA's application of its reasonable assurance "regulation" is unlawful, unprecedented and certainly unwarranted under the circumstances. EPA has no justifiable basis (or legal authority) for setting any backstops in Virginia.

This approach to urban stormwater differs from the approach taken by Virginia in its Draft WIP. Virginia's Draft WIP does not mandate retrofits/restoration of impervious area.[18] Furthermore, Virginia's Draft WIP includes a plan for allowing municipalities to participate in an expanded version of the Virginia Nutrient Credit Exchange:

> When the Chesapeake Bay TMDL is issued, about half the land area of the Commonwealth will be under nutrient and sediment load allocations that cap the discharge of these pollutants from point source and non-point sources. Unless changed, these pollutant allocations will become permanent pollutant caps on each of the major Virginia river basins that all the source sectors, added together, cannot exceed. In order to help meet the challenging pollution reduction requirements imposed by the Bay TMDL, this Phase 1 WIP recommends the Commonwealth expand the nutrient credit exchange program to better ensure that future nutrient and sediment reduction actions are as equitable and as cost-effective as possible among all of the source sectors. An expanded program also allows local decision-makers to consider nutrient and sediment generating potential as they face development, land use, and capital planning challenges.[19]

VAMSA submits that EPA's position on reasonable assurance, and in turn its treatment of stormwater, is untenable for three reasons.

First, EPA's view of reasonable assurance in this TMDL is unprecedented at the federal or state level. EPA has written and/or approved thousands of TMDLs for impaired waters across the

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[16] Draft TMDL at 8-19.

[17] Draft TMDL ES-9.

[18] Draft WIP at 14.

[19] Draft WIP at 4-5. This does not mean that VAMSA fully supports Virginia's Draft WIP, as it suffers from many of the cost-related problems noted above with regard to EPA's Draft TMDL. However, VAMSA does support the flexibility Virginia has given the urban stormwater sector in the WIP vis-à-vis expanding Virginia's existing trading program.

United States. Because the phrase "reasonable assurance" is undefined in either the CWA or in regulations or in guidance,[20] EPA's approach to reasonable assurance has ranged from liberal to more conservative.[21]

As examples, EPA's Paxton Creek Watershed TMDL (nutrients, sediment), Goose Creek Watershed TMDL (nutrients), Sawmill Run TMDL (nutrients), and Southampton Creek Watershed TMDL (nutrients and sediment) all contain weak reasonable assurance provisions that fail to link the identified BMPs to implementation programs. In addition, these TMDLs suggest that BMP implementation should only "eventually" meet load allocation reductions goals.[22] EPA has approved many TMDLs, including the Anacostia River Basin Watershed TMDL (sediment, TSS), the Anacostia River Basin Watershed TMDL (BOD, nutrients) and the Tidal Potomac River TMDL (PCBs), which lack schedules for reductions and consequences for failure to meet load allocations. If EPA had a basis for approving these TMDLs, VAMSA cannot understand how it could now argue that reasonable assurance is so lacking in the Bay TMDL that backstops are necessary.[23]

Furthermore, what EPA has done in its Draft TMDL is really to promulgate a new rule—i.e., a new regulatory definition of "reasonable assurance"—without following proper regulatory procedure. EPA appears to be attempting a "do-over" of its previously unsuccessful rulemaking in the early part of the decade. On July 13, 2000, EPA published a final rule, which would have incorporated a definition of reasonable assurance into 40 C.F.R. Part 130.[24] However, Congress, states, industrial and agricultural groups, and environmental organizations opposed the rule; and,

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[20] EPA guidance merely "define[s] when reasonable assurance must be demonstrated but not really what it is." Reasonable Assurance Workgroup Findings and Options, Principals' Staff Committee Meeting, Washington, D.C., at 13 (Sept. 22, 2008) (attached hereto as Appendix 7).

[21] In 2008, EPA's CBPO's Principal's Staff Committee established the "Reasonable Assurance Workgroup." Part of the Workgroup's charge was to develop recommendations for how "reasonable assurance" would be used for purposes of developing the Bay TMDL. Some of the materials prepared by this Workgroup (attached hereto as Appendix 7) confirm that not only is "reasonable assurance" undefined in federal law, but that EPA has previously based TMDLs on a number of different views on reasonable assurance (e.g., EPA has approved a "[b]road spectrum of acceptable reasonable assurance demonstrations in 30,000 TMDLs approved by EPA.").

[22] See Chesapeake Bay Program Principals' Staff Committee's Reasonable Assurance Workgroup, July 23, 2008 Conference Call, Attachment B, Appendix 1, Examples of Reasonable Assurance: Best Practices from EPA-Approved and Published TMDLs and Suggestions from other Sources, at 9-10.

[23] VAMSA hereby incorporates by reference all of the TMDLs EPA has written or approved and all supporting materials. These materials should be publicly available and located in EPA's files. A list of those TMDLs, although not entirely complete, is available at the following link:
http://mail.aqualaw.com/exchweb/bin/redir.asp?URL=http://iaspub.epa.gov/waters10/text_search.tmdl_search_form

[24] Revisions to the Water Quality Planning and Management Regulation and Revisions to the National Pollutant Discharge Elimination System Program in Support of Revisions to the Water Quality Planning and Management Regulation, 65 Fed. Reg. 43,586 (July 13, 2000) (attached as Appendix 8).

EPA withdrew it in 2003.[25] Although EPA may be frustrated by an inability to define "reasonable assurance" in its regulations, there is no justification for defining as it as a part of this TMDL without allowing for public participation and comment.

EPA's Draft TMDL is inconsistent with earlier statements it has made on this subject. For example, in September, 2008, Region III responded to a letter from Maryland's Secretary of Natural Resources John Griffin.[26] In response to a question regarding reasonable assurance, EPA stated that:

> EPA Regions II and III, our partner states and the District are committed to accelerating restoration of the Chesapeake Bay and its tributaries, and EPA Region III believes that reasonable assurance provisions in the Bay TMDL will provide one mechanism to increase the likelihood that actions are taken to reduce nutrient and sediment loads. **However, EPA Region III does not believe that implementation of the Bay TMDL depends solely on reasonable assurance or any other single TMDL element.** Rather, EPA Region III is committed to working with the States and the District to develop and execute a broader implementation framework that draws on elements in the TMDL itself (including reasonable assurance), as well as additional implementation-related information that will accompany the TMDL.[27]

As the discussion above makes clear, EPA's "new" strict definition of "reasonable assurance" in the Draft TMDL is unjustified based upon prior practice.

Second, it is not clear that EPA has adequately factored in the Bay States' two-year milestones into its reasonable assurance determination. This is directly contrary to EPA's statements in 2008 that the two-year milestones would be part of the criteria considered by EPA "as part of its reasonable assurance and implementation framework…"[28] These two-year milestones should be a sufficient backstop to the WIPs to establish adequate reasonable assurance. The Chesapeake Bay Executive Council decided in 2008 that each of the Bay States would provide a set of target reductions and associated management efforts by which EPA could judge progress towards ultimate clean-up goals every two years.[29] EPA followed up on the Executive Council's actions by issuing a letter in December, 2009 promising "consequences" for those Bay States who fall short of those two-year milestones. Although VAMSA disagrees with the concept of

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[25] Withdrawal of Revisions to the Water Quality Planning and Management Regulation and Revisions to the National Pollutant Discharge Elimination System Program in Support of Revisions to the Water Quality Planning and Management Regulation 68 Fed. Reg. 13,608, 13,609 (March 19, 2003) (attached as Appendix 9).

[26] This letter is attached as Appendix 10.

[27] Letter from EPA Region III to Secretary John Griffin, Enc. A at p. 2.

[28] Letter from EPA Region III to Secretary John Griffin, Enc. A at p. 2.

[29] The first set of two-year milestones are attached hereto as Appendix 11.

"consequences," EPA has not explained in its Draft TMDL why this additional accountability is inadequate for "reasonable assurance" purposes.

In a larger sense, the two-year milestones are also pieces of a larger 15 year plan (based upon an implementation period that runs from 2011 to 2025). The two-year milestones provide EPA with an opportunity to perform a regular "check-up" to determine whether the Bay States are accomplishing the goals they have set. But, the program itself also allows for adjustments over the full implementation period. EPA's reasonable assurance is assured by the process. Simply put, we will have the opportunity to manage this program as time goes by. EPA's view that reasonable assurance must established in absolute terms today is short-sighted and unreasonable.

Third, and lastly, EPA has inappropriately rejected an important element of Virginia's approach to reasonable assurance—*i.e.*, expansion of the existing nutrient trading system to include additional source sectors. As a general matter, EPA should have provided due deference to Virginia's Draft WIP.

And, with regard to this issue, EPA should have allowed Virginia to move forward with its plan to develop an expanded trading program. Virginia has a stellar track-record with regard to market-based trading, having established a very successful PS trading program. Virginia has earned the right to show how it could expand that program in a way that would provide reasonable assurance of needed reductions.

For these reasons above, VAMSA objects to EPA's determination to impose a "backstop" that mandates retrofits. This error must be corrected before EPA issues its final TMDL. For the above reasons, EPA's position on "reasonable assurance" is unlawful and unreasonable and arbitrary and capricious.

VAMSA's position is further supported by the fact that EPA has no authority pursuant to the CWA to review and/or approve or disapprove Virginia's Draft WIP. EPA's decision to do so, and its proposal to override Virginia's WIP, is unlawful.

VAMSA does not dispute that TMDL implementation planning is important for moving clean-up programs ahead after TMDL adoption and for illustrating NPS reductions plans. However, because WIPs are not derived from CWA section 303(d) authority,[30] the details of these plans are not subject to EPA approval or control. EPA's decision in its Draft TMDL to create

[30] Section 303(d) of the Clean Water Act mandates that states must prepare TMDLs for impaired waters, and authorizes EPA to approve or disapprove the loadings. If EPA chooses to disapprove, it has the authority to develop loadings on its own accord ("If the Administrator disapproves such identification and load, he shall not later than thirty days after the date of such disapproval identify such waters in such state and establish such loads for such waters as he determines necessary to implement the water quality standards applicable to such waters and upon such identification and establishment the State shall incorporate them into its current plan under subsection (e) of this section.") 33 U.S.C. §1313. Section 303(e) specifically gives the State the authority and responsibility to develop a "continuing planning process" for addressing navigable waters. A part of this planning process is TMDLs (again, TMDL implementation plans are not mentioned). Nowhere in the text of Section 303(d) or (e) is EPA permitted to pass judgment on state implementation plans.

"backstops"—requirements that in effect revise the Virginia's Draft WIP—is not supported by federal law.

In addition to acting without specific authorization from federal law, EPA's actions are also inconsistent with state primacy granted by Section 510 of the Act:

> Except as expressly provided in this Act, nothing in this Act shall (1) preclude or deny the right of any state or political subdivision thereof or interstate agency to adopt or enforce (A) any standard or limitation respecting discharges of pollutants, or (B) any requirement respecting control or abatement of pollution; except that if an effluent limitation, or other limitation, effluent standard, prohibition, pretreatment standard, or standard of performance is in effect under this Act, such State or political subdivision or interstate agency may not adopt or enforce any effluent limitation, or other limitation, effluent standard, prohibition, pretreatment standard, or standard of performance which is less stringent than the effluent limitation, or other limitation, effluent standard, prohibition, pretreatment standard, or standard of performance under this Act; or (2) be construed as impairing or in any manner affecting any right or jurisdiction of the States with respect to the waters (including boundary waters) of such States.")[31]

Federal law clearly gives Virginia the authority to develop its own requirements and programs, so long as they are not less stringent than those established under the Act.[32] Because EPA has no statutory authority to establish WIPs, it is impossible for Virginia's Draft WIP to be less stringent.

For these reasons, Virginia should have the discretion to establish its own WIP, without EPA passing judgment and usurping what is rightfully the state's role in this process.

IV. EPA'S DECISION TO REJECT VIRGINIA'S EXPANDED TRADING OPTION IS UNREASONABLE

Virginia's WIP includes provisions for expansion of its existing nutrient trading program to include agriculture, urban stormwater, and other sectors. Implementation of an expanded trading program would enable affected parties to incorporate cost effectiveness into management decisions, which is essentially as EPA has largely ignored cost considerations in developing the TMDL. In fact, EPA has acknowledged in recent public meetings that the TMDL does not consider affordability or cost-effectiveness. Local governments (including MS4 owners) have a responsibility to their citizens to seek cost-effective solutions. By ignoring cost, EPA's disapproval of Virginia's WIP essentially conflicts with the public interest in efficient and affordable regulations. EPA's acceptance of Virginia's intent to consider trading program expansion would help address this major shortcoming of the TMDL. As discussed above,

[31] 33 U.S.C. 1370.

[32] Virginia law (Chesapeake Bay and Virginia Waters Clean-Up and Oversight Act) includes a provision for the development of a Bay clean-up plan. Va. Code 62.1-44.117.

Virginia has an excellent track record with regard to its existing trading program. There is no reasonable basis for EPA's rejection of Virginia's approach to expanded trading.

V. EPA'S CHOICE OF DAILY LOADS THAT ARE TOO LOW AND ITS FAILURE TO APPROPRIATELY ADDRESS MS4 ALLOCATIONS IS UNREASONABLE

EPA has not appropriately addressed daily loads in the Bay TMDL. Existing Chesapeake Bay programs were built on the concept of annual load goals. A correct approach on this point is critical for cost-effectiveness and attainability.

It is well established that daily nutrient load variations are environmentally insignificant to the Bay. Furthermore, EPA determined in a 2004 Memorandum,[33] and cited by EPA at Draft TDML, 4-9) that *annual* limits are appropriate in CWA permitting. EPA has stated that:

- The exposure period of concern for nutrient loadings to the Bay and its tidal tributaries is very long;
- The area of concern is far-afield (as opposed to the immediate vicinity of the discharge); and
- The average pollutant load rather than the maximum pollutant load is of concern.

Based on modeling, EPA concluded that "Chesapeake Bay and its tidal tributaries in effect integrate variable point source monthly loads over time, so that as long as a particular annual total load of nitrogen and phosphorous is met, constant or variable intraannual load variation from individual point sources has no effect on water quality in the main bay."[34] According to EPA, "[e]ven a simply steady-state model for permit development such as dividing the annual limit by 12 and establishing that value as the monthly limit is therefore not appropriate."[35]

EPA has repeated its 2004 message in the Draft TMDL:

> Numerous Chesapeake studies show that annually based wastewater treatment nutrient reductions are sufficient to protect Chesapeake Bay water quality (Linker 2003, 2005). The seasonal aspects of the jurisdictions' Chesapeake Bay WQS are due to the presence of the living resources being protected, but annual nutrient and sediment load reductions are most important to achieve and maintain the seasonal water quality criteria, some of which span multiple seasons—open-water, shallow-water bay grass, migratory spawning and nursery… [36]

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[33] Attached hereto as Appendix 12.

[34] 2004 Memorandum at 3.

[35] Id. at 5.

[36] Bay TMDL at 6-6.

In its Draft TMDL, EPA established maximum daily loads for each of the 92 impaired segments in the TMDL, and provided an explanation for how the reader could calculate the seasonal maximum daily load "for any segment, WLA, or LA of interest."[37] EPA also provided annual WLAs and LAs in Draft Appendix Q.

Given that VAMSA members handle stormwater and have no control over when and how much it rains, VAMSA objects to EPA's decision to set daily loads at an impaired segment level (rather than the Bay level only), and to establish daily loads based upon the 95% percentile of daily loads.[38] This means that, even if the TMDL were fully achieved, and the modeling has perfectly captured flows, the daily maximum load would be "violated" 5% of the time, or approximately one day out of every twenty.

This methodology would not be as critical if EPA had clearly stated that it would not be using daily WLAs for permitting or compliance purposes for regulated sources. This is highly problematic and inappropriate given the fact that the compliance standard for MS4s per the CWA is "MEP" (maximum extent practicable) and not compliance with a daily numeric loading.

For these reasons, EPA should revise its Draft TMDL to clearly state that daily loads will not be the yardstick against which MS4 compliance is measured, and further, that MS4s will not be required to comply with any numeric allocations found in the Draft TMDL (even if they are provided in aggregated form). This should be clear in the body of the TMDL itself (e.g., in Section 6) and in all appendices that reference daily loads.

VI. OTHER ISSUES

A. EPA's Approach to James River Chlorophyll-*a* is Unreasonable

In the Draft TMDL, EPA has proposed drastic cuts to the James River allocations. This is the result of a remarkable confluence of technical and policy problems: an unstable, poorly-calibrated model forcibly applied to a scientifically dubious standard, itself partially based on prior model predictions of attainment under a completely different loading scenario. EPA has failed to offer a reasoned explanation for using the chlorophyll-*a* criteria as the basis for James River allocations in light of these unresolved issues. EPA's Draft TMDL is also missing evidence that there would be any quantifiable water quality benefit from the billions of dollars that would be required to comply with the allocations. EPA's determinations on this issue are unreasonable and arbitrary and capricious. For a more detailed discussion of VAMSA's concerns with regard to this issue, see Appendix 13.

B. EPA's Bay Model Is Flawed

EPA expects VAMSA members (and others) to comply with an extraordinarily expensive and operationally cumbersome clean-up plan. However, EPA itself has not fulfilled its obligation to

[37] Draft TMDL at 6-18.

[38] Draft TMDL at 6-18.

ensure that its modeling framework is adequate to support its TMDL and the accompanying WLAs and LAs. If EPA presses forward with finalizing the TMDL over the objections of Bay dischargers and interested stakeholders, despite the faulty model that it has put forth in support of its TMDL, EPA's decision to do so will be arbitrary and capricious.

Like any model, EPA's Bay model is a highly imperfect representation of reality. Over time, EPA has inappropriately shifted to using it in ways that are beyond its capabilities (*e.g.*, predicting D.O. concentrations and non-attainment rates in specific segments to the single percentage point level under far-reaching management scenarios). This has resulted in wide swings in predicted loads and goals with each major model version. VAMSA believes that this instability will continue to occur in the future as the model is periodically modified.

VAMSA objects to overreliance on unstable models to the single percentage point of output, such that environmental policies are undermined with each new model run. A full discussion of VAMSA's concerns with regard to the model is attached hereto as Appendix 14. Although VAMSA generally concurs with EPA's critical period and the use of an implicit margin of safety, there are a number of problematic modeling issues that should cause EPA to shy away from major disruptions to state regulations/policy on the basis of single-digit shifts in model output, including:

- *Lack of full model validation and peer review*
- *The model is being extrapolated beyond the observed range of management controls and living resources*
- *An estimate of model uncertainty should be used to determine the essential equivalence of model scenarios*
- *Inaccuracy of groundwater inputs*
- *Lack of criteria for acceptance of model predictions*
- *Poor chlorophyll-a calibration*
- *Instability and inaccuracy in urban land use assumptions*
- *Missing point sources*
- *Inappropriate application of watershed model to local level*
- *Overparamterized modeling framework*
- *Inconsistent watershed model results*

Each of these is explained in greater detail in Appendix 14.

C. EPA's Backstops Eliminate Planned Agricultural Load Reductions Despite Those Controls Being Among the Most Cost-Effective Measures for Improvement

Section 6 of the Draft TMDL document describes EPA's allocation method for relating relative impact to needed controls. The methodology recognizes that nonpoint sources cannot attain the same levels of control as point sources, and calls for 55-75% of E3 nitrogen controls from nonpoint sources such as agriculture. However, EPA's "backstop" allocations appear to have been accompanied by increases in allocations to nonpoint sources, such that agriculture in many basins fall well short of the intended level of nitrogen control. In so doing, EPA has dispensed

with the fairness/equity concepts developed by its own TMDL work group, and shifted implementation away from the most cost-effective, environmentally beneficial practices.

Overall, EPA's Draft TMDL appears to put Virginia agriculture at a 48% level of nitrogen control (relative to E3), well below the 55-75% level indicated by the relative-effectiveness allocation methodology and far short of controls called for in both Virginia's Tributary Strategy and Draft WIP (Figure 1). This is partly driven by the lower levels of effort in the Potomac River Basin (51%), but primarily driven by an extraordinarily low (17%) level of effort for the James River Basin, which is akin to the 2009 progress levels (Figure 2). VAMSA fails to comprehend how EPA can make deep and costly cuts to other allocations in the James River Basin while concluding that agriculture requires no further improvements in this basin.

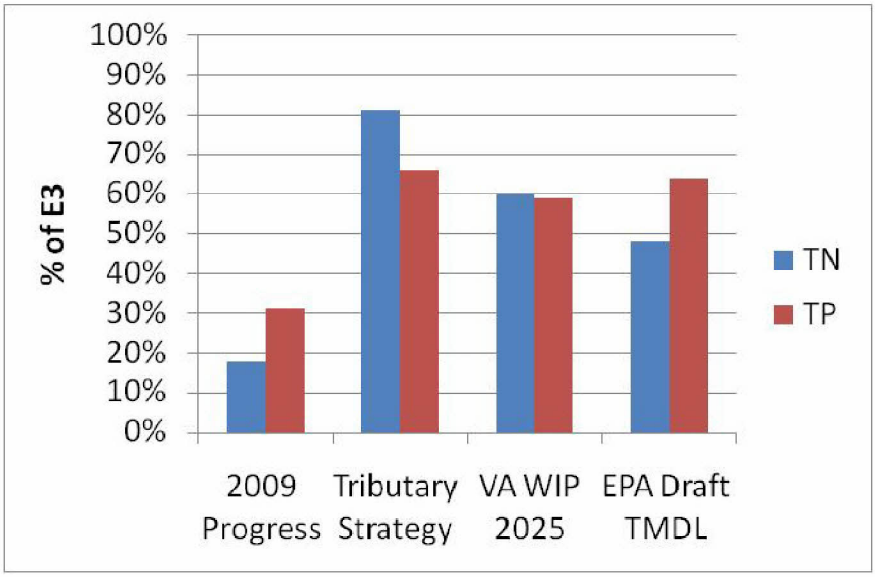

Figure 1: Comparison of agricultural controls among model scenarios

Agricultural management practices include most of the practices that the EPA and others (*e.g.*, Chesapeake Bay Commission, 2004) have identified as the most-cost effective, including nutrient management, conservation tillage, cover crops, and riparian buffers. Relative to many urban and wastewater-based practices, these practices provide high levels of ancillary environmental benefits such as wildlife habitat, stream habitat protection, flood control, and greenhouse gas reduction. To illustrate these points, Appendix 5 presents a case study of alternative nutrient controls for the York River basin using the *BMP Benefit Planner* ver. 1.1.[39]

[39] Malcolm Pirnie, Inc., working on behalf of VAMWA, has developed a spreadsheet based model to compare implementation scenarios with regard to environmental sustainability and cost effectiveness. More specifically, the *BMP Benefit Planner* ver. 1.1 considers energy usage, indirect and direct GHG emissions, carbon sequestration, costs (*i.e.*, capital, operations and maintenance, annualized), and other ancillary benefits (*i.e.*, wildlife habitat,

The case study demonstrates that the D.O.-based overall loading goal can be achieved in a much more cost-effective, environmentally beneficial manner by a different combination of point and nonpoint source controls than reflected in the draft TMDL allocations. VAMSA is providing this example not because we agree with the specific inputs (in particular the urban stormwater aspects), but to make the general point that it is possible to derive a greater environmental benefit at a lower cost if flexibility is allowed in the TMDL. EPA should consider these types of cost issues and options before it finalizes the Bay TMDL. To do otherwise is indefensible.

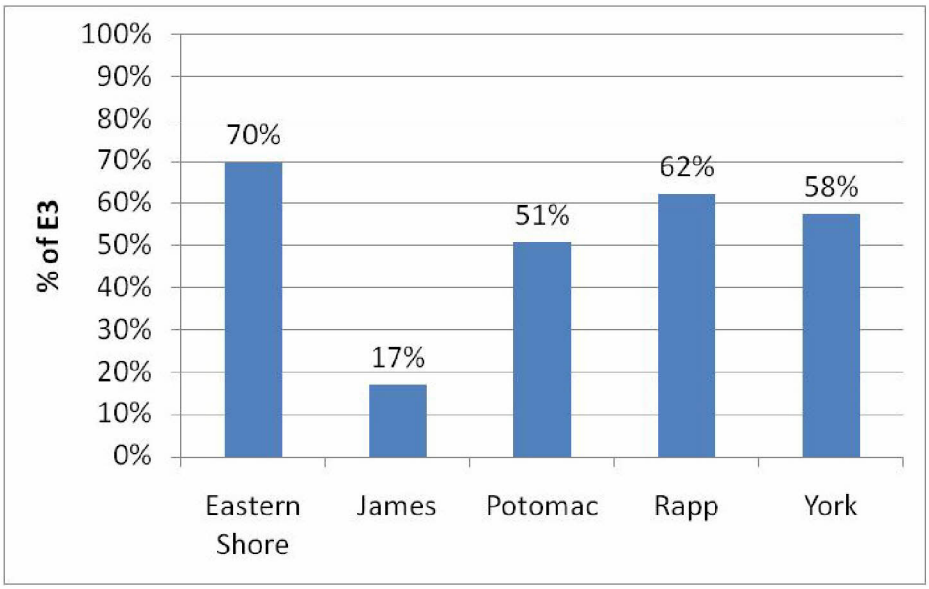

Figure 2: Comparison of agricultural nitrogen controls among basins for EPA's proposed TMDL scenario

VAMSA expects EPA to allocate point and nonpoint sources in an equitable manner that requires a high level of effort from both sectors. In particular, EPA must remedy the low level of agricultural controls proposed for the James River basin, consistent with the widespread understanding that the agricultural sector has abundant opportunities for improvement and cost-effective load reductions.

D. EPA's View Of Relative Effectiveness Is Incorrect

The James and York Rivers have an insignificant effect on Chesapeake Bay D.O. In the 2003 allocation effort, allocations for the James and York River basins were established at "Tributary Strategy" loadings in recognition of the fact that the nutrient loadings for these basins did not significantly influence the mainstem D.O. conditions at segment CB4 and, further, that additional nutrient controls (point and non-point) were warranted for local water quality needs only. This

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instream habitat, aesthetics, public health, flood hazard mitigation, and groundwater re-charge and base-flow protection). The model addresses a number of common management practices involving wastewater upgrades and various agricultural and urban practices.

was a fundamental assumption of the 2005 Virginia Tributary Strategies. In 2009, the impact of nutrient reductions on improving mid-Bay D.O. were re-evaluated for the basins with a different approach taken to assess the "relative effectiveness." VAMSA disagrees with the conclusions EPA reached on this point.

Furthermore, Rappahannock loads are small in relation to other rivers. EPA's TMDL should, but currently does not, appropriately reflect this point.

VAMSA's full discussion on relative effectiveness is provided as Appendix 13.

E. EPA's Failure to Explicitly Include Filter Feeders and Alternative Technologies in the Bay TMDL is Unreasonable

Various studies and the Bay Program's own modeling efforts have demonstrated that increase biomass of oysters and menhaden have the potential to cause measureable improvements in dissolved oxygen, water clarity, and chlorophyll-*a*. Improvements in these living resources are among the Bay partner's most important goals, and their water quality benefits should be fully considered in the TMDL process. VAMSA suggests that EPA either (a) adopt nutrient and sediment loading caps that implicitly consider the benefits of filter feeder improvements; (2) explicitly assign a certain proportion of the required load reduction to filter feeder restoration; or (3) allow filter feeder restoration to result in the availability of nutrient credits to offset other sources.

EPA's Draft TMDL is inconsistent with these recommendations in the Draft TMDL:

> EPA is basing the TMDL on the current assimilative capacity of filter feeders at existing populations built into the calibration of the oyster filter feeding submodel…Potential future changes would not be accounted for in the Bay TMDL. If future monitoring data indicate an increase in the filter feeder population, the appropriate jurisdiction's 2-year milestones delivered load reductions can be adjusted accordingly….[40]

EPA's decision is inappropriate. Oyster farming and aquaculture show real promise. In mid-October, 2010, several news outlets reported the formation of the State's first oyster cooperative, Oyster Company of Virginia. A private company formed a cooperative that will allow Virginia's watermen to lease bottomland from Virginia, plant, grow, harvest and sell oysters. Profits will be plowed back to fuel the endeavor. Although this is project is small in scope at this point, it is an important first step, and an excellent example of what Virginians could do to foster aquaculture. These types of efforts should be considered as a part of this TMDL.[41]

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[40] Draft TMDL at 10-8.

[41] Note that, according to news reports, the cooperative "…plans to lobby state and federal officials to include their efforts in the "pollution diet" the U.S. Environmental Protection Agency is drafting for the bay." Daily Press, Oct. 13, 2010. Attached as Appendix 15.

In addition, VAMSA supports EPA's efforts to consider the role of Atlantic menhaden in relation to management of chlorophyll-*a*.[42] Recent modeling work has shown that their migration into the tributaries and associated consumption of algae has the potential to affect chlorophyll-*a* and associated compliance with the standards. Although menhaden stocks do not appear to dramatically reduce chlorophyll (as long term averages) their incremental effects are considered comparable to nutrient reduction. VAMSA recommends that additional analyses be conducted to evaluate menhaden effects on seasonal peaks and/or worst years in the record. Further, additional modeling enhancements should be made such that the menhaden migration and residence time varies according to a food gradient. A number of papers indicate that menhaden consumption of algae increases in areas with higher chlorophyll-*a*. This is logical since the species would remain longer in an area with greater availability of food. Because the model does not presently capture these foraging effects the available reductions in chlorophyll due to menhaden (especially during bloom conditions) could be under-estimated.

In addition to filter feeders, VAMSA also recommends that some portion of future reductions needed to meet water quality goals should be assigned to technological advancements, such as the Algal Turf Scrubber® ("ATS") and floating wetlands. Although these alternative technologies may not be ready for full deployment Bay-wide, EPA should acknowledge and encourage their possible future use in the Bay TMDL, including assisting with funding, to encourage research and development. Spending money on research that could make a major dent in clean-up efforts is far preferable to spending money on expensive MS4 retrofits.

EPA has established an extraordinarily aggressive approach in its Draft TMDL, but it has not left any room for the natural progression of technology—technology that could greatly assist in making nutrient and sediment reductions in lieu of expensive additional POTW upgrades.

For these reasons, EPA should revise its Draft TMDL to assign some portion of future reductions to filter feeders and alternative technologies.

F. EPA's Failure to Aggressively Target Air Deposition Is Unreasonable

CBPO has estimated that atmospheric sources account for about **one third** of the nitrogen that reaches the Bay, and the majority of this load originates from outside the Chesapeake Bay watershed. CBPO has developed airshed model scenarios representing various levels of atmospheric load reduction. Given the magnitude of the load derived from atmospheric sources, it is critical that these sources bear a proportional operational and financial responsibility for load reduction, and other sectors not be negatively impacted due to lack of atmospheric load reductions. This may require the CBPO to model and pursue regulatory strategies that are beyond existing or proposed regulations, including atmospheric controls specifically targeted toward water quality protection.

EPA's Draft TMDL is lacking with regard to air deposition, and EPA is being complacent in aggressively chasing down additional reductions from this key source sector. EPA has lackadaisically accepted what other programs are planning for air pollution reductions as good

[42] See also discussion of menhaden at Appendix 13 (referenced in Section VI(A) above).

enough. In addition, EPA's decision to require Virginians to clean up nutrients that are deposited on our land from states outside the Watershed begs for a better approach to source reductions.

G. The American Canoe and Kingman Park Consent Decrees Do Not Address Virginia Chlorophyll-*a*

EPA continues to assert in it must complete the Bay TMDL by 2011 (the December, 2010 deadline is a self-imposed acceleration) because of two consent decrees issued in the late 1990/early 2000 timeframe, American Canoe Association, Inc. v. EPA, Civil Action No. 98-99-A (E.D. Va. 1999)[43] and Kingman Park Civic Association v. EPA, Case No. 1:98CV00758 (E.D. Va. 2000). Draft TMDL at 1-14 – 1-16.

VAMSA submits that EPA's obligations to develop a TMDL by May, 2011 do not extend to establishing loadings on the James River for chlorophyll-*a*. As the earlier discussion of the history of the establishment of the standard (see Section VI(A) above) illustrates, the James River chlorophyll-*a* standard was not even adopted until 2005. In contrast, the American Canoe Consent Decree was signed and filed in Federal Court in 1999 and covers TMDLs on the then-existing 1998/99 303(d) list for Virginia. It is therefore impossible that EPA's obligation from the American Canoe Consent Decree extends to chlorophyll-*a* on the James given that the standard did not even come into existence until 6 years later. Although EPA has wrapped James chlorophyll up into this TMDL, it is not obligated to do so, and should not have done so in light of the major concerns expressed regarding the existing standard.

[43] Attached hereto as Appendix 16.