

Comment Response Document
Regarding the Total Maximum Daily Loads of Sediment/Total Suspended Solids in the Anacostia River Watershed, Montgomery and Prince George's Counties, Maryland and The District of Columbia

The Maryland Department of the Environment (MDE) and The District Department of the Environment (DDOE) have conducted a public review of the proposed Total Maximum Daily Loads (TMDLs) of Sediment in the Anacostia River Watershed, Montgomery and Prince George's Counties, Maryland and The District of Columbia. The public comment period was open from April 6, 2007 through May 7, 2007. DDOE and MDE received eight sets of written comments. Many of the comments were directed specifically to a particular jurisdiction, while others are applicable to both jurisdictions. Of the latter, either a single response is given jointly for both, or, where the responses of the jurisdictions differ, separate responses are provided for each.

Below is a list of commentors, their affiliation, the date comments were submitted, and the numbered references to the comments submitted. In the pages that follow, comments are summarized and listed with MDE's and DDOE's responses.

In addition to the comments below, a letter was received after the close of the public comment period from Mr. Jerry Johnson, General Manager of the District of Columbia Water and Sewer Authority (DC WASA), dated June 20, 2007, and addressed to EPA Region III and DDOE. The letter requests a meeting with EPA and DDOE to discuss the ramifications of the TMDL for DC WASA's CSO Long Term Control Plan.

List of Commentors

Author	Affiliation	Date	Comment Number
Dan Smith	Anacostia Watershed Citizens Advisory Committee (AWCAC) (with AWS and Friends of Pope Branch)	May 7, 2007	1 through 3
Robert Boone	Anacostia Watershed Society (AWS)	May 7, 2007	4 through 19
Fariba Kassiri	Montgomery County Department of Environmental Protection	May 7, 2007	20 through 34
Jennifer C. Chavez David S. Baron	Earthjustice (on behalf of Friends of Earth, National Resources Defense Council and Anacostia Riverkeeper)	May 7, 2007	35 through 44
Diane M. Cameron	Audubon Naturalist Society of the Central Atlantic States, Inc.	May 7, 2007	45 through 47
Brendan Shane	Anacostia Waterfront Corporation	May 7, 2007	48 through 49
Jennifer Ney	Anacostia Community Boathouse Association	May 7, 2007	50
John Dunn	DC Water and Sewer Authority	May 7, 2007	51

Comments and Responses

1. The commentor suggests that use of the word “iterative” to describe an implementation process is inappropriate, since it implies a muddling along with whatever ideas and money we are able to put to the task. Instead, the commentor calls for a far-reaching and comprehensive process that will make major changes from business as usual and will result in substantial investments that give measurable results.

MD Response: Neither the Clean Water Act nor current EPA regulations direct states to develop a detailed implementation plan as part of the TMDL development and approval process. Thus, the development of specific implementation measures is beyond the scope of this process. An iterative approach to implementation, as proposed in the Assurance of Implementation section of the report, would deploy an array of available measures, programs, resources and regulatory actions in a coordinated sequence of operations designed to approximate the desired result more and more closely. Such an approach is a response to the magnitude of the undertaking, recognizing that an 85% reduction of sediment loads will not happen all at once, but rather over time in a staged process.

The implementation plan will be developed through a cooperative effort by State agencies, the local jurisdictions, and the watershed restoration community of advocacy groups, environmental organizations, citizen action coalitions, stakeholders and interested members of the public.

Maryland has included TMDLs in all MS4 permits since 2005. However, comprehensive watershed assessment and restoration requirements were established in all permitted localities beginning in 1999. Through watershed planning and implementation efforts established through National Pollutant Discharge Elimination System (NPDES) municipal separate storm sewer system (MS4) permits, the local governments of Prince George’s and Montgomery Counties are well-suited for achieving waste load allocations (WLAs) associated with sediment in the Anacostia River. Stormwater best management practices (BMPs) and programs implemented as required by MS4 permits shall be consistent with available WLAs developed under the TMDL.

Watershed assessments include: determining water quality conditions, identifying and ranking water quality problems, identifying all structural and nonstructural water quality improvement opportunities, conducting visual watershed inspections, specifying how restoration efforts are monitored, and providing estimated costs and detailed implementation schedules for restoration work. The Anacostia Watershed Assessment conducted by Prince George’s County in conjunction with Maryland Department of Natural Resources and information on Montgomery County’s NPDES stormwater management program can be found at:

http://www.dnr.state.md.us/watersheds/surf/proj/ar_char.html and www.montgomerycountymd.gov/deptmpl.asp?url=/content/dep/NPDES/home.asp , respectively.

Maryland uses the watershed approach in NPDES stormwater permits for achieving water quality because it is comprehensive and efficient. By examining all pollutants including physical and biological impairments at the same time, cost effective control strategies can be developed.

Discussions on implementation planning will begin following approval of the TMDL by EPA.

DC Response: Although it contributes less than six percent of the total estimated sediment loads to the Anacostia River, the District has taken an aggressive approach in dealing with the sediment pollution. In compliance with the MS4 permit requirements, the District has developed a TMDL implementation plan for the MS4 area in the Anacostia watershed for a number of pollutants, including TSS. The plan includes TMDL numeric limits, performance criteria and the near term budget commitments. The plan also outlines a five-year financial plan and a specific activity schedule. Under the MS4 permit, the District has established a regular monitoring program to set baseline conditions and evaluate progress. The District is currently implementing the CSO Long Term Control Plan in the Anacostia watershed costing approximately a billion dollars, which when completed will significantly reduce sediments from the combined sewer area. A number of stream and habitat restoration projects are also being implemented in the watershed under the District's Non-Point Source Management Programs (§319(h)) and Chesapeake Bay Implementation (§117(b)) programs. As discussed with the EPA and MDE during the development of the TMDL, the District of Columbia, Maryland and local jurisdictions will meet to discuss development of an interjurisdictional implementation plan following EPA approval of the TMDL. The District anticipates that a meaningful comprehensive implementation plan for the entire watershed will be developed in the very near future for rapid restoration of the river.

2. The commenter states that whatever implementation process gets defined in the final TMDL, it must be accompanied by an effective control plan, i.e., it must be clear what will be added to the MS4 permits to assure the reductions are achieved and the impairment removed. The commenter adds that these results must be measured in the River, and thus be more than a list of how many BMPs will be put in place. The commenter sees a need for allocations to be broken down by sub-basin; for flow controls in the plan (i.e., requiring counties to shave peaks of storm flows and substantially increase the volume of water retained and treated on site); and for specifying percentage reduction of impervious surface area by certain dates and by sub-basin.

MD Response: See Response to Comment #1. There is insufficient monitoring data available to break down the allocations by sub-basin. It will require additional time and financial resources to collect such information, which perhaps may not be cost-effective for refining implementation plans. As more data are collected in the future, TMDL implementation plans can be developed to effectively target various specific sources with appropriate sediment reduction goals.

DC Response: See DC Response to Comment #1. The District agrees with the commentor. The elements of a plan described in the comment will be included in discussions on development of an implementation plan following EPA approval of the TMDL.

3. The commentor states that control plans and permit limits are of no value without a plan to provide financing to accomplish the goals, noting that much of the cost burden of sediment load reduction will be borne by county taxpayers. A finance strategy must be part of a control plan which is added to the MS4 permit to provide assurance that far-reaching changes in stormwater management can be accomplished.

MD Response: See Response to Comment #1.

DC Response: The District fully agrees, and the development of a financial plan will be part of the discussion on development of an implementation plan following approval of the TMDL. Also see DC Response to Comment #1.

4. The commentor states that the Assurance of Implementation section does not assure the public that implementation of this TMDL will be effective and enable restoration of the Anacostia River. The commentor believes that the Assurances “chapter” requires a major revision to include specific activities that will be necessary—the mere recitation of policies and programs is not sufficient.

MD Response: See Response to Comment #1. The Assurance of Implementation Section of the TMDL is intended to provide an overview of the programs and resources available to the State and to local jurisdictions that will support and enable the achievement of the specific goals of an implementation plan. The Assurance section also acknowledges the many ongoing programs and activities that constitute real progress toward the goal of water quality restoration and protection, progress that the implementation plan will undoubtedly build on.

DC Response: The Assurance of Implementation Section of the TMDL is intended to provide an overview of the programs and resources. See DC Responses to Comments #1, #2 and #3.

5. The commentor states that the allocations to the two county MS4 permits need to be broken down to the sub-basin level and included in the MS4 permits as effluent limitations.

MD Response: The TMDLs will be incorporated into the counties’ MS4 permits on the basis of the allocations proposed in the technical memorandum for point sources that accompanies the TMDL report, i.e., for each county’s portion of those subwatersheds covered by their various MS4s. County MS4 permits that incorporate language consistent with the sediment/TSS TMDL for the Anacostia River will cover the entire MS4 area and any requirements therein will be effective throughout that portion of the watershed within the MS4 system. County watershed management plans developed

under the NPDES MS4 program do the refined sub-watershed work that the commentor is asking to be done. NPDES-driven county-wide watershed assessments are conducted in order to determine water quality conditions and prioritize sites for restoration work.

DC Response: The District fully concurs with the commentor.

6. The commentor does not agree with “the open-ended ‘iterative process’ as stated in this draft document” nor with specification of BMPs instead of numerical limits. The commentor states that merely reissuing permits every five years is not a satisfactory plan—permits need numerical allocations broken down by sub-basins. The commentor further states that the Assurances chapter should be modified to include a plan that assures the TMDL will be implemented and water quality standards met, including benchmarks and schedules for achieving the necessary load reductions.

MD Response: See Responses to Comments #1 and #4.

DC Response: The District concurs with the commentor. Also see DC Response to Comment #4.

7. The commentor notes that The District of Columbia is spending billions to restore the Anacostia, has established a Long Term Control Plan for reduction of CSOs, and is implementing a stormwater management plan to control discharge of pollutants from separate storm sewer outfalls. The commentor sees no comparable effort by Maryland and believes the Assurances should contain a commitment by the regulatory agencies to work with the regulated communities to insure that there is adequate funding to implement the reductions.

MD Response: See Responses to Comments #1 and #4.

8. The commentor states that Maryland is a signatory to the Chesapeake Bay Agreement and as such has agreed to major reductions of sediment. The commentor continues that Maryland has not made significant progress in meeting those commitments, and that this TMDL represents an opportunity to make significant progress on one of the worst sediment impaired waterways in the Chesapeake Bay drainage.

MD Response: Establishment of the Anacostia Sediment/TSS TMDL will constitute real progress toward meeting Maryland’s commitments to the Chesapeake Bay Agreement’s goal of major sediment reductions in the Bay.

DC Response: The District agrees that the TMDL provides a real opportunity to develop and implement an effective watershed wide plan that would allow significant reductions of sediments and fast restoration of the river. Also see DC Responses to Comments #1, #2 and #3.

9. The commentor cites the TMDL document: *Additionally, for existing development, MDE’s NPDES stormwater permits require watershed assessments and restoration based*

on impervious surface area. Currently, Prince George's and Montgomery Counties are required to restore 10% of their impervious areas.

The commentor notes that the Montgomery County Stormwater Partners Network has shared with MDE its critique of the Montgomery County MS4 permit and its 12-point plan for a revised permit. The commentor states that the Network has proposed a more aggressive and more source-based watershed restoration strategy (a copy is included with the comments) with a much stronger emphasis on stormwater management techniques that capture and retain stormwater on-site. The commentor feels the current strategy, giving the lion's share of the budget to end-of-pipe approaches rather than to on-site stormwater management techniques, needs to be significantly revised. The commentor concludes that the Assurances should include an assessment of how much land has been restored in each county and how well the strategy is coping with growth.

MD Response: See Responses to Comments #1 and #4.

- 10.** The commentor again cites the TMDL document: *This altered urban hydrology causes atypically high flows in streams during storms, and atypically low flows during dry periods. The high flows occurring during storm events cause excessive erosion of streambanks and streambeds, leading to the degraded stream channel conditions that can be observed in many areas of the Anacostia watershed today.*

The commentor continues: "Subject to vigorous further debate about the right 'stream restoration investment mix' that combines the currently-favored end-of pipe approach with the source-based on-site LID retrofits, we think that an important role can be played by stream channel restoration techniques. But without further debate informed by data and documented studies from the local, regional, and national stormwater and urban watershed literature, we do not support continued spending on stream channel retrofits – expensive treatments for the symptoms of urban stormwater discharges -- unless a vigorous public and private investment in reducing and 'curing' the source of the problem is made. Given these caveats, we believe Chapter 5 – Assurances, needs to include specific plans and commitments to restore the stream channels so that they are suitable habitat for the aquatic organisms. The Anacostia Watershed Society has been performing a Stream Channel Assessment of the Anacostia River and has prepared a Geo-coded list of photos of severely eroded stream channels in the Anacostia Basin which document the need for restoration. A set of CD's will be transmitted separately."

MD Response: See Responses to Comments #1 and #4.

DC Response: The District believes that a combination of restoration techniques, including stream restoration, that is cost effective and provides for the best habitat and water quality outcomes should be considered. Also see DC Responses to Comments #1, #2 and #3.

- 11.** The commentor cites COMAR 26.08.02.04-1 on anti-degradation requirements and has attached a flow chart for the permitting process under the anti-degradation section. The

commentor believes the Assurances section needs to discuss the issue of growth in the watershed and how that will be considered during the period that the TMDL load allocations have not been achieved. The commentor further states that the projected annual increase in imperviousness should be calculated and measures detailed on how this will be controlled.

MD Response: The referenced section of COMAR does not apply in this watershed, as no waters have been identified or designated as Tier II, or “high quality” waters. See Responses to Comments #1 and #4.

DC Response: The District concurs with the commentor. The elements of a plan described in the comment will be included in discussions on development of an implementation plan following EPA approval of the TMDL.

12. The commentor cites (and includes in an attachment) Tables 3 and 4 from Appendix B of the TMDL document, analyzing the increase in volume and frequency of the flow from impervious areas. The commentor notes that the TMDL calculates the amount of instream erosion from the increased runoff and documents the degradation of the aquatic habitat. The commentor then cites EPA guidance for reviewing and approving TMDLs, which in turn cites the CFR:

“40 C.F.R. 122.44(d)(1)(vii)(B) requires that effluent limits in permits be consistent with ‘the assumptions and requirements of any available wasteload allocation’ in an approved TMDL.”

The commentor continues: “The TMDL clearly delineates the portion of the sediment loads to each of the Maryland MS4s. These instream sediment erosion loads are based upon increased storm water runoff rates from the impervious storm sewered areas. The increased flows are calculated to cause 73 percent of the excess sediment loads.”

The commentor concludes: “We believe that the Montgomery and Prince George’s County permits need to have effluent limits consistent with the assumptions and requirements of the wasteload allocation. This means not only a daily limit for TSS, but also for the flow that generates the TSS. We note that Appendix B, Tables 3 and 4 are the basis for the assumptions of instream erosion rates and the reduction of those erosion rates only occurs if there is a permit limit ‘consistent with the assumptions’. We believe the TMDL needs to provide a daily flow allocation to the two MS4 permits as well as the resulting TSS allocation. The daily flow allocations should be broken down by sub-basins.”

MD Response: MDE considers that the sediment/TSS allocations imposed by the TMDL constitute a surrogate for flow. The applicable sediment-related water quality standard applied in the Anacostia sediment/TSS TMDL is expressed in non-daily terms, i.e., a seasonal average Secchi depth water clarity criterion. Specific stormwater management measures needed to address the TMDL should be discussed during the Implementation Plan development process.

DC Response: The District also considers allocated sediment loads as a surrogate for flow and the TMDL loads can be addressed by a combination of concentration and flow reduction techniques. However, because sediment impairments are mainly due to increased flows and altered hydrology, emphasis must be on flow reduction in the development of the implementation plan.

13. The commentor again cites EPA guidance for reviewing and approving TMDLs:

EPA's 1991 document, Guidance for Water Quality-Based Decisions: The TMDL Process (EPA 440/4-91-001), recommends a monitoring plan to track the effectiveness of a TMDL, particularly when a TMDL involves both point and nonpoint sources, and the WLA is based on an assumption that nonpoint source load reductions will occur. Such a TMDL should provide assurances that nonpoint source controls will achieve expected load reductions and, such TMDL should include a monitoring plan that describes the additional data to be collected to determine if the load reductions provided for in the TMDL are occurring and leading to attainment of water quality standards.

The commentor continues: "Further guidance from EPA was given in the November 2002 'Wayland-Hanlon Memo' (attached). There needs to be developed or a commitment to develop a nonpoint source control plan for the nonpoint sources in the basin as required by the above EPA guidance and a monitoring plan needs to be implemented to determine if the load reductions are occurring."

The commentor concludes that the *Assurances* chapter should specify the monitoring plan for the Montgomery and Prince Georges County permits, and include benchmark dates by which certain levels of reduction should occur and how the monitoring data will determine that satisfactory progress is being made. The commentor adds that the monitoring should go beyond the conventional tallying of BMPs installed and actually be composed of instream measurements of flow and TSS as well as biological parameters.

MD Response: See Responses to Comments #1 and #4.

DC Response: The District concurs with the commentor. The elements of a plan described in the comment will be included in discussions on development of an implementation plan following EPA approval of the TMDL. Also see DC Response to Comment #4.

14. The commentor believes that there is a need to immediately reopen the Prince George's County permit and insert the TSS, flow and bacterial numerical limits. The commentor further states that both permits should be automatically reopened any time there is a new TMDL allocation approved by EPA.

MD Response: It is not MDE policy to automatically reopen permits upon EPA approval of any new TMDL. The incorporation into permits of language consistent with newly established TMDLs is planned for within the 5-year cycle of permitting issuance,

under the authority of MDE's Water Management Administration. When a permit comes due for reissue, new language is negotiated with the counties and a review process is undertaken prior to renewal of the permit. EPA guidance in the Agency's November 2002 memorandum recommends that for NPDES-regulated municipal stormwater discharges, effluent limits should be expressed as best management practices (BMPs) or other similar requirements, rather than as numeric limits. MDE believes Prince George's and Montgomery Counties and all other localities' permits parallel the iterative, adaptive management approach to addressing TMDLs supported by EPA.

DC Response: The District agrees with the commentor.

15. The commentor states that Chapter 5.0 Assurances should be modified to include a commitment to include the following permit conditions into the MS4 permits:

1) Waste Load Allocations (WLAs) must be incorporated on a detailed basis that includes the specific breakdown by watersheds and source categories.

2) A "Stormwater Management, TMDL-WLA Implementation Plan" for meeting these WLAs must be required through the following explicit permit provisions:

a) A set of BMPs selected by the counties for relevance and effectiveness in reducing target pollutant(s); performance efficiencies based on best available technical literature values.

b) Application levels for each BMP or BMP suite, on a watershed-by-watershed basis, and based on ability to meet the TMDLWLA. For nonstructural BMPs, including public education, application levels must also be specific.

c) Pollutant loading reduction benchmarks based on selections, performance efficiencies, and application levels for a) and b) above;

d) Monitoring for effectiveness in reaching the benchmarks and to provide accountability for BMP implementation actions. Should include in-stream water quality monitoring, and documentation of level of effort and implementation achieved;

e) An enforceable timetable with explicit milestones for items a-d above;

f) An adaptive management process for decision making for midcourse corrections in the implementation of the Stormwater Management TMDL-WLA Implementation Plan based on the results of the monitoring.

3) Timetable for the Implementation Plan for each TMDL relevant to this stormwater permit - the Montgomery County NPDES stormwater permit for 2007-2012 should include a requirement for a one-year timetable for the submission, approval, and start of implementation, and two years beyond that for the permittee to meet the TMDL-WLA through their Implementation Plans.

4) The stormwater permit, TMDL section should also include a requirement that the County establish an inclusive public involvement and participation process for the

development and implementation of all TMDL Implementation Plans required by this permit.

5) The county stormwater NPDES permit must also address the problem of new sources of pollution that threaten to further degrade or thwart the restoration progress of all impaired waters, both those that have been subjected to TMDL plans and those listed as impaired but not yet subject to a TMDL. Where waterbodies are already impaired by stormwater or pollutants conveyed by stormwater, any and all new development must be considered new discharges of stormwater pollution that must not be authorized unless they can be designed in such a manner so as not to add to that impairment. The county should be required to develop a specific plan and criteria for ensuring that all new development and redevelopment within the county complies with this requirement.

MD Response: See Responses to Comments #1 and 4.

DC Response: The District concurs with the commentor on the above issues. See DC Responses to Comments #1 and #4.

16. The commentor states that all permits, including general construction permits, need to include control measures for preventing trash and litter from entering the Anacostia River.

MD & DC Response: Discussions are underway among inter-jurisdictional parties and EPA to develop a separate trash TMDL and implementation plan for the Anacostia.

17. The commentor notes that most of the current BMP technology is based upon an average size of particle removal and is less efficient when dealing with the smaller grain sizes. The commentor believes that Maryland and DC need to review their BMP Guidance manuals and work on selecting those BMPs that provide high efficiencies for small particles. The commentor notes that DC is upgrading their BMP manual and believes there is room for improvement in the areas of fine sediment retention and flow retention by both DC and Maryland.

MD Response: Maryland BMPs are not based on particle size. The State's Stormwater Management program is based on unified sizing criteria. These volumes address water recharge, water quality, channel protection, and flood protection. The more efficiently stormwater runoff is slowed, retained, and filtered, the more effectively all-sized particles and pollutants are removed from stormwater runoff. Maryland's Stormwater Management Act of 2007 will help to encourage these practices to the maximum extent practicable.

DC Response: The District has drafted revised storm water management regulations that puts a major emphasis on filtering practices and green technology that will further enhance the removal efficiency of small particles in storm water runoff. In addition to conventional BMPs, the District has been encouraging the installation of unique BMPs such as the confined sand filter systems which research have shown to have up to 88%

efficiency for sediment removal. DDOE will consider BMPs that would allow higher removal efficiencies for sediment and fine particles in the BMP manual as it is updated.

18. The commentor cites the TMDL document:

Further, MD's tidal numeric water clarity criterion is already met, with the current loads, for the time periods examined in this study.

The commentor notes that the criterion is based upon achieving a net growth of SAV and questions whether any SAV was observed growing. The commentor adds that data from the DC SAV surveys indicate that SAV will not grow in the Anacostia at the MDE WQS criterion of 0.4 meters but instead needs a clarity of 0.8 meters. The commentor questions whether the MDE WQS is adequate to restore the Anacostia, adding that there should be a discussion of the achievement of the other designated uses of the river such as recreational uses and navigation.

MD Response: Maryland adopted the EPA Chesapeake Bay Program guidance on the appropriate Secchi depth for this water clarity criterion. EPA will be monitoring SAV growth and the criterion may be revised, if necessary. There is much uncertainty around the Secchi depth that is protective of SAV; in many cases, SAV has continued to flourish even when clarity criteria were not met.

19. The commentor cites Figure 13 of the TMDL document, which shows 1995-1997 median growing season Secchi depth in the tidal Anacostia River, predicted by calibrated model vs. observed. The commentor notes that the model over predicts compliance in the Maryland part of the river by a factor of 200%, and asks how this was accounted for in the TMDL. The commentor adds that this indicates that the loading rates used in the model are far below those experienced in reality or else tidal re-suspension has been curtailed.

MD Response: The analysis of observed secchi depths demonstrates that Maryland's standards for water clarity are being met in Maryland's portion of the tidal Anacostia, regardless of the model's predictions. The oversimulation of secchi depths by the model was therefore not a factor in determining that Maryland's water quality standards are currently met. The model's oversimulation of secchi depths in Segment 3, which includes the Bladensburg Marina, is not likely to be a function of undersimulating loads or undersimulating resuspension in general, but of some local factors not accounted for in the model. Daily sediment loads to the tidal Anacostia have been determined using the method described in Appendix A. That method, based on the USGS ESTIMATOR model, is statistically sound and makes the best use of all available monitoring data. The TAM/WASP model does overpredict secchi depths in Segment 3, but as Figure 3-19 in the modeling report (Schultz et al., 2007) shows, the overprediction is an order of magnitude less over than the calibration period (1995-2002) than over the period 1995-1997. As Figure 3-19 also shows, observed secchi depths are 25% lower over the period 1995-1997 than the full calibration period, a puzzling trend not observed at other monitoring locations, except to perhaps a lesser extent in Segment 20. This is to say, the

model reasonably predicts secchi depths over the full calibration period but does not predict as well the uncharacteristic decrease in secchi depths 1995-1997. Overpredicting secchi depths may be due to the large gradient in sand concentrations in the sediment bed in the Maryland portion of the tidal Anacostia. Perhaps the average sand concentration in Segment 3 does not capture the more localized conditions at the monitoring station location. Dredging at the marina may have influenced observations or altered the bed composition on a local scale in the vicinity of the monitoring station location. In any case, because monitoring data shows that Maryland's water clarity standards are currently met, the model's overprediction of secchi depths in Maryland's portion of the Anacostia was not deemed critical to the performance of the model.

20. The commentor states that the second paragraph on p. vii of the Executive Summary should mention that even though the simulation period is 10-12 years ago, statistical tests on the data showed no significant difference in suspended solids concentrations over the time period 1995-2004.

MD Response: Appendix A discusses the analysis of time trend terms in the ESTIMATOR regression equations. It is explained there that time trend terms were not significant for the Northeast Branch, and the statistically significant time trend term for the Northwest Branch may have been due to the change in laboratory methodology. The stronger claim that there is no statistically significant trend in sediment concentrations over the time period 1995-2004 would take additional analysis. In addition to the change in method, the uneven frequency with which storm samples were collected would have to be taken into account. The validity of the TMDL does not depend on the trend in suspended solids concentrations. Model calibration establishes the link between sediment loads and water quality response. The model was calibrated over a longer and more recent time period, 1995-2002, than the simulation time period of the TMDL. The goal of the TMDL, on the other hand, is to find the sediment loads compatible with water quality standards over a representative hydrological period. The period 1995-1997, which includes wet, dry and average hydrological conditions, is the appropriate simulation period to set the TMDL loads and allocations. Although the level of reduction is measured relative to baseline loads, the sediment loads which meet water quality standards under the TMDL are themselves independent of the baselines loads for 1995-1997.

21. The commentor requests that in the second paragraph of p. xiv, the phrase "high percentages of impervious surface" be corrected to read "uncontrolled or inadequately controlled runoff from high percentages of impervious surfaces."

MD Response: MDE has taken this comment into consideration and the TMDL report has been revised accordingly.

22. The commentor requests that the last line of the second to last paragraph on p. xiv be corrected to read: "Currently, Prince George's and Montgomery Counties are required within each 5-year MS4 Permit term to treat runoff from an area equal to 10% of the County's impervious area that has not been treated to the maximum extent practicable."

MD Response: The MS4 permit language requires Montgomery and Prince George's Counties to restore 10% of the County's impervious surface area, not "an area equal to 10% of the County's impervious surface area."

23. The commentor notes that the document associates erosion and sedimentation with high percentages of "uncontrolled" runoff from impervious surfaces and that changes in flow duration curves for 1939 vs 2002 were used to assign percentage of current sediment loads due to alterations in hydrology. The commentor states that it would be useful to identify the change in percent imperviousness in the watershed over that same period as a benchmark for "disconnected impervious surfaces."

MD Response: MDE has taken this comment into consideration and revised the TMDL report, adding a paragraph at the end of Section 4.2.2 "Non-Tidal Analysis" that references a University of Maryland map that identifies changes in percent imperviousness for certain years over a period from 1915 to 1970, during which most of the urban development and associated alterations in hydrology in the watershed took place.

24. The commentor cites a sentence on p. xv that begins "For example, regular stream assessment and MS4 monitoring" as implying there is much more TSS/sediment data than is really available. The commentor suggests a table be added to the document summarizing data sources for non-tidal [waters], including years collected, number of samples, range of flows captured, etc. (The commentor references Table 4 on p. 14 of the document, a summary of Water Quality data sets for the TMDL development.) The commentor further suggests mentioning that Montgomery County has added a USGS flow gauge on Upper Good Hope and will be adding a long-term USGS gauge on Lower Paint Branch to characterize flow and water chemistry from the County.

MD Response: The sentence cited states that stream assessments, which do not necessarily include water quality monitoring for TSS, and MS4 monitoring, which does include water quality sampling for TSS, are performed regularly by the jurisdictions. The first occurrence of the word "monitoring" has been removed from the sentence for clarity. Appendix A, which describes the use of ESTIMATOR to determine sediment daily loads from the Northeast and Northwest Branches, contains a summary of the available non-tidal monitoring data. Table 1 in Appendix A summarizes non-tidal monitoring studies used in this TMDL. Tables 5 and 6 in Appendix A lists the data from these studies. Figures 1 and 2 in Appendix A (Figures 8 and 9 in the main body of the report) show the relation between observed concentrations and flow for the Northeast and Northwest Branches, respectively. The additional monitoring which Montgomery County is supporting on the Upper Good Hope and Lower Paint Branch has been listed in Table 12.

25. The commentor recommends stating baseline loads in the Executive Summary to emphasize the significant reduction necessary to achieve water clarity standards for DC tidal waters.

MD & DC Response: A statement of the baseline loads has been added to the Executive Summary of the TMDL report accordingly.

26. The commentor also recommends stating in the Executive Summary the percent reductions necessary to achieve the target loads and noting these reductions as potential benchmarks to be achieved during the implementation process along with the need to evaluate the actual non-tidal system response and any accompanying improvements in the tidal system.

MD & DC Response: A statement of the percent reductions has been added to the Executive Summary of the TMDL report accordingly.

27. In Section 2.3.2 on p. 19, second paragraph, which notes that AWS is providing comprehensive documentation of streambank erosion in several tributaries, the commentor recommends also mentioning the considerable efforts by the local jurisdictions and the Council of Governments in already identifying significant areas of erosion, setting priorities for restoration, and projects implemented or being implemented that address these problem areas. (The commentor has included two tables showing projects already completed and provides the web site address for Montgomery County DEP for further information on these efforts.)

MD Response: Additional text acknowledging the referenced efforts by local jurisdictions and the Council of Governments has been inserted into the document accordingly. Montgomery County projects enumerated in tables accompanying these comments have also been acknowledged summarily in Table 12 of the report, with DEP website included.

28. The commentor would like a reference to substantiate the statement in Section 4.5, p. 37, regarding “current monitoring requirements for new development that will improve the accuracy of the streambank load estimates in the future.” The commentor is not aware of any changes in the monitoring requirements for Montgomery County for new development that will provide this data. However, the commentor adds, the DEP is conducting assessments of all its stream restoration projects, including stream geomorphological features, which are expected to provide data on stream stabilization and decreased erosion.

MD Response: The sentence containing the statement on p. 37 of the document cited by the commentor has been deleted and replaced by the following sentence: “As data generated by assessments of stream restoration projects and other monitoring efforts produce more refined estimates of streambank loads in the future, MDE may determine to recalculate the TMDL or reallocate loads within the TMDL.”

29. The commentor notes a “disproportionate amount of information” in the Assurance section (p. 46) on agricultural BMPs, suggesting instead a brief statement that for the limited amount of agricultural land in the watershed there may be some treatment techniques through the Soil Conservation District.

MD Response: The paragraph detailing agricultural BMPs has been revised and abbreviated accordingly.

30. The commentor suggests the fourth paragraph of p. 46 begin “The regulatory agencies in MD and DC will continue to work with” as an acknowledgement of the already existing considerable level of effort through the Anacostia Watershed Partnership. The commentor adds that the paragraph should specify which agencies within MD and DC will have responsibility to assure TMDLs are being met (if not MDE and DCDOE).

MD & DC Response: The sentence has been revised accordingly.

31. On p. 48, third paragraph, the commentor requests clarifying “MS4 monitoring for constituents” as “limited MS4 monitoring for constituents” because it is a very limited dataset.

MD & DC Response: The sentence has been revised accordingly.

32. The commentor asserts that the document should mention WSSC, MNCPPC, and other state and federal agencies not covered under the County’s MS4 permits. The commentor states that MDE has regulatory authority concerning stormwater for these non-County entities; therefore, any sediment loads attributed to runoff from these areas should not be part of the MS4 allocation. Such entities include a number of MNCPPC parks and support facilities, the White Oak Federal Research Center, and all State roads, highways, and associated facilities.

MD Response: MDE has taken this comment into consideration and revised the proposed MS4 waste load allocations (WLA) given in the point sources technical memorandum accordingly. A percentage of the total MS4-WLA has been re-assigned to “Other Stormwater WLA” in an aggregate allocation based on an estimated percentage of impervious surface calculated for significant entities included in this category (i.e., not covered under the counties’ MS4 permits). The remaining MS4-WLA has been re-distributed to each county’s MS4-WLAs for their respective portions of each subwatershed.

33. The commentor states that Table 12 should mention SHA ICC Environmental Stewardship projects in the Anacostia that are being built in addition to any required for mitigation from ICC construction.

MD Response: Table 12 has been revised to include mention of the proposed ICC environmental projects.

34. The commentor states that Table 12 should be expanded to include Montgomery County projects shown in tables accompanying these comments. The commentor further notes that the County is conducting pilot studies within the Anacostia to evaluate the effectiveness of a variety of source control practices, including increased streetsweeping,

storm drain inlet inserts and increased maintenance, LID demonstration projects, and targeted public outreach.

MD Response: The many projects enumerated in the tables accompanying these comments have been acknowledged summarily in Table 12 and the reader directed to the Montgomery County DEP web site for additional information.

35. The commentors state that the Draft TMDL fails to ensure implementation of all applicable water quality standards, including narrative and numeric criteria and designated uses. Noting that the TMDL translates annually-based and seasonally-based numeric water clarity criteria into daily limits, the commentors assert that the TMDL must also address all the other deficiencies that affected the 2002 TMDLs, including the protection of all of the Anacostia's designated uses and water quality criteria impaired by sediment. The commentors continue that the Draft TMDL only purports to implement one designated use – the District's Class C uses relating to protection and propagation of fish, shellfish and wildlife – and aims to do this by means of a single numeric Secchi depth criterion for protection of submerged aquatic vegetation (SAV). The commentors state that there is no evidence in the Draft TMDL that reductions needed to achieve water clarity protective of SAV will also be sufficient to protect other forms of plant and animal life, nor to fully support recreational and aesthetic designated uses, or comport with related narrative criteria which apply to all waters, regardless of designated uses. Moreover, the commentors continue, available information indicates that the proposed limits, under some of the most critical conditions, will not even accomplish what they purport to do, i.e., will fail to achieve applicable water quality criteria for protecting aquatic wildlife and plants.

MD & DC Response: This TMDL is specifically designed to protect aquatic life through the protection of SAVs in the tidal water and protect narrative criteria in MD's non-tidal waters. The Chesapeake Bay Program's research shows SAV beds create rich animal habitats that support the growth of diverse fish and invertebrate populations. MDE and DDOE believe that the 85% reductions of sediment loads called for in the TMDL will significantly improve the water quality and make the river certainly more desirable for other uses such as primary and secondary contact recreation. MDE and DDOE will continue to monitor the water quality as load reductions take place in the watershed. If it is determined through implementation of the TMDL that additional reductions are necessary to attain uses such as primary (swimming) and secondary contact recreation (boating), then the TMDL can be revised and further reductions applied to meet the other applicable water quality standards in the river. Also, see Response to Comment #37.

36. The commentors state that the Draft TMDL fails to implement applicable water quality criteria, i.e., will still allow violations of some water quality criteria designed to protect the river for fish, aquatic wildlife, and recreational and aesthetic enjoyment. The commentors further assert that the Draft TMDL does not even purport to address either the District's narrative water quality criteria or Maryland's water quality standards for turbidity, thus violating CWA and TMDL regulations. Maryland's water quality

standards for turbidity state that “[t]urbidity may not exceed levels detrimental to aquatic life; and [t]urbidity in the surface water resulting from any discharge may not exceed 150 [NTU] units at any time or 50 units as a monthly average.”

MD & DC Response: See Response to Comment #35. The District’s turbidity standard (20 NTU above background) is set to protect water quality from short-term localized impairment such as construction and/or dredging activities. The TMDL is based on a seasonal average of secchi depths. However, in an analysis of Secchi depth vs. NTU (turbidity metric) measurements in the tidal Anacostia from 1995-2002, as shown in the graph attached to this document, it can be seen that generally with a Secchi depth of 0.8 the turbidity levels remain under 20 NTU on a long-term basis. Similarly, the graph indicates MD’s turbidity standards are also generally met when the 0.8 Secchi depth criterion is attained.

37. The commentors state that the proposed TMDLs, based solely on seasonal criteria for protecting SAV, will allow violations of other water quality standards (protecting waters for swimming, boating and aesthetic enjoyment), and, as seasonal average limits, do not ensure water quality standards that require compliance on a daily basis are met on each day.

MD & DC Response: Each TMDL is developed to protect specific criteria for different designated uses. All impairments will in time be addressed when the TMDLs being planned and developed for them are completed. All of the designated uses in the river will be protected as the applicable water quality standards are met through the implementation of those TMDLs. Also, see Response to Comment #35.

The daily loads developed for this TMDL are based on seasonal and annual loading caps, which in turn are based on a seasonal average criterion. The daily loads reflect the extreme variability of conditions in the river and allow for possible high incursions of sediment on days where extremely high flow conditions prevail. Nevertheless, the range of daily loads must *generally* meet standards from day to day, because they must, over the course of a given growing season and year, *also* meet the seasonal and annual loading caps determined to protect water clarity in the long term.

38. The final TMDL must discuss whether the SAV species listed on page 18 of the Draft TMDL are native or invasive species, and analyze whether the TMDLs will cause unintended increased proliferation of such invasive species.

MD & DC Response: Wild celery, coontail and water stargrass are native species; hydrilla and milfoil are invasive. Questions concerning the consequences of increased growth of these various species of SAV due to reduction of sediment/TSS loads are beyond the scope of the TMDL, the intention of which is to protect SAV in general as an integral part of the overall health of the aquatic life of the river.

39. The commentors state that the maximum daily load limits for critical periods proposed in the Draft TMDL are so enormous they cannot possibly ensure implementation of all

applicable water quality standards. The document fails to provide adequate information on, or a reasoned explanation of, predicted water quality conditions under the proposed daily TMDLs in terms of TSS concentration, turbidity, aesthetic quality, or secchi depth. The commentors cite a memorandum of Environmental Consultant Barry Sulkin, included with their comments as “Exhibit 6.” Mr. Sulkin converted the flow-based maximum daily loads in the document into TSS concentrations, which he then translated into NTUs (the metric for turbidity). Based on the results, the commentors calculate that the proposed daily maximum wasteload allocations will allow major daily violations of several applicable water quality standards, especially under critical conditions when the river is subject to heavy flows, thus the Draft TMDL violates the CWA and regulations.

MD & DC Response: The maximum daily loads have been developed on the basis of the TAM/WASP model simulation of the TMDL Scenario. The proposed daily maximum wasteload allocations, taken together with the maximum average annual and growing season wasteload allocations, have been demonstrated to meet the applicable water quality standards for water clarity by the computer simulation of the TMDL Scenario. Water clarity standards have been expressed in terms of secchi depth. The relation between TSS concentrations and secchi depth has been addressed in Sections 4.2.1 of the TMDL. The response to Comment #36 has addressed the relation between clarity standards and turbidity. Although aesthetic quality cannot be addressed quantitatively, the implementation of the sediment TMDL, in combination with the forthcoming nutrient and BOD TMDLs, will provide water quality necessary for a healthy aquatic ecosystem that most likely would meet the goals of aesthetic quality. The proposed TMDL allocations do not violate the CWA or any existing water quality regulations of Maryland or the District of Columbia.

40. The commentors state that the TMDLs fail to provide an adequate margin of safety, i.e., the claim of an “implicit” margin of safety is both legally insufficient and arbitrary (neither measurable nor verifiable). Adequacy is not provable because there is no analysis or explanation connecting the existing lack of knowledge with the claimed margin of safety.

MD & DC Response: TMDLs are required to include a margin of safety (MOS) to account for uncertainties in a manner that is conservative toward protecting the environment. There are no strict guidelines or methodologies provided by the EPA for selecting a MOS, except to suggest that a MOS may be an explicit value held aside or conservative assumptions built into the analysis. In this TMDL, two mechanisms that are likely to reduce resuspension when sediment loads to the Anacostia are decreased were not modeled: (1) suppression of sediment resuspension by SAV and (2) the suppression of sediment resuspension by increased sediment aging. The first mechanism refers to the fact that, like terrestrial vegetation, SAV can reduce the erosion of sediment by decreasing shear stress and binding sediment to the bottom. The second mechanism refers to the fact that freshly deposited sediment is more easily resuspended, so that a reduction of sediment deposition is likely to increase the aging of bottom sediments. Both these mechanisms are thought to provide significant positive feedback to the effect of reduced sediment loads on water clarity, but are difficult to quantify. Omitting them

from the model conservatively estimates the amount of sediment reduction necessary to meet water quality standards.

41. The commentors state that the TMDLs must allocate to individual tributaries and outfalls, “with sub-allocations for each county and each major subwatershed *within the body of the TMDL document*.” The commentors assert that it is not enough to set forth sub-allocations in an appendix [the technical memorandum]; they must be incorporated into the TMDL document itself.

MD & DC Response: See Response to Comment #43. The sub-allocations for each county and each major subwatershed are provided in the technical memorandum for point sources, which is part of the entire TMDL documentation package that is subject to EPA approval. MDE provides these allocations in separate technical memoranda for practical reasons. In the event that, during implementation, these sub-allocations are found to require revision due to uncertainties in the modeling estimates, in a manner that does not change the overall TMDLs established in the main document, then only the revised technical memorandum will require re-opening for another round of review and approval. MDE’s intent in anticipating such a development is to streamline the process to minimize any hindrance to implementation. The District considers this a valid approach, as any changes in the sub-allocations will have to go through a full-scale review and approval.

42. The commentors state that the daily WLAs must limit flow, not just TSS, to address the fact that the instream sediment and erosion loads are based on increased stormwater runoff from impervious areas.

MD & DC Response: MDE and DDOE consider that the sediment/TSS allocations imposed by the TMDL constitute a surrogate for flow. The TMDL targets, which are expressed in tonnage per day for sediments/TSS, can be achieved by a combination of control strategies for flow and/or sediment reductions such as LIDs, detention basins and streambank stabilization. However, because most of the sediment loads are due to increased flows, emphasis must be on flow reduction in the development of the implementation plan.

43. The commentors take issue with the statement in the Technical Memorandum for Point Sources that “Maryland and DC expressly reserve the right to allocate the loads among different sources in any manner that is reasonably calculated to achieve water quality standards.” The commentors state that this approach conflicts with EPA rules that expressly define a wasteload allocation as the portion of the loading capacity allocated to “one” existing or future point source. The commentors add that the District and Maryland must further allocate to each MS4 outfall.

MD & DC Response: The technical memorandum assigns allocations to specific point sources such as municipal and industrial wastewater treatment plants. For large systems like MS4s, MDE follows EPA guidance from its November 2002 memorandum that recommends expressing the wasteload allocation for stormwater permits as a single number for all discharges. The proposition that assigning allocations to many hundreds,

possibly thousands, of MS4 outfalls would be an effective means of achieving the goals of a TMDL is extremely questionable. The monitoring for compliance scenario implicit in such a notion would likely be well beyond the financial means of even the wealthiest jurisdictions, draining all resources needed to accomplish the implementation of the TMDL and the water quality goals therein.

44. The commentors state that the TMDLs fail to include adequate assurances of implementation. Such assurances, the commentors assert, require a concrete implementation plan that identifies specific actions, timelines, monitoring requirements, and plans for modifying the TMDLs should monitoring later demonstrate that proposed limits are inadequate.

MD Response: See Responses to Comments #1 and #4.

DC Response: As discussed with the EPA and MDE during the development of the TMDL, the District of Columbia, Maryland and local jurisdictions will meet to discuss development of an interjurisdictional implementation plan following EPA approval of the TMDL. Also, see DC Responses to Comments #1, #2, #3 and #4.

45. The commentor states that the draft TMDL does not appear to be based on the most protective endpoints relative to sediment pollution and MDE should examine other endpoints including aquatic life protection turbidity standards.

MD Response: See Responses to Comments #35 and #36.

46. The commentor states that the Assurance section is inadequate and must reflect a full-fledged implementation plan, including detailed requirements for NPDES permittees.

MD Response: See Responses to Comments #1 and #4.

DC Response: See DC Responses to Comments #44 and #15.

47. The commentor states that the proposed Intercounty Connector (ICC) should be included in the TMDL with a specific Wasteload Allocation. Furthermore, the ICC should be separately (individually) permitted under the Clean Water Act section 402(p) (urban stormwater permits). If not, then MDE should re-open the existing statewide stormwater permit (MD0068276) issued to the Maryland State Highway Administration (SHA) in order to insert a specific ICC provision. The provision must include TMDL wasteload allocations and a specific set of actions and deadlines to meet load reductions.

MD Response: The referenced Maryland State Highway Administration (SHA) NPDES stormwater permit, is a programmatic permit that requires SHA to maintain an acceptable stormwater management, illicit connection detection and elimination, erosion and sediment control, and public education and outreach programs. Stormwater best management practices (BMPs) and programs implemented as a result of this permit shall be consistent with available waste load allocations (WLAs) developed under the TMDL.

The ICC project will be regulated through all MDE's relevant environmental programs (e.g., Wetlands and Waterways, Water Quality Certification, Sediment and Stormwater Approval, etc.) and required to be carried out in a manner consistent with the appropriate standards and specifications, regulations, etc., for the design, construction, and maintenance phase of the project. The construction of the ICC will result in a net increase in impervious area of about 1%. The net increase in impervious area has been factored in the WLA under the "Other Regulated Stormwater" in PS Tech Memo. The WLA is sufficient to cover the impacts on the tidal Anacostia River of the three-year construction phase of the ICC, when the delivery factor for the downstream transport of sediment eroded from construction sites is taken into account. The impacts of the ICC on local water quality, both during and after construction, are addressed in the approved Environmental Impact Statement. Also, see revised Table 12 of the TMDL report, which details some of the main features of extensive Environmental Stewardship projects required for mitigation of environmental impacts from ICC construction.

48. The commentor asserts that the Assurance section must identify costs estimates and financing alternatives for implementation, control plans for each source type with benchmarks and verification, and specific roles and actions of each party responsible for implementation of the TMDL.

MD Response: See Response to Comments #1 and #4.

DC Response: See DC Responses to Comments #44 and #15

49. The commentor notes that the draft TMDL identifies broad source categories for urban land and construction sites and estimates current loads allocated to particular subwatersheds. The commentor believes a more detailed analysis of sediment contribution from different types of urban land uses (roads and highways, residential areas, commercial and business centers, etc.) is required to effectively implement stream restoration.

MD & DC Response: The edge-of-stream (EOS) loads from developed land were calibrated to match the average event mean concentration (EMC) of total suspended solids for broad developed land use categories (residential, commercial, and industrial) based on the monitoring performed by Montgomery and Prince George's Counties for their MS4 permits. There is insufficient monitoring data available to further distinguish sediment loading rates for a finer classification of land use categories. A more detailed modeling analysis would require significantly more monitoring data for model calibration and verification. Without data to calibrate and validate the model, allocation to such levels of detail cannot be made with a reasonable uncertainty. It will require additional time and financial resources to collect such information, which perhaps may not be cost-effective for refining the TMDL allocations. As more data is collected in the future, TMDL implementation plans can be developed to effectively target various specific sources with appropriate sediment reduction goals.

50. The commentor, as a representative for ten organizations that regularly use the lower and upper sections of the Anacostia River for non-motorized recreational activity, is very interested in seeing an improvement in water quality and river flow through sediment reduction, soil erosion control and stormwater runoff management. The sediment load caused by pollution and erosion is impairing safe use and enjoyment of the river. The commentor appreciates the attention MDE and DDOE are giving this matter, and looks forward to working with us to restore the river and ensure safe recreational usage and access.

MD & DC Response: See Response to Comment #35.

51. The commentor is concerned about using a different climate period (1995-1997) for this TMDL then the climate period (1988-1990) used to develop WASA's Long Term Control Plan (LTCP) and how that could affect WASA's ability to demonstrate compliance with the LTCP during the post construction monitoring period. The commentor notes that WASA's current permit requires that the CSO controls be assessed against the climate period used to develop the LTCP.

DC Response: DDOE agrees with the suggestion by DCWASA that the permit language could be modified to allow for the results of the monitoring to be used to assess the performance of the CSO controls against predictions established as part of the LTCP and relevant TMDL development.

