-Draft-
Anacostia River TMDL Effort Review Meeting
Meeting Summary
April 3rd, 2006

Meeting Attendance:

Scott Macomber – Maryland Department of the Environment
Dr. Mow-Soung Cheng – Prince George's County Department of Environmental Resources
Dawn Hawkins-Nixon – Prince George's County Department of Environmental Resources
Leonard Schugam – Maryland Department of the Environment
Dinorah Dalmasy – Maryland Department of the Environment
Monir Chowdhury – District of Columbia Department of Health
Diane Cameron – Audubon Naturalist Society / Natural Resources Defense Council
Cherie Schultz – Interstate Commission on the Potomac River Basin
Ross Mandel – Interstate Commission on the Potomac River Basin
Anna Soehl – Maryland Department of the Environment
Meo Curtis – Montgomery County Department of Environmental Protection
Jerusalem Bekele – Resident, District of Columbia
Marian Norris – National Park Service
Melanie Shepherdson – Natural Resources Defense Council
Masaya Maeda - Anacostia Watershed Society
Robert Boone – Anacostia Watershed Society
Larry Silverman – Anacostia Watershed Society
Linda Fennell – Sierra Club
Mark Symborski – Maryland National Capitol Park and Planning Commission
Steve Shofar – Washington Suburban Sanitary Commission
Jim Collier – Anacostia Watershed Citizen's Advisory Committee
Brian Clevenger – Maryland Department of the Environment
Heidi Bonnaffon – Metropolitan Washington Council of Governments
John Galli – Metropolitan Washington Council of Governments
Ted Graham – Metropolitan Washington Council of Governments
Kate Levendosky – Metropolitan Washington Council of Governments

I. Welcome and Introductions

Mr. Scott Macomber began the meeting promptly at 10:00am. All present were asked to introduce themselves to the group.

II. Update on Sediment TMDL Development Methodology

Ms. Cherie Schultz and Mr. Ross Mandel (ICPRB) presented a PowerPoint presentation on the methodology used to develop the sediment TMDL for the Maryland portion of the Anacostia Watershed. Ms. Schultz began the presentation with an overview of sediment-related problems, sediment sources and the TMDL development process. She differentiated between the problems caused by sediment in the non-tidal tributaries, including channel and streambank erosion degrading stream habitat and reducing numbers of sediment-sensitive organisms present, and the water clarity problems in the tidal river, including SAV disappearance due to poor light conditions. Currently, stream channel erosion due to urbanization and altered hydrology (including increases in impervious surfaces), appears to be the largest source of sediment in the Anacostia watershed, with contributions from urban runoff, agricultural runoff and sediment loads from construction sites and surface mines less significant.

The objective of the sediment TMDL is to protect aquatic life in the non-tidal tributaries and to meet MD and DC water clarity standards in the tidal portion of the river. Ms. Schultz indicated that these objectives would be met by reducing solids loads from the major tributaries. By using the watershed model (HSPF) and a reference watershed approach, ICPRB staff will determine the reductions necessary to improve the health of the non-tidal aquatic community to meet water quality standards. Similarly, the tidal water clarity model (TAM/WASP) will be used to determine the reductions necessary to improve water clarity in the tidal river to meet water quality standards. It was noted that the analysis that requires the most stringent reductions in loads would determine the TMDL loads and subsequent allocations.

The ICPRB analysis conducted to quantify the increase in sediment loads caused by altered hydrology due to urbanization was present. A “quantile regression” analysis approach was used to evaluate changes in the daily “flow duration curve” over time and a sediment rating curve to quantify the portion of the sediment load attributable to altered hydrology, they determined that approximately 75% of today’s sediment load is due to altered hydrology.

The modeling analyses used for the Maryland sediment TMDL are similar to those used in past analyses. The non-tidal HSPF model is an upgrade of a model previously used by MDE and the tidal TAM/WASP water clarity model is an upgrade of a model previously used by DCDOH and EPA. However, it was pointed out that the MD sediment TMDL analysis will include a more robust TSS database than past analyses, due to the data obtained from the MDE/PG Co./USGS monitoring stations on the Northwest and Northeast Branches. Additionally, the ICPRB team is also using better analytical tools (e.g., USGS ESTIMATOR model) and a new land use analysis.

Mr. Ross Mandel continued the presentation with a discussion of the non-tidal analysis. He stressed that ultimately, the non-tidal analysis will not be as important as the tidal analysis, because the load reductions necessary to meet the tidal water quality standards will be greater than those for the non-tidal areas. Mr. Scott Macomber said that MDE is striving to meet DC’s water clarity criterion (secchi depth > 0.8m) at the border. Ms Cherie Schultz said that the

difference between MD's water clarity criterion (secchi depth > 0.4m) and the DC criterion is primarily due to the lower average water depth in the Maryland portion of the tidal Anacostia.

The main objectives for the non-tidal HSPF model were to assess sediment loads from various land use categories and to determine TMDL endpoints through a comparison with reference watersheds. The Chesapeake Bay Program's Phase V model and NPDES monitoring data were used to determine sediment loads from different land uses. The contribution of sediment from streambank erosion was estimated by subtracting the amount of sediment contributed by the various land uses (the "edge of stream" load) from the overall estimate of sediment loads developed by the ESTIMATOR model. The amount of erosion in a given stream segment was estimated using a Streambank Erosion Equation developed at Penn State.

The reference watershed approach was used to assess the water quality and develop loads in the watershed. In this approach, TMDL sediment loads are developed based on loads in comparable, reference watersheds, which are not impaired for sediment. The ICPRB team chose the Upper Paint Branch subwatershed as a reference for the other Piedmont subwatersheds (Northwest Branch, Paint Branch), based on its designation as a Special Protection Area and an "aquatic resource of regional importance" and Upper Beaverdam Creek as a reference for the other Coastal Plain subwatersheds (Indian Creek, Northeast Branch, Lower Beaverdam Creek and Watts Branch), based on COG's 2004 Tributary Streambank Erosion Pilot Study. In determining the reference load, the variation in watershed area was taken into account.

The following are the preliminary estimates of sediment load reductions necessary to protect non-tidal water quality. The reductions for Lower Beaverdam Creek and Watts Branch are still under review.

Watershed	**Reduction**
Northwest Branch	32%
Northeast Branch	37%
Lower Beaverdam Creek	35%*
Watts Branch	10%*

Ms. Cherie Schultz continued the presentation with a discussion of the TAM/WASP water clarity model used in the tidal analysis. She said that the model simulates the effect of many factors on water clarity, including sediment and nutrient loads, algae growth, tidal current, sediment settling and re-suspension. The calibration period for the model is from 1999-2001 and the verification period is 1995-1997. Some of the limitations of this model are that it does not consider the effects of "sediment aging" (which may reduce the chance of re-suspension) and does not fully couple the sediment transport model and the algae model.

Ms. Schultz displayed some graphs of the long-term growing season medians (1995-2002) of TSS, turbidity, chlorophyll A, and secchi depth, indicating water quality is most degraded about seven kilometers downstream from the confluence of the Northeast and Northwest Branches.

The draft TMDL scenario results indicate that in order to meet DC's standard for water clarity in the tidal river, an 85-95% reduction in sediment loads and a 30-40% reduction in nutrient loads are necessary. Due to the high amount of reductions needed to meet the DC standard, it appears that the load reductions associated with the attainment of tidal water quality with be more stringent then the reductions needed to attain standards in the non-tidal portion of the watershed.

III. Review of Sediment TMDL Process and Schedule

Mr. Scott Macomber (MDE) indicated that ICPRB is scheduled to submit the draft TMDL report to MDE in two – three weeks. MDE will then release the draft for public comments by June or July. There will be a 30 day public comment period. The comments will then be incorporated into the final TMDL report, which will be submitted to EPA by September 30, 2006.

IV. Overview of Revised Bacteria TMDL

Mr. Scott Macomber and Ms. Dinorah Dalmasy (MDE) presented an overview of the changes that have been made to the Anacostia River Fecal Bacteria TMDL. The TMDL was revised based on comments received from the public during a previous public comment period in the summer of 2005. The revised TMDL is now available for public comment. The principal changes include the incorporation of critical conditions and seasonality into the non-tidal TMDL and the development of a TMDL for the tidal portion of the Anacostia in Maryland.

In revising the non-tidal TMDL, the following six hydrologic conditions were considered.

- High and low flow annual conditions;
- High and low flow seasonal conditions (the period between May 1st and September 30th when water contact recreation is more prevalent);
- 30-day high and 30-day low flow conditions (to be protective of DC waters designated uses).

The bacteria TMDL for the tidal segment in Maryland was developed by subtracting the non-tidal segment allowable load from the total allowable load allocated to Maryland in the DC TMDL. A correlation analysis was also conducted by MDE to relate the different indicator organisms used in the development of the DC TMDL (fecal coliform) and the Maryland TMDL (enterococci). The analysis, based on data collected from designated use I sites in Maryland during late May – September 1999 and 2000, determined that the ratio of 0.34 enterococci to fecal coliform can be used to compare these two indicator organisms in Maryland waters. Mr. Monir Chowdhury asked whether the samples were collected at both fresh and salt water beaches and whether the differences between fresh and salt water sites were considered. Mr. Macomber replied that samples were collected from fresh and salt water beaches. Ms. Dalmasy said that the analysis did not consider the differences between samples collected at freshwater and saltwater sites. Mr. Macomber said that MDE staff can look at the effect of the salinity of the sampling sites on the correlation analysis.

The following are the revised Bacteria TMDL reductions necessary in the non-tidal Anacostia.

Station	% Domestic	% Human	% Livestock	% Wildlife	% Target Reduction
BED0001	98%	98%	98%	81%	91%
INC0030	98%	98%	98%	66%	88%
PNT0001	98%	98%	98%	72%	87%
NEB0002sub	98%	95%	98%	49%	79%
NWA0135	98%	98%	98%	14%	88%
NWA0002sub	98%	98%	98%	53%	78%

The following are the Bacteria TMDL reductions necessary in the tidal Anacostia.

Watershed	% Domestic	% Human	% Livestock	% Wildlife	% Target Reduction
Tidal	99.9%	99.9%	99.9%	88.3%	93.3%

V. Bacteria TMDL Q&A

The following is a summary of the discussion about the revised bacteria TMDL.

- Ms. Diane Cameron (ANS/NRDC) asked whether MDE could share with the public their literature review of pet waste BMP literature. She said that many of the TMDLs around the country are looking at pet waste and asked how the public can work with MDE to ensure that the pet waste contribution is seriously considered.
- Mr. Macomber replied that MDE can certainly share their literature review of pet waste BMPs and said that if the pet waste contribution appears to be a serious issue, then it will be dealt with in the implementation planning process. He said that MDE is not developing the implementation plan, but will be involved in the process.
- In response to questions about tracking implementation success and the MS4 permitting process, Mr. Macomber responded that the county MS4 permits will not include numeric discharge limits, but there will be a transparent process to develop the MS4 permit based on programmatic approaches that are based on the TMDL.
- Mr. Brian Clevenger (MDE) said that it isn't practical to put specific numeric limits into the MS4 permit, because of the cost of monitoring to assess compliance with these limits would be prohibitive toward making progress on implementation.
- Mr. Macomber agreed, saying that if numerical limits are included in the MS4 permits, the counties would have a huge monitoring burden and would need to use most of their limited resources for monitoring rather than program implementation. MDE favors a BMP, programmatic approach.

- Dr. Mow-Soung Cheng (PG-DER) said that the 99.9% reduction is a near impossible goal. He said that Prince George's County would like to do the right thing, but needs an achievable goal to work towards.
- Mr. Jim Collier (AWCAC) said that Maryland needs to develop a good implementation plan to meet the water quality standard and should not be distracted by the magnitude of the necessary reductions. He said that DC went through this TMDL process and had about six months per basin to develop an implementation plan to meet the TMDL. Mr. Collier said that both the MS4 permits and the Long Term Control Plan for CSOs included numerical TMDLs and that Maryland's MS4 permits should include language that is at least as stringent as the language in the DC permits.
- Mr. Macomber said that he recognizes that the reductions may not currently be possible to achieve, but they are simply the reductions necessary to meet the water quality standard. He said that if numerical limits are included in the MS4 permits, they become legally enforceable and the counties could be sued for failure to meet the limits.
- Ms. Diane Cameron said that the EPA has provided guidance in the Wayland-Hanlon memo on incorporating TMDLs into MS4 permits. She said that she doesn't think that MDE's current approach is in line with that EPA guidance. She said that waste load allocations should be included in the TMDL report and an implementation plan should be developed. The implementation plan can be an iterative process, but the counties should be able to show that they are working towards meeting the reductions in the best possible time period.
- Ms. Melanie Shepherdson (NRDC) suggested that the MS4 permits could include a compliance schedule with a phased in approach to meet the reductions.
- Ms. Meo Curtis (MC-DEP) said that an iterative approach to implementation is the only sensible solution. She cited the limitations of the model and the high level of uncertainty in the numbers, and suggested that perhaps the water quality standard is too restrictive.
- Mr. Larry Silverman (AWS) said that stormwater management is another unfunded mandate, but the important thing is that it is a mandate. He said that he doesn't see the problem with putting numbers in the MS4 permits. Mr. Silverman said that groups like the Anacostia Watershed Society can help the counties get more resources to fund the implementation.

Mr. Scott Macomber thanked the attendees for participating in the meeting and said that MDE will consider their comments when completing the final bacteria TMDL report. April 18th is the end of the comment period for the bacteria TMDL.

VI. Adjourn

The meeting was adjourned at 3:00 pm.