

Martin O'Malley, *Governor*
Anthony G. Brown, *Lt. Governor*



James T. Smith, Jr., *Secretary*
Melinda B. Peters, *Administrator*

January 31, 2014

Subject: Maryland State Highway Administration
Chesapeake Bay TMDL Final 2013
Milestone Report

Mr. Tom Thornton
TMDL Technical Review Coordinator
Maryland Department of the Environment
1800 Washington Boulevard, Suite 540
Baltimore, MD 21230-1718

Dear Mr. Thornton:

In response to the document entitled "Next Steps on Maryland's WIP", which was circulated on June 20, 2013, the Maryland State Highway Administration (SHA) is pleased to submit our 2013 Milestone Final Report. This report provides a brief overview of where SHA stands in meeting implementation and programmatic milestone goals, as outlined in the MDE WIP II Appendix E, Maryland State Highway Administration Bay TMDL WIP II Narrative. Overall, SHA is on track to reach its 2017 target reduction goals.

If you have any questions or need any additional information regarding, please contact Ms. Karen Coffman at 410-545-8407 (kcoffman@sha.state.md.us) or me at 410-545-8644 (rshreeve@sha.state.md.us).

Sincerely

A handwritten signature in black ink, appearing to read "Robert Shreeve".

Robert Shreeve, Deputy Director
Office of Environmental Design

Outlined in this document is the Maryland State Highway Administration’s (SHA) 2013 Bay TMDL Milestone Final Report, which includes both MS4 Urban Stormwater BMP and Programmatic Milestones as outlined in the MDE WIP II Appendix E, Maryland State Highway Administration Bay TMDL WIP II Narrative (available on the MDE website).

2013 BMP Milestone Progress

Highlighted in *Table 1* is a summary comparing SHA’s 2013 milestone goals as reported in the SHA WIP II Narrative and SHA’s final 2013 accomplishments. The reported accomplishments are a result of BMP verification standard procedures and tools recently developed and implemented that fall in line with Urban Stormwater Work Group (USWG) BMP protocols. Details of this verification process were provided in SHA’s 2013 Bay Milestone Restoration BMP Progress Report, which was submitted to MDE on September 30, 2013. *Table 1* represents BMPs implemented and field verified as of September 30, 2013.

Table 1: 2013 BMP Milestone Accomplishment

Target Strategy	2013 Goal	2013 Final	Updated Progress to 2013 Goal
Bio Swale	292 DA Ac.	58.91 DA Ac.	24%
Bioretention - A/B Soils		6.54 DA Ac.	
Bioretention - C/D Soils		3.44 DA Ac.	
MS4 Retrofits	273 DA Ac.	NA	0%
Stream Restoration	14,000 LF	17,394 LF	124%
Urban Tree Planting	724 Ac.	499 Ac. Planted	69%
Wet Ponds/Wetlands	12.3 DA Ac.	12.3 DA Ac.	100%
Catch Basin Cleaning¹	7,073,080 lbs	7,809,795 lbs	110%

¹ The goal for catch basin cleaning was based on SHA’s WIP II 2011 Milestone goal, which is to be completed annually. The 2013 Final number reported is the average of 2012 and 2013 loads.

Although construction goals for the bioswales, MS4 retrofits and tree sites were not met, additional stream restoration made up for the difference due to the higher per acre reduction associated with streams over other types of BMPs. Bioswales are being constructed using a fast-track design and construction method under general stormwater and construction activity permits. It is anticipated that the milestone goal for bioswales will be accomplished in early 2014. The MS4 retrofits are conversions of existing BMPs and design-build contracts were advertised for 26 facilities in Anne Arundel, Montgomery and Prince George’s counties that will treat approximately 487 drainage area acres. Notice to proceed for these two contracts were issued in Summer 2013.

Regarding Urban Tree Plantings, the reduced acreage is due to adjustments made resulting from the determination that BMPs located within the Liberty Reservoir watershed will have no effect on pollutant loads reaching the Bay, field site verifications and minor cleanups to the tracking database.



2013 Programmatic Milestone Progress

- 1. Allocate current funding to implementation strategies and assess needs for future milestone funding. Develop implementation plan for future BMPs to become action items as funding becomes available.**

As a result of Federal and State Transportation Trust Funds and House Bill 1515, the Transportation Infrastructure Investment Act of 2013, SHA has been allocated funding to comply with the WIP II. The appropriations are listed in Table 2, below.

Table 2: Programmed Funding by Fiscal Year

State Fiscal Year	2014*	2015**	2016**	2017**	2018**	2019**
Funding	\$34.7 Million	\$45 Million	\$65 Million	\$85 Million	\$100 Million	\$100 Million

**Funding is from the Federal and State Transportation Trust Fund*
***Funding is from the Transportation Infrastructure Investment Act 2013*

Based on the current funding available, SHA is in the process of identifying BMPs for the 2015 milestone. SHA will continue to evaluate and refine this implementation plan as projects move through the process and milestone goals are achieved.

- 2. Develop ‘roadway disconnection’ protocol and obtain approval from MDE of methodology.**

SHA has completed the ‘roadway disconnection’ protocol entitled Protocol for Identification of Existing Water Quality Grass Swales within Maryland State Highway Administration I-70 Corridor and it was approved by MDE April 2013. Two pilot corridors have been evaluated, I-70 and I-95, and BMPs designated based on the findings. We will continue identifying treatment credit within NPDES counties using this protocol.

- 3. Develop and implement program to upgrade outfalls. Obtain full implementation and completion of outfall inspections within MS4 Phase I counties.**

SHA updated our NPDES Standard Procedures to include the latest SHA outfall channel inspection protocol that will help identify potential sites for restoration. Outfalls are being inspected along highway corridors where bioswale projects have been implemented. The new inspection protocol has been incorporated into the cyclical MS4 inspections and to date, over 3,000 outfalls have been assessed. No protocol currently exists to define credits for stabilizing degraded outfalls and this lack of guidance has limited our ability to implement a full program to upgrade outfalls for TMDL credit. We will continue to inspect and assess outfalls for stabilization implementation based on engineering requirements.

- 4. Complete county-level TMDL implementation strategy within MS 4 Phase I and II counties (in cooperation with NPDES MS4 Phase I Permit requirement for TMDL Implementation Plan for SHA). Develop county-level MAST scenarios as needed.**

SHA has developed a draft county level implementation strategy through the use of MAST. This strategy is based on pollutant reduction targets provided by MDE on October 4, 2011. Once SHA's new NPDES MS4 permit is issued by MDE, SHA plans to revise this strategy and solidify a long-term restoration plan within one year of issuance, as outlined in SHA's draft permit. In addition, SHA is in the process of finalizing a data structure and a modeling framework as a basis for scenario development and reporting and it is anticipated that this framework will be used in conjunction with MAST.

- 5. Complete development of programmatic funding and resource needs assessment (program development and implementation staffing/maintenance activities/ dewatering facilities/ equipment acquisition).**

As of March 2013, SHA has consolidated our TMDL Program within the Office of Environmental Design. The purpose of this consolidation is to focus efforts and resources on complying with the requirements of SHA's NPDES MS4 Permit and the Bay TMDL. At this point, key roles and responsibilities have been identified and core staff members are in place. Resource assessments will continue throughout the duration of the TMDL compliance efforts and be adjusted as needs change over time

- 6. Complete development of tracking tools.**

The SHA reviewed existing database schemas for various BMP tracking systems along with MDE's draft reporting geodatabase and other internal reporting requirements. Using this as the base, a needs assessment to identify the necessary requirements was conducted. SHA has prioritized and identified functionality required for each major program component including:

- Planning
- Project Design and Implementation
- Monitoring
- Reporting
- Maintenance

SHA is nearing completion on the design, development and data migration of the TMDL spatial data structure, which houses all TMDL assets and site selection data along with various tabular attributes associated with the spatial data. In addition, SHA has in place the mapping interface through our Enterprise GIS System, which displays the spatial data stored in the TMDL data structure. Over the next six months SHA plans to finalize the following tools/systems, although refinements to these tools/systems will be ongoing:

- Modeling Framework for Scenario Planning
- Editing Widget within SHA's Enterprise GIS System
- Monitoring and Inspection Field Tools
- Site Search and Selection Protocols for Targeted BMPs

7. Quantify maintenance erosion & sediment control and permanent stabilization improvement needs.

SHA has determined that this BMP is not applicable to SHA as it only applies to CSS construction or regulated construction. SHA has since abandoned this implementation strategy.

8. Participate and partner with MDE, and other counties towards development of alternative strategies and establishment of efficiencies for currently known or new BMPs.

As a part of SHA’s newly consolidated TMDL Program, a county coordination team has been developed to focus on relationship building and information sharing. The purpose is to understand the priorities and water quality assessments developed by each county so SHA can better plan and execute effective projects for nutrient and sediment reductions. SHA has met with 9 of the 11 Phase I NPDES counties. Topics discussed at the coordination meetings include:

- County prioritization of watersheds for restoration efforts
- Major areas of development/re-development for future planning efforts
- Potential restoration projects
- Stream monitoring data
- Credit accounting for impervious surfaces
- SHA’s Transportation Alternatives (TA) Program

Table 3 below lists county coordination efforts to date.

Table 3: County Coordination

County	Meeting Dates
Anne Arundel	08/29/13, 10/31/13, 12/19/13
Baltimore	12/16/2013
Carroll	12/13/2013
Cecil	09/23/2013
Charles	10/24/13, 12/18/13
Frederick	
Harford	10/04/2013
Howard	12/04/2013
Montgomery	10/21/13, 01/07/14
Prince George's	12/19/2013
Washington	

In addition, SHA coordinates with MDE regularly. SHA is also in the process of developing a Memorandum of Understanding (MOU) with resource agencies in order to work through the crediting and project review/permitting processes, as needed. See Programmatic Milestone #10 below for information on the development of various MOUs. This effort will be ongoing.

9. Initiate needed research or synthesis efforts.

As discussed above, SHA is in the process of developing a framework for scenario planning. This effort involves literature searches and TMDL document synthesis in order to integrate the Bay reductions with local waterway efforts. Since 2011, SHA has conducted a review and assessment of guidance documents, recommendations from expert panels, MDEs reporting geodatabase, MAST and technical bulletins/memorandums and reports. This information has been the basis for SHA's TMDL efforts to this point and will continue to guide these efforts as new research becomes available. Information derived from this effort includes:

- Estimated BMP Costs
- BMP Removal Rates
- Geographic Needs
- Load Estimating
- BMP Monitoring Requirements
- Local TMDL Requirements

In addition, a study has been initiated to develop methods for determining reduction credits for outfall stabilization by monitoring an outfall stabilization project proposed at I-97 in AA County as a test case. Discussions are also being held with USGS to determine if sediment fingerprinting strategies can be employed to improve stream site selection, design and monitoring as well as watershed-level BMP selection and implementation. A pilot research study is under development.

10. Develop Memorandums of Agreement (MOAs) or general permits with regulatory agencies.

An MOU was executed on June 17, 2013 with the Department of Natural Resources (DNR) to establish a financial agreement and task development framework in order to implement partnership projects. SHA is also in the process of developing a MOU with various environmental resource agencies including: DNR, MDE, ACOE, FWS and EPA, to develop a review framework for TMDL projects. The purpose of this agreement will be to establish time commitments for TMDL project reviewers and a framework for discussing project components, permitting requirements and credit establishment. It is anticipated that this MOU will be executed early 2014.

On March 22, 2012 SHA received approval of general Surface Storage Credit for Water Quality Mitigation on TMDL Legacy Pavement Projects. The standard plan and details under this approval has been applied to bioswale projects.

SHA also initiated dialog with MDE to obtain general stormwater management and erosion and sediment control approval for tree planting projects. This will entail development and submittal of a proposal outlining the conditions and scope of work for this effort.

