



Maryland
Department of
the Environment

Wes Moore, Governor
Aruna Miller, Lt. Governor

Serena McIlwain, Secretary
Suzanne E. Dorsey, Deputy Secretary

January 26, 2024

Ms. Janis Markusic
Watershed Protection and Restoration Program
Anne Arundel County Department of Public Works
2662 Riva Road
Annapolis, MD 21401

Subject: Approval of the Baltimore Harbor Sediment Total Maximum Daily Load (TMDL)
Stormwater Wasteload Allocation (SW-WLA) Implementation Plan

Dear Ms. Markusic:

The Maryland Department of the Environment (Department), Watershed Protection Restoration and Planning Program (WPRPP) has completed a review of the Anne Arundel County TMDL SW-WLA implementation plan for the Baltimore Harbor Sediment TMDL (the Plan). The Department finds that the Plan meets the essential components as required PART IV.F.2 of the County's permit (Permit Number: 20-DP-3316 MD0068306) and is therefore approved. While the plan is of sufficient quality for the County to begin moving forward with the outlined implementation strategies, the Department does have recommendations for improvement, which are outlined in Attachment A to this letter.

The Department recognizes the effort required to implement a successful stormwater management and TMDL implementation program, which is essential in our mutual goal of restoring urban streams and the Chesapeake Bay. The County is commended for its commitment and accomplishments toward this objective. If you have questions, please contact Jonathan Leiman at Jonathan.Leiman@Maryland.gov or 410-537-3169.

Sincerely,

Jeff White, Deputy Manager
Watershed Protection, Restoration, and Planning Program
Water and Science Administration
Maryland Department of the Environment

Attachment A: WPRPP Recommendations for Improvement to the County's Baltimore Harbor Sediment TMDL SW-WLA Plan

Primary Recommendations

1. Collaboration with other local governments and watershed stakeholders is particularly important in order to coordinate methodologies and implementation strategies that will enhance the ability to achieve the sediment TMDL SW-WLA in the Baltimore harbor watershed.
 1. Within the Baltimore Harbor Sediment TMDL there is a significant contribution coming from "Other NPDES Regulated Stormwater" in the watershed (see the Technical Memorandum: Point Sources of Sediment in the Non-Tidal Baltimore Harbor Watershed). MDE WPRPP recommends partnering with these other dischargers, as well as the other local governments in the watershed, to discuss opportunities for innovation and implementation.
 2. An important facet of watershed management is stakeholder involvement. The Maryland Department of Transportation (MDOT) Maryland Port Administration (MPA) is a key stakeholder in the Baltimore Harbor watershed. While both the TMDL and the County's implementation plan were developed for the nontidal Baltimore Harbor watershed, implementation strategies to reduce sediment to the nontidal stream system would have an added benefit of reducing sediment to the downstream tidal waters of Baltimore Harbor. MPA would have particular interest in sediment load reductions to the tidal harbor, and MDE recommends reaching out to MPA to discuss implementation opportunities. Should the County reach out to MPA, MDE asks that the county please provide documentation of this information exchange as part of the Plan. MDE has historically coordinated with MPA on TMDL development and implementation within the Harbor. MPA had significant involvement during the development of the Baltimore Harbor PCB TMDL. Their main involvement was as a stakeholder because of their dredging activities.
 3. Has the County established contact or coordinated with MDOT SHA with regard to this TMDL SW-WLA? If so, this information should be documented in the Plan.
 4. Has the County established contact with the Waterfront Partnership of Baltimore with regard to this TMDL SW-WLA? If so, this information should be included in the Plan.
2. The plan should include specific references and information from the County's Water Resources Element and Water & Sewer Plans. Aligning the elements of these overall County planning documents with the individual Baltimore Harbor Sediment TMDL SW-WLA Plan is crucial to the success of the watershed restoration planning effort.

Secondary Recommendations

3. Is the County aware if other watershed plans exist in the watershed; either generated by a government, utility, or non-governmental entity? If so, MDE WPRPP recommends that this information be included in the plan.
4. MDE recommends that a major element of the implementation strategy for achieving the sediment SW-WLA in the watershed focus on flood control efforts. Sediment reduction is a significant, corollary benefit of flood control efforts; however, it is likely that flood control strategies are more relatable to watershed stakeholders and residents. This would include practices that improve flood resiliency through water retention, infiltration in green spaces and overbuilt well-maintained conveyance systems.
5. The plan should discuss how the highly urban and non-contiguous nature of this watershed, as well as existing technologies, may impact the achievability of the TMDL allocations. MDE WPRPP is available to discuss further, if needed.
6. Have any innovative water retention technologies or structures been considered in the watershed? If so, this information should be documented in the Plan.
7. The County uses a baseline year that is consistent with the TMDL.
8. MDE encourages the County to view their approach to adaptive management in terms of the geomorphic measurements they plan to make, specifically how subwatershed BMP implementation schedules will be supported by geomorphic monitoring for minimum detectable changes (particularly for BMPs associated with relatively large, estimated sediment reductions).
9. Section 1.3: MDE suggests including the Guidance for Developing Local Nutrient and Sediment TMDL (Total Maximum Daily Load) Stormwater Wasteload Allocation (SW-WLA) Watershed Implementation Plans (WIPs) in the plan's guidance document list (https://mde.maryland.gov/programs/water/TMDL/DataCenter/Documents/MDE_Nutrient_Sediment_Guidance_2022.pdf).
10. Section 2.3: The county provides a good presentation and discussion of land-use/land-cover. MDE WPRPP appreciates the impervious surface analysis.
11. Section 3: The County provides a good discussion of the sources of impairment and highlights areas of concern using the results of the 2012 watershed characterization report. A methodology for targeting sources is explicitly stated with stream restoration being the main reduction strategy. The county's justification for relying on stream restoration to meet the TMDL's reduction target is supported.
12. Section 4.1: MDE commends the county for backcasting available land use to quantify its baseline acreage. Backcasting is not required, but it allows for more consistent and accurate model results.
13. Section 4.1: Please note that Tree Canopy over Aggregate Impervious acres should be added to the baseline Aggregate Impervious acres rather than the Turf acres.
14. Section 4.1: "Milestone 1" is defined to include BMPs currently under a design contract that have reached the 30% design stage. Is there an estimated year for implementation for these projects?

15. Sections 5 and 8: Tables clearly report baseline, current progress, and planned implementation load/load reductions.
16. Section 8.3: The County presents a good example of a prioritization framework that also includes preservation. Please further define preservation within the plan.
17. Section 8.4: MDE commends the County's effort to iteratively and adaptively plan for implementation.
18. MDE appreciates the County's planned effort to meet the required TMDL percent reduction.
19. The plan does not clarify if "upland" BMPs are a priority or if stream restoration will proceed without hydrologic controls in upland areas. Please clarify this within the plan.
20. The plan should provide additional clarity on how BMPs are being sited.
21. The individual watershed plans should be used as technical documents that describe implementation efforts to occur during the current permit term as well as upcoming permit terms in the watershed. Please use this information to define who the primary audience of the plan is and why, e.g., the primary watershed stakeholders.
22. Information contained within sections that is not useful for decision making does not need to be included in the plan unless the County has other intentions for including the information. Individual watershed plans should include the technical information necessary to demonstrate quantitative methodologies for decision making in the implementation plan.
23. Data should be succinctly presented so that it is understandable what information is being used for decision making during the implementation process. Documents and data layers being used in the decision-making process should be included as bullet points, so that they can be easily explained in terms of why they are relevant to decision making.
24. "Progress" needs to be defined with greater specificity. The County should be cautious not to lock itself into measuring improvements solely based on projected pollutant loads, thereby limiting the interpretation of progress in terms of water quality monitoring or resource quantity/quality/user experience.
 - a. MDE WPRPP recommends the County revisit the technical components of the "*Watershed Report for Biological Impairment of the Baltimore Harbor Watershed in Baltimore City, Baltimore, and Anne Arundel Counties, Maryland Biological Stressor Identification Analysis Results and Interpretation*", which can be here:
https://mde.maryland.gov/programs/water/TMDL/Baltimore_Harbor_02130903/Baltimore_Harbor_BSID_Report_032814.pdf
25. The designated uses should also be included as a map.
26. Please provide more information on how monitoring data is being used to inform adaptive management actions, particularly as it relates to the BSID metrics. Some examples are provided below:
 1. Is BMP placement being compared to BSID metrics for sediment impairments?
 2. It is useful for Rosgen Level 1 to be explained and defined as a guiding methodology.
 3. How are locations for cross-section measurement being selected?

27. Please include proposed planning horizons/numeric management triggers and their underlying methodologies.
 1. Identify indicators and determine if they are currently meeting goals.
 2. How will goals and progress toward goals be achieved from the perspectives of resource limitations and other external pressures on the watershed, e.g., potential population growth and planned development?
 3. Is the proposed planning horizon the point at which resource improvement is expected? Or is the planning horizon simply based on model accounting?
 4. Please provide a framework, including response actions, if milestones for horizons are not met on time?
28. Is the County aware of the water resource concerns of the watershed residents in the County. If so, WPRPP recommends including this information in the plan.
29. MDE WPRPP recommends that the County include information on the watershed's natural resources of high value within the Plan, if applicable, that the County will look to conserve (for example fisheries, beaches, shellfish, source water/irrigation water protection zones, soils or springs) via sediment reductions associated with the TMDL SW-WLA.
30. Is the County aware of any water resource disputes that exist now or will exist in the future in the watershed? If so, this information should be included in the Plan, and the plan should account for these conflicts potentially impacting the timeline for implementation and measurable improvement.
31. MDE appreciates that the components of the plan are logically ordered based on the progressive development of the plan over time.