STORMWATER MANAGEMENT REPORT

ROUTE NUMBER PROJECT DESCRIPTION AS IT APPEARS IN AD SCHEDULE

COUNTY/IES

SHA Contract No. XX0000000

SHA FMIS No. XX000X00

SHA PRD No. XX-PR-XXXX

INSERT PROJECT LOCATION MAP HERE

***PREPARED BY:***

Maryland State Highway Administration

Office of Highway Development

Highway Design Division

707 North Calvert St.

Baltimore, MD, 21202

***PREPARED FOR:***

Maryland State Highway Administration

Office of Highway Development

Highway Design Division

707 North Calvert St.

Baltimore, MD, 21202

**Date:**

P.E. Seal

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.

License No: 00000 Expiration Date: MM/DD/YYYY

NOTE: Not required for SHA in-house projects.

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* Provided Treatment Template
* Water Quality Summary Sheet
* Peak Flow Summary Sheet

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* Stream Designation Information
* Impairment Information
* FEMA Mapping
* Environmental Features Mapping ***(list features that are not present within the project limits on the map)***

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# EXECUTIVE SUMMARY/TABLES

The project has XX POIs and XX LOIs with a total Impervious Area Requiring Treatment (IART) of X.XX acres. The proposed SWM facilities will provide X.XX acres of impervious area treatment (IAT) thus providing the MDOT SHA water quality bank with X.XX acres of impervious area treatment credit/debit.

***Refer to appendices for supporting documentation.***

**Table 1 - Site Description and Natural Resources**

|  |  |
| --- | --- |
| Limit of Disturbance (acre) |  |
| Predominant Hydrologic Soil Group/s (HSG) |  |
| Highly Erodible Soils (Slope > 15% orK Value > 0.35 where Slope > 5%) | Present/Not Present |
| Downstream Waterbody Name(6-Digit Watershed) |  |
| 12-Digit Watershed | *List with study points if more than one per project* |
| Tier II Watershed? | Yes/No |
| Stream Use Classification |  |
| Impairments | *List* |
| Wetland/Waterway Impacts? | Yes/No |
| Floodplain Impacts? | Yes/No |
| Hotspot Description | *NA or Description* |
| Chesapeake Bay Critical Area Impacts? | Yes/No |
| Severn River Watershed? | Yes/No |
| Interjurisdictional Waterway? (Jones Falls, Gwynn’s Falls or Herring Run Watershed) | Yes/No |
| Karst Topography? | Yes/No |

**Table 2 - POI/LOI Data**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **POI/ LOI** | **Development Class****(New Dev./ Redev.)** | **Ex. Drg Area (Acre)** | **Pr. Drg Area (Acre)** | **Ex. IA in LOD (Acre)** | **Pr. IA in LOD (Acre)** | **IART (Acre)** | **IAT (Acre)** |
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**Table 3 - BMP Data**

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| --- | --- | --- | --- | --- | --- | --- | --- |
| **POI/LOI** | **BMP #** | **BMP Type** | **Drainage Area to BMP (Acre)** | **Ex. Treated Impervious1 (Acre)** | **Pr. Treated Impervious2 (Acre)** | **378 Review Required?** | **MDE Review Required?** |
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1. Impervious area draining to the facility in existing conditions. For a new facility this is zero.
2. Impervious area draining to the facility in proposed conditions.

**Table 4a - Treatment Summary-Watershed**

|  |  |  |  |
| --- | --- | --- | --- |
| **6-Digit Watershed** | **IART (Acre)** | **IAT (Acre)** | **Treatment Method/s1** |
|  |  |  |  |
|  |  |  |  |
| **Table 4b - Treatment Summary-Study Point** |
| **POI/LOI**  | **ESDv Req’d (Y/N)** | **ESDv Pro’d (Y/N)** | **ESDv Method2**  | **Qp/Qf Peak Increase****(storm)3** | **Qp/Qf Peak Managed****(Y/N)4** | **Qp/Qf Method5** |
|  |  |  |  |  |  |  |
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1. List all that apply for each POI (BMP Type, 3.3.A waiver, WQ Debit), or, not applicable (NA).
2. List all that apply for each POI (BMP Type, Variance), or, not applicable (NA).
3. If yes, list years; if no, state “none”.
4. List yes or no. If it differs per storm event, list storm events as well. If management is not required, show “NA”.
5. List BMP facility/ies, waiver (note if County concurrence is pending). If management is not required, show “NA”.

# INTRODUCTION

This report presents the concept/site development/final SWM analysis and design for project name here located in county name here. The purpose of the project is purpose here and consists of the following work: constructing/retrofitting work here. Include if the existing roadway is an open section or closed section and any modifications to that drainage pattern.

-OR-

Submittal Phase: {Concept, Site Development, Final}

Project Name:

County:

Purpose:

Work to be completed:

# REGULATORY REQUIREMENTS (Check those that apply)

[ ]  **NPDES/NOI Permit -** Permit is required for projects that disturb one acre or more.

[ ]  **Anne Arundel Soil Conservation District** **Review** - Projects located within the Severn River watershed require submittal to and approval from the Anne Arundel Soil Conservation District, in accordance with MD Code, Environment, 4-308.

[ ]  **TIER II Review** - Projects located within a TIER II watershed with an LOD greater than one acre require completion of the NPDES anti-degradation checklist which should be included as part of the SWM narrative. Enhanced ESC measures should be provided for work proposed in the TIER 2 buffer.

[ ]  **Critical Area Review** – Projects that lie within the Chesapeake Bay Critical Area require review by the Critical Area Commission.

[ ]  **DNR Review** – Projects located in a Use III watershed must consider thermal impacts and shall not include wet pools as part of the Stormwater Management and Erosion Sediment Control design. Coordination with DNR may be required.

[ ]  **Dam Safety/Small Pond Review** – SHA PRD Small Pond Review is required for projects meeting the criteria for a small pond based on the latest MDE flowchart.Ponds requiring dam safety review and some small ponds (as identified in the flow chart) will be reviewed by MDE. Every small pond facility is required to have a standalone report after concept level evaluation. For MDE reviews, provide a standalone report to SHA PRD for screening before submittal to MDE.

# STORMWATER MANAGEMENT ANALYSIS

The 2000 Maryland Stormwater Design Manual, Volumes I and II including revisions based on the Stormwater Management Act of 2007 and subsequent updates by MDE and the MDOT SHA Sediment and Stormwater Guidelines and Procedures (latest version) must be used to determine qualitative and quantitative needs. The Environmental Site Design (ESD) requirements have been implemented to the Maximum Extent Practicable (MEP) within the project limits to manage runoff as close to its source as possible. [Update text as needed.]

The stormwater study area (SSA) represents the area draining to each POI in existing conditions within the project LOD/SHA right-of-way. If the existing imperviousness for the drainage area within the stormwater study area is greater than 40% then the area is classified as ‘redevelopment’. Conversely, if the imperviousness for the drainage area within the stormwater study area is 40% or less than the area is classified as ‘new development’.

***Computational Analysis – edit as needed***

A “HydroCAD/TR-20/TR-55” analysis was performed for each study location for both existing and proposed conditions to calculate peak discharges. [Include additional information if applicable.]

***If there is no change from existing to proposed conditions tc, drainage area, or RCN, peak flow analysis is not required except as needed to ensure stability***

***Description of POIs/LOIs***

**Provide a general discussion of the changes in land use, flow patterns, and drainage areas from existing to proposed conditions for each study location. If the descriptions are similar, they can be grouped together into a single paragraph with any unique study locations discussed under a separate paragraph.**

***Small Pond/Dam Safety Concept Assessment***

**Provide a discussion of any proposed small ponds or modifications to existing small ponds. The assessment can be provided here or as a separate document.**

# EROSION AND SEDIMENT CONTROL NARRATIVE

All Erosion and Sediment Control (ESC) practices will be designed according to the latest applicable standards and specifications. *Describe proposed ESC specific for this project in general terms and discuss ESC phasing if any.*

Appendices

Appendix A: Data and Computation Tables

* MDOT SHA Stormwater Management Calculator
* MDE’s ESD Summary Sheet
* Impervious Area Shift Matrix
* Provided Treatment Template
* Water Quality Summary Sheet
* Peak Flow Summary Sheet

Appendix B: Waiver Applications, Variance Requests, County Concurrence Requests

(insert standard forms)

Appendix C: Drainage Area Mapping

* Project Site
* SWM Facilities

Appendix D: Site Computations and Stormwater Management Computations

Appendix E: Water Quality Mapping

Appendix F: Erosion and Sediment Control Mapping and Computations

Appendix G: Natural Resources

* Soil Survey ***(from USDA Web Soil Survey, use Soil Reports, Soil Erosion, RUSLE2, Soil Map (only), Soil Data Explorer (all))***
* Stream Designation Information
* Impairment Information
* FEMA Mapping
* Environmental Features Mapping

Appendix H: Outfall Photographs and Stability Analysis

Appendix I: Culvert/Dam Evaluation and Summary

Appendix J: References

* Maryland Department of the Environment, 2000 Maryland Stormwater Design Manual, (October 2000, Revised May 2009)
* Maryland Department of the Environment, 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control
* Maryland Department of the Environment, Maryland Stormwater Management and Erosion & Sediment Control Guidelines for State and Federal Projects, (February 2015)
* Maryland Department of Transportation State Highway Administration, Sediment and Stormwater Guidelines and Procedures, (October 2017)
* USDA Web Soil Survey for County Name here, Maryland
* Include any additional references as appropriate
* List any MDE Tech memos referenced