



Stormwater Division
 Department of Public Works
 800 Rabbitt Road
 Gaithersburg, Maryland 20878

STORMWATER MANAGEMENT PLAN REVIEW –ESD- CHECKLIST

Project Name:		SWM Plan Number:	
Project Address:		SWM Plan Level*:	CONCEPT
		*(Concept, Prelim, Final, or a combination per Ch.8)	
Engineer Contact:		Reviewer Contact:	
Engineer Company:		ESC Plan Number:	

<u>Reviewer Markup Legend:</u>	Submittal Date:	Review Date:	Reviewer Initials:
√ Completed Satisfactorily.	_____	_____	_____
INC. Incomplete or Incorrect	_____	_____	_____
N/A Not Applicable	_____	_____	_____
? Not enough info provided.	_____	_____	_____

General Information:
 This checklist has been developed to provide specific instruction to engineers and to serve only as a supplement to the City's Chapter 8 Code. The initial checklist shall be completed by the City's plan reviewer. **All submissions must fully address the City's Chapter 8 Code addressing Erosion and Sediment Control and Stormwater Management for approval and compliance.**

This checklist shall be utilized in the review of the Concept, Preliminary and Final Stormwater Management Plans. Applicable items shall be provided in the level of detail needed in the first submittal. All comments are expected to be addressed in the immediately following subsequent submission. Failure to do so may result in less than a full review.

Plan Submission Process:
 The Initial Submission and subsequent submittals shall be made electronically for processing and fee acceptance. For all information related to permits please see: <https://www.gaithersburgmd.gov/services/permitting-inspections>

Note to the Applicant / Engineer:
 Your submission for Stormwater Management Plan has been reviewed. The review was made per the following checklist. If you do not address a checklist item and/or comments on the plan sheets, explain your reasoning in your transmittal letter.

Typical Abbreviations contained within: ESD_v is Environmental Site Design Volume as defined by MDE SWM Ch.5; 10-YR is the storm event with a 10% probability of occurrence; and WSEL is Water Surface Elevation.

The Review Checklist begins on the next page.

Note: Per Chapter 8, Section 8-25(1)(4): If a stormwater management plan involves direction of some or all runoff off from the site to an adjacent property, it is the responsibility of the developer to obtain from adjacent property owners any easements or necessary property interests concerning flowage of water. Approval of a stormwater management plan does not create or affect any right to direct runoff onto adjacent property without that property owner's permission.

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PART 1 - PRE-REVIEW: REQUIRED PLAN PACKAGE AND SUPPORTING DOCUMENTATION

___	___	___	Transmittal: Specifically explains the purpose of submission (i.e. what plan type and associated plan (ESC, SDP, FSP, AFP, etc.) with tracking numbers.
___	___	___	Conceptual Safe Conveyance / Adequate Outfall Analyses and Supporting documentation: Assessment of all points of discharge demonstrating that runoff can be safely conveyed off-site. Assessment should be proportional to the project scope, complexity, and apparent risks of failure. Analysis should include stability and capacity for the 10-year storm- excepting floodplains.
___	___	___	Conceptual Downstream Facility Impacts for Developments that are within the drainage area of a previously approved and installed downstream facility: For downstream regional ponds, the applicant must be aware of the downstream pond and be able to identify factors that may adversely impact the downstream facility. The applicant should also identify potential strategies to eliminate any potential adverse impacts.
___	___	___	Stormwater Management Report: Narrative of project with establishment of site imperviousness, redevelopment criteria (if applicable), computational analysis of stormwater requirements, breadth and scope of proposed stormwater management according to City Code and State regulations, include necessary appendices of vicinity map and soils hydrologic information. Discussion of ESD to MEP and alternatives considered/rejected.
___	___	___	Mapped Site Resources: <ul style="list-style-type: none"><input type="checkbox"/> Wetlands<input type="checkbox"/> Major Waterways<input type="checkbox"/> Floodplains<input type="checkbox"/> Tidal and Nontidal Wetlands<input type="checkbox"/> Wetlands of Special State Concern<input type="checkbox"/> Wetland buffers<input type="checkbox"/> Stream valley buffers (SVB)<input type="checkbox"/> Forests<input type="checkbox"/> Forest buffers<input type="checkbox"/> Steep slopes<input type="checkbox"/> Highly erodible soils<input type="checkbox"/> Springs/seeps<input type="checkbox"/> Intermittent streams<input type="checkbox"/> Vegetative cover<input type="checkbox"/> Ponds<input type="checkbox"/> ESD facilities<input type="checkbox"/> SWM BMPs
___	___	___	Geotechnical Report (As needed): Infiltration testing and boring reports as needed to demonstrate feasibility of ESD practices being proposed or excluded. Alternatively, the applicant can delay the report to the Preliminary SWM Plan stage. See Part 7.
___	___	___	NRI/FSD: One (1) Copy of Approved NRI/FSD. <u>Note: NRI/FSD must identify steep slopes and soils. Soil Identification to include the name, symbol, and hydrologic group information.</u>

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___	___	___	Site Plan (Sketch): Submitted ESC/SWM Plans must conform to submitted entitlement plans. Applicant to include copies of Site Plans to demonstrate conformance.
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PART 2: PLAN SPECIFIC REQUIREMENTS

COVER SHEET

___	___	___	Owner / Permit Applicant Name (individual and company), Address, Email Address, and Phone number.
___	___	___	Civil Engineer Name (individual and company), Address, Email Address, and Phone Number.
___	___	___	Vicinity Map with Site Identified (approximate outline of site and label); 1"=2000' minimum scale.
___	___	___	Required Permits Table: The Applicant / Engineer must note all required permits involved with the development including the City's permits.

PLAN VIEW SHEETS

___	___	___	Scale such that readability of measures and improvements are ensured. Typical scales are 1" = 20' and 1" = 30'. <u>Any non-typical scale must be discussed with plan reviewers prior to submission.</u>
___	___	___	Property lines (site boundaries and adjacent properties) with Owner / Legal Description and mailing addresses for Site and immediately adjacent and confronting properties.
___	___	___	Fill Areas: Identify any areas of large amounts of structural fill. Rule of thumb: fill of 2' or more.
___	___	___	Limits of Clearing and Grading: Include conceptual limits of disturbance (LOD). Include the amount of disturbance, in acres.
___	___	___	Topography: Existing and proposed contours (2' contour intervals maximum)
___	___	___	Existing and Proposed Improvements (buildings, streets, utilities, stormwater facilities, etc.)
___	___	___	Natural Resources to be protected must be delineated (aka the buildable envelope must be shown).
___	___	___	Designated Wetlands with associated 25' buffers.
___	___	___	Floodplain, Stream Valley Buffer (SVB), and BRL Impacts: These items must be clearly shown and identified on the plan (as applicable to the property) along with any proposed grading or other improvements in these extents.
___	___	___	Plan Legend: Must include soils, Floodplain, SVB, BRL, and ESD symbology.
___	___	___	Tree Lines (existing and proposed), Tree Save measures, and Tree Protection measures must be delineated. <u>Note construction details may remain on their prospective plans; the ESC must only delineate the extents of the measures.</u>
___	___	___	Proposed Stormwater Management Facilities (ESDs, ponds, BMPs).

PART 3 – STORMWATER MANAGEMENT REPORT REQUIREMENTS

___	___	___	Stormwater Narrative: Includes basic background of site and proposed development, must mention if the site is redevelopment (with justification), the proposed stormwater management facilities intended to be used, achievement of ESD to the MEP and / or supplementation with structural facilities (i.e. design per MDE Ch. 3 facilities) along with mentioning of any waiver requests. Descriptions of all water courses, impoundments, and wetlands on or adjacent to the site or into which stormwater directly flows. Must include a narrative of the erosion and sediment control.
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—	—	—	Stormwater Requirements: Computational analysis of site’s stormwater management requirements. This must include the discussion of Site Boundary versus LOD volumetric requirements, redevelopment criteria (if applicable), required stormwater management volumes. Refer to Stormwater Management Summary Table below for additional detail.
—	—	—	Stormwater Implementation: Computational analysis for provided stormwater with computations for each facility per state design methodology.
—	—	—	Infiltration Practices must demonstrate maximum depth allowed via computations.
—	—	—	ESD Alternatives Not Used: The report must include an analysis of the application of other ESD facilities in Ch.5 of MDE and why those facilities were not used. Excessive Cost is not acceptable.

PART 4 – OVERALL PLAN INFORMATION

—	—	—	<p>Overall Plan which shows locations and identifies stormwater facilities.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Existing Conditions plan showing existing impervious, contours, and natural resources <input type="checkbox"/> Proposed conditions plan showing approximate impervious, site improvements, and natural resources to be protected <input type="checkbox"/> Type, size, and location of ESD and other SWM features <input type="checkbox"/> Critical setbacks from buildings, roads, and property lines <input type="checkbox"/> Building Restriction Lines (BRL) <input type="checkbox"/> Flood Protection Elevation <input type="checkbox"/> Maximum Limits of Disturbance (LOD) <input type="checkbox"/> Proposed drainage area boundaries to all ESD/SWM facilities <input type="checkbox"/> Maximum side slopes <input type="checkbox"/> Conceptual maintenance access <input type="checkbox"/> Inflow points <input type="checkbox"/> Surface and sub-surface flow paths <input type="checkbox"/> Flow splitters (upstream of ESD is preferred)
—	—	—	<p>Stormwater Management Summary Table: Identifies stormwater requires and demonstrates how the facilities provide the necessary requirement.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Total Site Area <input type="checkbox"/> Project Site Area (defined by property or LOD) <input type="checkbox"/> Disturbed Area (maximum extent, not phased) <input type="checkbox"/> Existing Impervious Area for Site <input type="checkbox"/> Proposed Impervious Area for Site <input type="checkbox"/> ESD_v Required <input type="checkbox"/> Target PE <input type="checkbox"/> ESD_v Provided categorized by facility type (or individual facilities) <input type="checkbox"/> PE achieved <input type="checkbox"/> MDE Ch.2 Tabulations (WQ_v, CP_v, Rev_v, etc.) if applicable to project.
—	—	—	<p>Soil Boring Locations: (If a Geotechnical Report is provided) both site borings and infiltration test locations.</p>

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___	___	___	Overall Drainage Area Map: may be a separate plan, but must show all facilities with associated drainage divides and areas including off-site and on-site for the site and adjacent areas (adjacent areas only applicable to the development). Please refer to the safe conveyance section in part 1 for more information.
___	___	___	Conceptual Maintenance Access: Concept Plan shall be able to demonstrate that maintenance access can be reasonably achieved. Access from adjacent ground level to facilities must be reasonably wide and low to facilitate practical maintenance and inspection by personnel. Where necessary utilize sections, plan view information or both to demonstrate practical access to the facilities. Label critical dimensions on appropriate plans to facilitate review such as top of wall to media inside a facility and ground to top of wall for access into a facility.
___	___	___	Sheet Numbering: Erosion and Sediment Control Plans are separate from Stormwater Management Plans per City Code, All sheets shall be numbered as a single plan set (must have SWM X of X). ESC/SWM Plans are not allowed to be a part of the greater construction set where no coversheets or overall plan numbers, C-XXX are applied). Typically, applicants use two sheets; numbers: 1) the Plan Number, C-XXX and 2) the sheet number, ESC-X of X / SWM-X of X.
___	___	___	Approval Block with Plan Number Included: The bottom right of each plan sheet, approximately 3" by 5" of blank space must be included to accommodate the City's Approval block.

PART 5 – STORMWATER PLANS AND DETAILS – ESD FACILITIES

___	___	___	Soil Boring Locations (if applicable).
___	___	___	Drainage Areas do not exceed maximum allowed as set in Ch.5 of MDE SWM Manual.
___	___	___	Void Ratio: 40% voids (n=0.40) are allowed in ESD facilities except pervious paving, which utilizes a 30% ratio (n=0.30).
___	___	___	Facilities which infiltrate must be located a minimum of 10' away from buildings, 50' away from water supply wells, 100' away from unconfined water supply wells, and 25 feet from septic systems.
___	___	___	Facility Bottoms are clearly delineated.
___	___	___	Topography as needed to delineate facility, i.e. embankments, contours for concrete flumes, etc.
___	___	___	Infiltration Rates: Use 3-inches/hour maximum infiltration rate for computations regardless of actual percolation rates. For rates which are exceedingly high (>10-inches/hour) investigate the use of alternate filtration practice including justification.

PART 6 – STORMWATER PROFILES AND SECTIONS

___	___	___	Typical cross-sections through stormwater facilities for each unique type of facility demonstrating conformance to City of Gaithersburg standards.
___	___	___	Typical details: As needed to support unique design elements of SWM Concept.

PART 7 – GEOTECHNICAL/SOILS INVESTIGATION

NOTE: Geotechnical investigation is not required at Concept. NRCS Soils Surveys shall be used to determine whether ESD type is appropriate. Proposed soil boring locations should be indicated at Concept Phase.

