



2010 Stormwater Management Manual and Regulations in the State of Maryland

**A White Paper from
Loiederman Soltesz Associates Inc.**



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Introduction

In 2007, the State of Maryland passed the Stormwater Act of 2007 that required the Maryland Department of the Environment (MDE) to revise the state's stormwater management (SWM) design criteria. These new regulations went into effect in May of 2010. The regulations that were promulgated in early 2010 made significant changes to how stormwater management would be designed and had negative impacts on many existing, but unfinished projects. Loiederman Soltesz Associates, Inc. (LSA) worked closely with State and Local Agencies and testified before the state Senate to provide grandfathering allowances and to provide language to assist redevelopment projects during the April 2010 emergency hearing on MDE's regulations. MDE then issued the final regulations guidance and design manual modifying grandfathering and redevelopment. LSA is currently working with local jurisdictions to implement the state regulations and provide services to assist in the preparation of the Environmental Site Design (ESD) to the Maximum Extent Possible (MEP) design criteria. This outline is aimed at providing you assistance as you plan your future projects in the State of Maryland.

Planning

Part of the intent of the new SWM regulations is to tie SWM engineering design to initial planning efforts, effectively taking entitlement, planning, and engineering and merging them into one cohesive process. This merger results in more preliminary engineering design being performed in the up front stages of the planning process. The project will be required to have preliminary engineering be completed by the Civil and Geotechnical engineer prior to submittal of the first planning document.

The SWM regulations require a plan to show various environmental constraints such as steep slopes, soils, forest, wetlands, and floodplains before submitting the SWM design plans. The purpose of this environmental plan is to indicate areas where development is generally prohibited because of the impact to environmental features that MDE and the U.S. Army Corps of Engineers requires to be protected. The State of Maryland currently requires a Natural Resource Inventory (NRI) done for most projects, and that plan can be used to fulfill this requirement.

Once the constraints for the site have been established, a site layout can be prepared using the new SWM requirements, which call for quality and quantity treatment of the 1-year storm in small, nonstructural practices to the maximum extent practicable.

During the initial layout, an evaluation of how sediment control measures can be installed is required; primarily sediment traps and basins to ensure those facilities that depend on infiltration will not be placed in the same location as sediment traps.

Design

The new regulations have a three step design process. The Concept Plan is filed after approval of the Environmental Constraints Plan and is evaluated prior to submittals of the various entitlement documents that most jurisdictions will require (such as Preliminary and Concept Plans). However, the new regulations also require that an interim design be submitted at what is effectively the fifty percent design stage. This new design plan must include grading, landscape, traps, basins, and perimeter controls, and will require agency review and approval. Lastly, at the appropriate time, the final Construction Plans are submitted. This last step mirrors what most jurisdictions require already and can be considered to replace that step.

In addition to the plans that must be submitted, engineers are now expected to provide computations and to submit a narrative describing the design process, phasing, and why decisions were made to minimize disturbed areas and maximize SWM without using structural measures.



Redevelopment

The SWM goal for redevelopment is to gain water quality treatment on existing developed sites, while supporting initiatives to improve urban areas. While a developer must exhaust all options for ESD during the planning and site design phases of the project, the State recognizes a wide range of site constraints that may limit effective implementation of ESD. If the developer runs into this situation, there are alternative management options after compliance with the ESD to the MEP. Additionally, quality management, including Channel Protection Volume (Cpv) treatment, is not required for redevelopment.

SWM for redevelopment must follow the measures listed below:

- To provide water quality treatment for a minimum of fifty percent of the existing impervious area within the limits of design, ESD must be implemented to MEP. To meet SMW requirements for redevelopment using ESD, treatment must be provided for the runoff from 1 inch of rainfall (i.e., PE = 1 inch) for fifty percent of the redeveloped impervious area.
- The redevelopment designs must reduce existing impervious areas within the project limit of disturbance (LOD) by a minimum of fifty percent. When a combination of impervious area reduction and ESD implementation is used, the combined reduction and treated areas must be equal to or greater than fifty percent of the existing impervious area within the LOD. When redevelopment reduces the impervious area within the LOD by fifty percent or more, water quality treatment is satisfied.
- Alternative management practices may be considered in accordance with Section 3.8 Alternative Management Measures for conditions which prevent impervious area reduction and/or the implementation of ESD to MEP.
- If a redevelopment activity changes the site runoff characteristics in a manner that creates points of concentrated flow where previously there was sheet flow or increases discharge rates for 1-year, 2-year, and 10-year 24-hour frequency storms, Cpv and Peak Discharge (Qp) may be required by the Administration.
- The Administration may determine certain practices that do not involve earth disturbance, such as pavement overlay and/or patching and sidewalk replacement, are considered maintenance and redevelopment requirements may not be applicable.
- When existing impervious areas drain to an existing Best Management Practice (BMP) meeting previously approved requirements, these areas are considered treated. Redevelopment requirements will apply to the remaining unmanaged existing impervious areas within the LOD. The performance of an existing BMP will need to be verified. If the BMP is not functioning as designed, necessary improvements to meet appropriate standards must be provided.

Overall Impact of the SWM Regulations

Overall, designers/developers/contractors can expect that the new SWM requirements and draft sediment control manual will increase the design and construction budget of a project. SWM is now tied irrevocably to the planning process, which previously were viewed as two individual tasks. This results in more preliminary engineering, thus costing both time and money.

Ultimately the overall impact will affect projects in the following ways:

- Reduction in the use of ponds
- Many smaller facilities to control SWM
- SWM devices within public right of way and on private lots
- Geotechnical/Civil Engineering occurring earlier in the planning process
- Greater space required to provide stormwater control
- Reduction in available land for site improvement, building space and units
- Increased maintenance costs



As each county in the State of Maryland is required to revise their current regulations to reflect the new State requirements, LSA will play a vital role in comments and/or assisting in preparing of manuals and providing comments to those manuals in various counties throughout the State.

As a note, a grandfathering clause has been inserted into the law. Projects that secured final approval for stormwater management and erosion and sediment control plans prior to May 5, 2010 are grandfathered from these new regulations and have until May 4, 2012 to be constructed.

Additionally, if a project has its preliminary project approval, a second provision is available to apply for an administrative waiver by May 4, 2013. If granted, the project has until May 4, 2017 to be constructed.

How Loiederman Soltesz Associates Can Help

LSA offers the end-to-end solutions needed to meet and exceed these new regulations. LSA's engineers and planners have a wide array of experience in designing and shepherding low impact development and bioretention designs through jurisdictional processes. Combined with our efforts to help shape the regulations at both the state and the county levels, we are uniquely qualified to provide design services that are both cost effective and timely. Now that the state regulations require SWM and entitlement planning be a combined effort, LSA offers an integrated approach for planning by having the planners and engineers under one roof. As both are now needed in the preliminary process, having the two located just down the hall from each other allows for quicker response times. This integration allows us to provide a fine tuned project that meets density requirements while meeting SWM requirements — ultimately saving you time and money on your project.

