Maryland Department of the Environment (MDE)
The Stormwater Management Act of 2007 (Act)
Response to Comments on Proposed Regulations and Supplement 1, 2000 Maryland Stormwater Design Manual (Manual)
April 2009

Introduction

The Stormwater Management Act of 2007 (Act) was signed into law on April 24, 2007 and became effective October 1, 2007. The Act requires the Maryland Department of the Environment (MDE) to adopt rules and regulations establishing criteria and procedures for stormwater management that promote the use of environmental site design (ESD) to the maximum extent practicable (MEP). The goal of these regulations is to maintain after development as nearly as possible, the predevelopment runoff characteristics.

On July 30, 2007, MDE held a public outreach meeting to consider implementation strategies and seek stakeholder input in developing regulations. Issues such as the practicality of existing ESD practices, criteria for measuring effectiveness, and other challenges and solutions were discussed. Feedback received was diverse and conflicting. Stakeholders sought answers to questions like why were existing regulations deemed insufficient, the possibility of altering public works codes, educational needs, public acceptance, financial considerations, and staffing needs.

Between July and December 2007, MDE drafted and distributed for public comment a revised Chapter 5 of the "2000 Maryland Stormwater Design Manual" (Manual). Between January and May 2008, seven focus group meetings were held to solicit comments on how to prioritize actions needed to implement the Act. Wide-ranging comments on Chapter 5 were received as well from design engineers, developers, localities, environmental advocates, and citizens. Major issues raised included the definition of MEP, redevelopment, complete Manual reorganization, education, retrofitting, maintenance, and modifications to the Code of Maryland Regulations (COMAR) and local public works codes.

Following the focus group meetings, MDE conducted an extensive research and literature review, and organized work groups for redevelopment and plans review issues. In addition, in collaboration with KCI Technologies, MDE staff worked to model ESD design scenarios for medium and high-density residential and commercial development. As a result, MDE developed new ESD sizing criteria to address groundwater recharge, water quality, and channel protection volumes (Re_v, WQ_v, and Cp_v, respectively), proposed modifications to COMAR, and held another public meeting on July 31, 2008 to present the results and publish the timeline for moving forward.

The formal adoption process began in October 2008 with proposed regulations and Supplement 1 including a new Chapter 5 of the Manual being published in the Maryland Register. A public hearing was held on December 8, 2008 and verbal and written comments were both received. Written comments were also accepted by MDE through January 5, 2009. Comments received

through this formal process have varied and the following represents MDE's summarized response.

General Overview of COMAR and Supplement 1

MDE received numerous comments through the formal regulatory adoption process. Several commenters suggested that "MDE has not demonstrated that the previous regulations, policies, and standards are ineffective." Another commenter suggested that the State should "encourage the use of ESD instead of requiring ESD." There were other comments that the proposed regulations should address requirements for Maryland's municipal stormwater and construction general permit programs mandated under the National Pollutant Discharge Elimination System (NPDES).

The purpose of the proposed regulations and Supplement 1 is to address the requirements mandated by the Act. By law, MDE must establish regulations and a model ordinance that require implementation of ESD. Suggestions that MDE needs to prove that prior practices and design criteria are not working are not now relevant due to the current law. ESD is now required by law and therefore cannot be viewed as merely an option that will be encouraged.

MDE believes that the distinction between Maryland's NPDES municipal stormwater program and the proposed COMAR modifications needs to remain. NPDES municipal stormwater permits have far more specific requirements for counties and municipalities related to overall water quality programs than what is being proposed currently to implement the Act. Also, these permits only apply to the most populated jurisdictions in the State and are tailored to address local initiatives and specific watershed efforts. MDE's construction general permit also addresses the mandates under the NPDES umbrella and affects development projects greater than one acre of earth disturbance. Maryland's erosion and sediment control and stormwater management programs go further by regulating earth disturbances greater than five thousand square feet. Both of these statewide programs are referenced in all NPDES municipal permits and the construction general permit, and MDE believes this connection is the correct and most efficient means of addressing the requirements of each.

MDE received conflicting comments regarding the content and tone of Supplement 1. Some commenters believe that the proposed Chapter 5 reads too much like a guidance document while others believe not enough flexibility is provided in the design requirements of individual ESD practices. In response MDE believes that the proposed regulations and Supplement 1 strike an even balance between these two points of view. The background information will provide assistance during the comprehensive review process to a number of different entities that will be involved during project development. This guidance also is supported with technical information such as design criteria, example computations, and graphics for individual practices. MDE intends to provide guidance with supplemental details, design examples, and computations in the months following formal regulation adoption. Also, MDE will continue to assist local programs and make available further information as the new design criteria and practices are implemented. This is one of MDE's main objectives as the new regulations are implemented.

Professional or "Acknowledged" Burden

The Act represents a major evolutionary step forward for how stormwater is managed in Maryland. As with any step of this magnitude, there will be a resistance to the change. This resistance is evident throughout many comments MDE received during the public notice process. For example, one commenter stated that they "…can't imagine how someone could possibly design affordable high-density urban developments using only ESD…" Another stated that "…important parts of the engineering community…does not appear to have fully embraced the draft regulation." Still another stresses that "[t]he amount of retraining required of architects, planners, agency review staff, and engineers to fully implement ESD to the MEP cannot be underestimated."

Many comments also expressed concern over the lack of guidance on how best to implement ESD. These included several questions about how MDE anticipates applying ESD in specific situations. For example, several commenters questioned how ESD would apply to linear projects like road or highway construction. Others have asked how elements like green roofs that are traditionally designed by other professions (e.g., architects) will be incorporated into stormwater management plans and reviewed by local authorities.

Finally, many requested that MDE provide more information and tools to help implement the new program. Included in these were numerous suggestions that MDE provide detailed design examples that will guide designers and reviewers through the proposed process. Additionally, there were several requests for tools like computer spreadsheets that could be used to simplify approval processes.

Maryland's statewide stormwater management program dates back to the early 1980's. When the regulations were revised and the Manual adopted in 2000, MDE received numerous comments that it would be difficult to design or review projects using the structural and nonstrucutural practices found in the Manual. In the years since, the stormwater management community has adapted and these practices are common design features across the State. The current revisions to COMAR and the Manual represent a natural progression of Maryland's stormwater program. Where nonstructural practices and alternative surfaces were encouraged in 2000, now they are required. As in 2000, there will be growing pains. In the same manner, MDE encourages patience and best professional judgment as we work through these pains.

MDE also recognizes that more guidance will be needed to implement these changes effectively. To address this, MDE is developing design examples that use real world situations to illustrate how ESD may be applied to common residential, commercial, and linear roadway projects. These examples will include ESD elements like alternative surfaces (e.g., green roofs, permeable pavements) and using micro-scale practices in series to provide better design guidance. Many of these ESD techniques will involve other professionals like architects or landscape architects in the final design. In these cases, the stormwater community will need to embrace new and imaginative approaches to integrate ESD into project designs. MDE understands that this will not be trouble free and will do its best to provide technical and programmatic support throughout the transition.

Comments and Issues

A large number of commenters suggested wording changes and requests to clarify MDE's intention. Where typographical and grammatical suggestions were noted the necessary changes were made. There were also a number of questions pertaining to the revised definitions in the regulations. The definitions of MEP and redevelopment have been edited for clarity and to better reflect the intent of the Act. Other suggestions regarding technical corrections to design criteria, formulae, and consideration of karst terrain in the planning process were also addressed. These changes are discussed in more detail below.

Throughout the many comments received, there were several recurrent topics that have garnered much attention. Issues like defining MEP, redevelopment, local ordinances and codes, grandfathering, plan review, and inspections and maintenance have drawn widely disparate viewpoints. Accordingly, these topics merit further discussion. Each of these concerns are discussed in more detail below.

Issue No. 1: Maximum Extent Practicable (MEP). According to the Act [Environment Article 4-203(b)(5)(II)], MDE shall establish stormwater management regulations that require implementing ESD to the MEP and that this be demonstrated by developers prior to using standard Best Management Practices (BMPs). MDE addressed both requirements by adding language to the proposed regulations and in Supplement 1 that defined MEP and the responsibilities for demonstrating that it has been met. These changes have elicited numerous comments ranging from conformance to the language found in the Act to the ease and/or difficulty of meeting the standards as currently set.

Many commenters suggested that the proposed definition of MEP is unclear and does not reflect the intent of the Act. For example, one commenter wrote that the proposed definition "… is too narrow and is inconsistent with the statute." Another stated that it "…is unclear and lacks a method for evaluating compliance." Still another argues that "woods in good condition" is not the natural state of many development sites and does not reflect the Act's intent.

There were a number of comments that the definition of MEP is too stringent and will be difficult to enforce. One commenter suggested that the definition "…leaves too much up to the review agency to define…" and that "[t]his will create difficulty in consistently deciding whether the design is in compliance, and defending those decisions." Another commented that the legislature did not provide a definition for MEP and suggested that factors such as maintainability, cost, and other site constraints be included in the definition. Finally, one commenter stressed that "…developers should be permitted to present evidence that particular ESD designs would be cost-prohibitive (i.e., not feasible) for a particular site/project, or that site specific conditions limit the feasibility of ESD techniques." This commenter continues that "[t]he presence of historic or heritage resources would be such a factor" and adds that "[a] developer should not be expected to disturb a portion of a historic battlefield, for example, in order to build rain gardens or bioretention swales."

Many in the regulated industry also were concerned that using ESD to meet current WQ_v and Re_v requirements would be too difficult. One commenter suggested that using ESD to address both

WQ_v and Re_v would be "…very difficult to satisfy specially [*sic*] on high density development…" and added that these requirements might only be satisfied in large, open areas. Still another suggested that three separate devices would be needed to address stormwater requirements for a rooftop alone.

Conversely, there were several comments that the MEP definition was too lenient and did not reflect the Act's intent. One commenter requested that MDE "…establish a numeric stormwater retention or reduction volume that preserves and/or replicates the original pre-development hydrologic runoff characteristics…" Another stated that "MDE must revise the definition of MEP to include specific criteria…" Several commenters also suggested that the current proposal would be insufficient to meet the groundwater recharge requirements set forth in the Act. Likewise, several added that ESD should be used to address Cp_v to meet the Act's intent.

MEP, Recharge, and Maryland's Runoff Reduction Policy

MDE recognizes that the definitions for MEP found in both the proposed regulations and Supplement 1 varied and needed clarification. In each case, MDE has changed the language to be more consistent with State law (§4-203). For example, the regulatory definition for MEP is now "…designing stormwater management systems so that all reasonable opportunities for using ESD planning techniques and treatment practices are exhausted and, only where absolutely necessary, a structural BMP is implemented."

The Act [§4-201.1(b)] defines ESD as using small-scale stormwater management practices, nonstructural techniques, and better site planning to mimic natural hydrologic runoff characteristics. There are many conditions (e.g., woods, meadows) that are recognized as natural and cleared farm fields and existing developed areas are not among them. As discussed in the proposed Section 5.2, for rainfall less than 3 inches, there is little difference in the amount of runoff from most natural areas although it is lowest in forests or woods. Equally, there is little difference in the volume of rainfall that must be captured to mimic these natural conditions. Although it is slightly more conservative, MDE believes that using "woods in good condition" as the target for mimicking natural hydrologic runoff characteristics is consistent with the definition of ESD found in the Act.

The Act requires developers to demonstrate that standard BMPs have been used only where absolutely necessary [§4-203(b)(5)(II)3.B]. This language clearly stipulates that ESD must be considered first even if implementing structural BMPs may be viewed as easier or less expensive. It is not permissible for a developer to default to a standard BMP solely because of cost or convenience. The Act and therefore, the regulations are clear that ESD must be considered for all sites. MDE recognizes that some flexibility in the design and approval processes is warranted and has added "reasonable" to the definition.

With respect to the regulated industry's concerns about using ESD to meet Re_v and WQ_v requirements, MDE offers that many of the structural practices in Chapter 3 of the Manual may be and often are used to address both of these requirements now. In Section 2.2, any practice that provides seepage into the ground (e.g., infiltration, filters with storage below the underdrain) may be used to address both Re_v and WQ_v. Likewise, the nonstructural options or "credits"

found in the original Chapter 5 also addressed Re_v and WQ_v requirements in a single practice. Most of the nonstructural and micro-scale practices listed in the proposed Chapter 5 are more compact versions of the structural and nonstructural practices currently used to meet both requirements. Given the many options (e.g., planning techniques, alternative surfaces, ESD practices) provided, it should be no more difficult to address both the Re_v and WQ_v requirements under the proposed regulations than it is currently.

The proposal requires that runoff be reduced to the lowest amounts found in natural conditions, or that expected if the site were woods in good condition. Chapter 5 (page 5.18) requires that "ESD practices shall be used to the MEP to address Cp_v (e.g., treat the runoff from the 1 year 24-hour design storm)…" It should be noted that this criterion is italicized, which as noted on page 5.1 indicates it is mandatory criteria and has the same force as regulation. By accomplishing these goals, groundwater recharge, runoff reduction, and channel protection requirements are met. MDE's tool for computing runoff reduction, Table 5.3, is based on the "Change in Runoff Curve Number Method" developed by Dr. Richard McCuen (Modeling Infiltration Practices Using TR-20, MDE, 1983). Using this method may require capturing from 1 to 2.6 inches of rainfall to reduce runoff to forested levels and provide channel protection. It is not necessary to require capturing rainfall in excess of that needed to meet woods in good condition. Likewise, if this goal is not met after all reasonable opportunities for using ESD are exhausted, standard BMPs must be used. MDE also recognizes that there must be a minimum level of compliance on all sites and has established that 1 inch of rainfall must be treated with ESD as that minimum.

In response to the requests that a numeric definition of runoff reduction be established, MDE believes that one already exists in the proposed Chapter 5. In nature, groundwater recharge is highest and runoff amounts are lowest for all soil types under forested conditions. This is the limit or "maximum extent" that recharge can be promoted and runoff reduced to mimic natural hydrologic runoff characteristics. To simplify compliance, MDE has adopted the widely-accepted United States Department of Agriculture, (USDA) Natural Resource Conservation Service (NRCS) runoff curve numbers or "RCNs" for "woods in good condition" (Technical Release 55, USDA-NRCS 1988) as the standard for characterizing forested conditions. This is MDE's numeric standard for runoff reduction.

Finally, several commenters suggested that the operational definition of runoff reduction specify that goals be met "through canopy interception, soil infiltration, evaporation, rainfall harvesting, engineered infiltration, evapo-transpiration, or extended filtration…" Methods like engineered infiltration, extended filtration, or rainwater harvesting are easy to address with computations and design standards. Others like evapo-transpiration or canopy interception are difficult to quantify and are typically addressed through landscaping requirements. Chapter 5 includes an extensive collection of alternative surfaces and nonstructural and micro-scale practices that must be used to reduce runoff. Whether as a design standard or landscaping feature, each of these incorporates several of the suggested methods for addressing runoff reduction. Therefore, MDE has specified that runoff reduction be accomplished using the recommended techniques.

Issue No. 2: Redevelopment - Policy. The proposed revisions to COMAR increase the amount of impervious surfaces that must be reduced or an equivalent amount of water quality treatment provided for a project from 20 percent to 50 percent. This proposed change has been

received with the most controversial and varied opinions statewide. Professionally, much of the disparity centers on how this policy affects smart growth. Some contend that the proposed requirements will create a disincentive to future redevelopment projects and discourage smart growth. Among these commenters, one municipality expressed concern that MDE's proposal would work against local goals and used three projects to demonstrate that the new requirements would discourage redevelopment. Greenfield sites were proposed during initial planning for these projects and there was a struggle to gather support for redevelopment solutions. The municipality explained that the redevelopment options that were ultimately adopted would not have been economically feasible with the proposed regulations

A second jurisdiction stated that MDE's proposed redevelopment policy "…is not consistent with smart growth initiatives, will discourage investment in greyfield sites, and will result in reduced density in the very locations which should be intensified." A different locality added that the proposed change will "…limit the ability of small businesses to expand, especially in today's economic environment." Overall, the majority of commenters recommended that the existing requirement for 20 percent impervious area reduction and/or water quality treatment remain unchanged.

Others argue that MDE should require treatment for the full WQ_v for redevelopment. The reasoning is based on the need to establish stringent standards for water quality treatment on redeveloped lands and that other cities outside of Maryland have similar requirements. Because this standard would be less than new development, these commenters believe that smart growth could continue to be promoted.

A report entitled "A Comparison of Feasibility and Costs: Environmental Site Design and Conventional Site Design for Stormwater Management" was provided to support these recommendations. This study evaluated opportunities to use ESD practices for three development scenarios to provide storage for the Cp_v (roughly equivalent to 2.6 inches of rainfall). It also showed how various ESD practices might physically fit onto any development site.

The study acknowledged that detailed information for soils, underground utilities, or subsurface structures was not considered when designing proposed ESD practices for each scenario. Without this basic information, there is no way to ensure that individual practices could be designed or constructed to meet management requirements. Because there is insufficient data provided for each location to actually implement suggested designs, the recommendations in the study to require full WQ_v treatment for redevelopment projects are not supported.

When designing any redevelopment project to address stormwater management requirements, the most significant and limiting constraints are related to factors that occur below the surface of the ground. These limitations dictate available options for ESD placement on the surface as well as storage depths for meeting volume requirements. Therefore, MDE's redevelopment planning process calls for identifying underground utilities and infrastructure during the early concept planning stage. In addition, topography, existing drainage areas, and storm drain elevations are required on concept plans. This information will determine how runoff flows through and off a site, which is another significant factor adding to the complexity of a redevelopment project.

This fundamental information is necessary when evaluating the feasibility of ESD implementation and that is why MDE's proposed redevelopment planning process will address these issues early in the concept phase of the project. Had the above study used the information required for MDE's concept planning process, a more realistic assessment of ESD could have been made.

With respect to the proposed redevelopment policy, MDE recognizes the need to achieve water quality improvement on existing developed lands. On the other hand, concerns expressed by municipalities that the proposed regulations may work against local development goals are also recognized. In balancing this disparity, MDE proposed to more than double current requirements for impervious area reduction and water quality treatment on redevelopment projects while providing options and flexibility to localities for implementation. In considering the many small towns that already have existing obstacles to revitalizing urban lands, MDE understands that this requirement will be a major challenge to implement across the State. Flexible options have been outlined for meeting this proposal so that the constraints surrounding redeveloped lands are considered in the review process. The goal is to promote redevelopment in urban areas and achieve water quality improvement without compromising other local initiatives. MDE believes this policy considers the substantial and widely diverging points of view noted above.

Definition

There were many requests for clarifying specific applications of the proposed redevelopment policy. Several questions were asked regarding the application of stormwater requirements on an entire site when the existing impervious area is less than 40%. Others suggested that redevelopment regulations needed to clarify that stormwater management needs to be addressed within a project's limit of disturbance. Additional comments expressed confusion with the definition of redevelopment.

As a result, the redevelopment definition has been changed as follows: "means any construction, alteration, or improvement disturbing 5,000 square feet or more where existing land use is commercial, industrial, institutional, or multifamily residential and existing site impervious area exceeds 40 percent." This clarifies that any project that does not meet the redevelopment criteria would be considered new development and regulated according to the appropriate criteria. This change also allows the 40% language in the regulations (26.17.02.05.D) to be deleted as this had created confusion. The regulations were also edited to be consistent with Supplement 1.

Projects on Sites with Less than 40% Impervious Area

There were several concerns that projects located on sites where existing impervious area is less than 40% would be regulated according to new development requirements. MDE understands these concerns and recognizes that applying new development standards on sites that have existing impervious area will be challenging. However, the intent of the Act is to require the use of ESD and minimize the impacts of development by reducing impervious area and maximizing opportunities for on-site storage, filtration, and infiltration techniques to mimic natural hydrology characteristics. In recognizing these goals, MDE believes that where a significant

portion of a site is pervious, sufficient opportunities for implementing ESD techniques will be available. This enforces the basic principles to minimize total impervious area for a development and to use available landscaped areas for implementing ESD.

Redevelopment Projects and Existing BMPs

Several commenters asked MDE to clarify requirements on redevelopment projects where some level of stormwater management exists. This has been done in the redevelopment section in Supplement 1. Existing BMPs may be used to address stormwater requirements when they are brought up to current design standards. Redevelopment projects served by existing BMPs provide an opportunity to ensure that practices have been maintained and are performing according to present standards. Plan approval authorities may also require further action to enhance water quality for impervious areas that are currently untreated. Many municipalities already have policies that address existing BMPs on redevelopment projects and MDE recognizes this is an important tool that should remain within the framework of local programs.

Alternative Management Strategies

Several comments reflected the need for allowing flexibility during the review of redevelopment projects, as well as the use of alternative management practices, fees-in-lieu, and watershed management plans. Many of these alternative strategies may be specified in local stormwater management ordinances which will be reviewed and approved by MDE. When the ESD to the MEP criteria is met according to the three step approval process, these alternatives may be considered. MDE agrees that flexibility is important in encouraging redevelopment projects, however in order to meet the intent of the Act, all on-site opportunities for using ESD need to be evaluated prior to considering other options.

Issue No. 3: Codes. Comments received from many approval authorities state that the time needed to alter local public works and planning and zoning codes is insufficient. Many commenters believe that the proposed dates to submit ordinance changes (July 1, 2009) and implement the program (December 31, 2009) should be extended. Several believe that one year is "unreasonable" if success of the program hinges on these code changes.

MDE believes modifying "stormwater ordinances" and "public works and planning and zoning codes" are two separate issues. COMAR 26.17.02.08 B deals with "Stormwater Management Measures" and only requires that plan approval authorities "…shall modify planning and zoning ordinances and public works codes to eliminate any impediments to implementing ESD to the MEP…" There is no prescribed timeline for accomplishing this. Timelines are included in COMAR 26.17.02.03 E (3) for "Stormwater Management Ordinances" and these should be easy to meet relative to public works and planning and zoning codes.

Throughout the entire process, MDE heard that existing codes pose restrictions on implementing some of the ESD techniques. This comment was made and reiterated at the focus group meetings and in written comments submitted to MDE. One example involves requirements for fire or emergency vehicles that restrict the use of narrower road widths for ESD.

The Act requires establishing regulations and a model ordinance that "…require...the review and modification, if necessary of planning and zoning or public works ordinances to remove impediments to environmental site design." As mentioned above, this is restated in COMAR relative to the use of certain practices. There are disparate development review processes and local codes statewide. Advising how and when these local codes ought be altered cannot be so specific that guidance would only apply in a certain number of localities. The onus will be on each jurisdiction to review for impediments, this will take time and therefore, no specific deadlines are included in COMAR.

Stormwater Management Ordinances

MDE believes that modifying stormwater ordinances is straightforward due to having done this previously. The most recent ordinance change occurred in 2000 with the implementation of the Manual and happened in the same year's time. MDE evaluates all stormwater ordinances to ensure consistency. Therefore, the year specified in COMAR has been met prior and is reasonable. One year should be ample time to adopt stormwater ordinances and this timeframe will be subsequent to the adoption of the proposed COMAR modifications.

Issue No. 4: Grandfathering. Many of the comments relayed concerns regarding the transition to implement the Act. While one suggestion was made for immediate ESD implementation upon final regulation adoption, the majority of commenters including local approval authorities, believe it will be unfair to impose new criteria on projects already approved. Similarly, development that is under construction would need to be redesigned if no grandfathering is allowed.

Questions arise however, regarding "how" and more importantly "when" the transition must occur. It is impractical to stop projects under construction and force them to be redesigned. On the other hand, it is not acceptable to allow, as one commenter suggested, as many as five years before ESD is required. Clearly, the answer is somewhere between the two extremes.

Grandfathering is not a new issue as it became relevant when the Manual was adopted in 2000. One comment received at the time even suggested that 15 years was not extraordinary for allowing projects approved previously to be completed under old design criteria. Certainly this was not considered but some lessons were learned that have affected the Department's decision about the upcoming transition period.

After promulgating modifications to COMAR, and adopting the Manual in 2000, MDE spent the next year reviewing and approving local stormwater management ordinances. It should be noted that this timeframe is exactly the same as discussed above and provided currently. At that time, MDE based the transition to the Manual on the length of time a local grading permit remained in effect plus an extra year for reissuance. In nearly all cases, this turned out to be three years total. Therefore, depending on when a local ordinance was adopted, four years or more sometimes lapsed before all development reflected the Manual requirements. This was far too long and MDE did not want to allow this to be repeated.

One commenter stated that if the new requirements must be applied to existing master plans that have been approved but not yet fully implemented, developers will have to go back to the "…drawing board and will be forced to incur significant and unnecessary expenses in terms of both money and time that can cripple, if not completely destroy, a project's completion." In another case, the commenter suggests that developers who are working on multi-phase subdivisions or commercial developments that have one portion of the property built should be allowed to grandfather future phases if applying the new regulations would have negative effects on the project.

MDE believes that some way of transitioning to new design requirements in a reasonable timeframe is needed. It is not the intent to stop projects that are already under construction. However, MDE will not allow projects to rely on outdated stormwater schemes for extended lengths of time. While recognizing that grandfathering is a necessity, MDE has determined that all new plans submitted one year or more after changes to COMAR must comply with the new regulations. Therefore, changes to the regulations (COMAR 26.17.02.01 Purpose and Scope) have been made to require that new projects that do not have approved erosion and sediment control and stormwater management plans within one year of final COMAR adoption must reflect new design requirements. This coincides with the time localities will have to adopt revised stormwater management ordinances.

Issue No. 5: Comprehensive Plan Review and Approval Process. Numerous comments were received regarding the comprehensive stormwater management plan review and approval process. Some comments suggested that each county and municipality is unique and already has plan review and approval procedures in place. Imposing a prescriptive, three step process was described as "burdensome." Conflicting comments were submitted regarding when or even if Soil Conservation Districts (SCDs) will participate. Flexibility regarding streamlining processes for small projects and allowing individual agencies to request specific technical information with plan submittals were also suggested.

The Act requires that "… a comprehensive process for approving grading and sediment control plans and stormwater plans" be established. Proposed in COMAR was a three step process that would allow phased review beginning at concept development and continuing through final approval. In its oversight role for Maryland's stormwater management program, MDE is well aware of the different ways development plans are reviewed from jurisdiction to jurisdiction. In fact, the process proposed is a combination of several components of existing local procedures that addresses the Act requirements. MDE believes that reviewing and approving phased stormwater management plans will not only meet the Act but address the inconsistent plan quality that now exists statewide. Changing long-standing local plan review procedures may prove to be burdensome to some jurisdictions. MDE recognizes that adjustments, some of which will be major, to the way development projects progress will be required. These are inevitable. However, after a period of time, the quality of stormwater management implementation will improve. MDE is committed to this goal.

The clear intent of the Act and the proposed modifications to COMAR is to combine both erosion and sediment control and stormwater management plan review into a single way of evaluating runoff control from start to finish. MDE believes this will involve all agencies in the

development project review process. Those agencies will vary depending on the locality involved. However, the purpose of the plan review process is to get feedback from all agencies at the earliest possible stage of project planning. This will better ensure compliance with the Act and allows subsequent more detailed design to move forward from a common point of reference.

Historically, erosion and sediment control and stormwater management reviews have progressed separately. The Act states that the process developed must take into account "… the cumulative impacts of both plans." MDE believes this requires joint efforts. One commenter stated that they did not want the SCD involved in stormwater plans review. Other commenters suggested that erosion and sediment control design issues need to be addressed at the concept phase. This cannot occur if the SCD is not involved up front. While specific sediment control practice placement and design may be difficult at the concept stage without final grading plans, input from the SCD will be essential to create a seamless review process without having to re-design portions of a project because of a stormwater issue that was not discussed.

MDE agrees that each county and municipality possesses unique procedures and that individual agencies are involved with development project review. Therefore, as local stormwater management ordinances are reviewed, each situation will be viewed with sufficient flexibility to allow for current procedures and existing review agency input to continue. This flexibility will be contingent on meeting the intent of the Act, proposed COMAR changes, and the discussion above. There is no reason, for example, why a plan review process that combines the concept and site development plan stages for small projects cannot be used, provided it is explicitly described in a local stormwater management ordinance. MDE will provide further information and suggestions regarding plan review in its updated Model Stormwater Management Ordinance, which will be provided to localities in June 2009.

Some localities requested that more specific information be required at the concept plan stage. Examples included more detailed soils information and testing and identifying karst features. The regulations have been edited so that the approving agency may require additional information during the concept and site development submittal as needed.

Issue No. 6: Inspection, Maintenance, and Enforcement. Numerous commenters expressed the difficulty of inspecting and maintaining a large number of ESD practices and the further challenge of enforcement on individual lots. Some suggested that Maryland localities should not be required to inspect all ESD practices on a triennial basis. Suggestions for easing the workload burden included as-built certification and checklists for individual practices.

MDE believes that inspection and maintenance are absolutely necessary in order to ensure that all practices are performing effectively. MDE recognizes that efforts will be difficult given the anticipated increase in the number of BMPs implemented. However, there are numerous tools available to assist localities with this task, and these options provide further opportunities to partner with other programs with similar goals.

To address the obvious 'increase' in cost, Maryland's stormwater law allows municipalities to implement a system of charges to assist in funding of stormwater programs, inspection and enforcement, and operation and maintenance of facilities. These fee systems can be used for

staffing and developing the resources necessary to track the location and inspection status of all BMPs including ESD practices. Homeowners may be granted a credit to the fee system when proper documentation is provided to demonstrate that ESD practices on the property have been maintained and are in proper condition. The documentation may consist of an inspection checklist, pictures, and other information required by the municipality. Other tools include recording permanent easements and establishing maintenance agreements with property owners or requiring engineering certification, which is used currently by some localities.

In addition to fee systems and other legal options, municipalities also have the opportunity to form partnerships with other local private groups. For example, MDE received comments from garden club representatives who are eager to assist with outreach to homeowners to promote these practices and ensure that long term care is provided. Localities may find that resources put into education and working with garden clubs and watershed groups may prove more efficient in maintaining ESD practices than trying to enforce legal covenants. This kind of outreach can yield multiple benefits concerning educating citizens about how they can help protect water quality on their own property and how that relates to the health of the Chesapeake Bay.

Future Direction and Conclusion

MDE recognizes the extensive changes and the difficult tasks that lie ahead for local programs, developers, design engineers, and State and federal agencies. MDE will continue to work with local governments and provide support and technical direction during program development and initial ESD implementation. Developing additional technical specifications will be ongoing as new information and future research expand on current knowledge. The Manual will also be re-organized in order to prioritize ESD implementation and resolve any potential conflicts with prior methodologies.